Acquisition
michel.trebaol@ncia.nato.int
TeL: +32 (0)2 707 8266

NCIA/ACQ/2016/0997
12 April 2016

To : See Distribution List

Subject : **INVITATION FOR BID**

Provide Functional Services for Electronic Warfare – Increment 1 - NATO Emitter Database – Next Generation (NEDB-NG)

IFB-CO-14091-EWFS

Reference(s) :
A. AC/4-D/2261(1996 Edition)
B. AC/4-D/2261-ADD2 (1996 Edition)
C. AC/4-D(2008)0002-REV2 and AC/4-D(2009)0002, Best Value Procedures
D. AC/4(PP)D/27214-ADD1
E. AC/4-DS(2013)0013
F. AC/4-DS(2015)0003
G. AC/4-DS(2015)0004
H. NCI Agency NOI NCIA/ACQ/15/1125 dated 3 June 2015

Dear Sir / Madam,

1. Your firm is hereby invited to participate in an International Competitive Bid under the procedures set forth in NATO document AC/4-D/2261 (1996 Edition) (Ref. A) for the provision of Functional Services for Electronic Warfare – Increment 1 - NATO Emitter Database – Next Generation (NEDB-NG).

2. The scope of the envisaged project is described in the prospective Contract (Book II), attached to this letter.

3. NATO intends placing one contract to cover the entire scope of the project. No partial bidding will be allowed.

4. The evaluation method to be used in the selection of the successful Bidder under this solicitation will follow the NATO Best Value Procedures set forth in AC/4-D(2008)0002-REV2 (Ref. C).

5. The reference for the Invitation for Bid is **IFB-CO-14091-EWFS**, and all correspondence concerning the IFB should reference this number.

NATO Communications and Information Agency
Agence OTAN d'information et de communication
Avenue du Bourget 140
1110 Brussels, Belgium
www.ncia.nato.int

6. THE CLOSING TIME FOR SUBMISSION OF BIDS IN RESPONSE TO THIS INVITATION FOR BID IS 14:00 HOURS (BRUSSELS TIME) ON 5 July 2016.

7. This Invitation for Bid consists of the Bidding Instructions, including Administrative Certificates and Bidding Sheets (Book I), and the Prospective Contract (Book II). The Prospective Contract contains the Schedule of Supplies and Services (Part I), the Contract Special Provisions (Part II), the Contract General Provisions (Part III) and the Statement of Work (Part IV). The Statement of Work and the Annexes thereto set forth detailed specifications governing the performance requirements of the Contract.

8. The overall security classification of this bid is "NATO RESTRICTED". When Book II Part IV – Statement of Work Annex A2 and the NATO Restricted References are removed the Security Classification of this IFB is "NATO UNCLASSIFIED". This Invitation for Bid remains the property of the NCI Agency and shall be protected in accordance with the applicable national security regulations.

9. **You are requested to complete and return the enclosed acknowledgement of receipt (Attachment A) as soon as possible and not later than within 10 days of receipt of this IFB, informing this Agency of your intention to bid and requesting to be provided with the NATO RESTRICTED part of this IFB. You are strongly encouraged to complete and return the enclosed acknowledgement of receipt at your earliest convenience.** Your firm is not bound by its initial decision, and if you decide to reverse your stated intention at a later date, you are requested to advise us by a separate letter.

10. Prospective Bidders are advised that the NCI Agency reserves the right to cancel this IFB at any time in its entirety and bears no liability for bid preparation costs incurred by firms or any other collateral costs if bid cancellation occurs.

11. The NCI Agency point of contact for all information concerning this IFB is:

NCI Agency
Avenue du Bourget 140
1110 Brussels, Belgium
Attention: Michel Trebaol – Senior Contracting Officer
E-mail: michel.trebaol@ncia.nato.int

FOR THE GENERAL MANAGER:

L.T. Herway
Chief of Contracts

Attachment:

A) Acknowledgement of Receipt of IFB-CO-14091-EWFS

NCIA/ACQ/2016/0997

ATTACHMENT A

ACKNOWLEDGEMENT OF RECEIPT OF INVITATION FOR BID

IFB-CO-14091-EWFS

Please complete and return within 10 days

by e-mail: michel.trebaol@ncia.nato.int

for the attention of: Mr Michel Trebaol, copy to Mrs Christel Giesau

We hereby advise that we have received the Invitation for Bid (this letter) and have access the unclassified Bidding documentation related to IFB-CO-14091-EWFS

on (Date) _____, together with all enclosures listed in the Table of Contents.

PLEASE CHECK ONE:

☐ As of this date and without commitment on our part, we do intend to submit a bid.

Please send us the NATO RESTRICTED PART of the Invitation for Bids using the appropriate mailing channel. We confirm we are in possession of the appropriate facilities and clearances to store and process NATO RESTRICTED classified documentation.
Please provide contact details of your Security Officer authorised to receive NATO RESTRICTED documentation as detailed below:
Name
Address
Phone
E-mail.

☐ We do not intend to submit a bid.

☐ We are reviewing the requirements of the IFB and will notify you of our decision as soon as possible.

Signature: _____

Printed Name: _____

Title: _____

Company: _____

Address: _____

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NATO Agencies

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ACQ Principal Contracting Assistant - Ms Christel Giesau	1
AS – Chief JISR SL - Mr Matt Roper	1
AS – Deputy Chief JISR SL – Mr Stephen Lewis	1
AS - JISR SL – PM – Mr Cristian Corman	1
ILS – Mr Richard Proietto	1
NLO - Mr Craig Ulsh	1
Legal Office – Mr Vincent Roobaert	1
Registry	1

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12 April 2016

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D. AC/4(PP)D/27214-ADD1
E. AC/4-DS(2013)0013
F. AC/4-DS(2015)0003
G. AC/4-DS(2015)0004
H. NCI Agency NOI NCIA/ACQ/15/1125 dated 3 June 2015

Dear Sir / Madam,

1. Your firm is hereby invited to participate in an International Competitive Bid under the procedures set forth in NATO document AC/4-D/2261 (1996 Edition) (Ref. A) for the provision of Functional Services for Electronic Warfare – Increment 1 - NATO Emitter Database – Next Generation (NEDB-NG).

2. The scope of the envisaged project is described in the prospective Contract (Book II), attached to this letter.

3. NATO intends placing one contract to cover the entire scope of the project. No partial bidding will be allowed.

4. The evaluation method to be used in the selection of the successful Bidder under this solicitation will follow the NATO Best Value Procedures set forth in AC/4-D(2008)0002-REV2 (Ref. C).

5. The reference for the Invitation for Bid is **IFB-CO-14091-EWFS**, and all correspondence concerning the IFB should reference this number.

NATO Communications and Information Agency
Agence OTAN d'information et de communication
Avenue du Bourget 140
1110 Brussels, Belgium
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8. The overall security classification of this bid is "NATO RESTRICTED". When Book II Part IV – Statement of Work Annex A2 and the NATO Restricted References are removed the Security Classification of this IFB is "NATO UNCLASSIFIED". This Invitation for Bid remains the property of the NCI Agency and shall be protected in accordance with the applicable national security regulations.

9. **You are requested to complete and return the enclosed acknowledgement of receipt (Attachment A) as soon as possible and not later than within 10 days of receipt of this IFB, informing this Agency of your intention to bid and requesting to be provided with the NATO RESTRICTED part of this IFB. You are strongly encouraged to complete and return the enclosed acknowledgement of receipt at your earliest convenience.** Your firm is not bound by its initial decision, and if you decide to reverse your stated intention at a later date, you are requested to advise us by a separate letter.

10. Prospective Bidders are advised that the NCI Agency reserves the right to cancel this IFB at any time in its entirety and bears no liability for bid preparation costs incurred by firms or any other collateral costs if bid cancellation occurs.

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NCI Agency
Avenue du Bourget 140
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Attention: Michel Trebaol – Senior Contracting Officer
E-mail: michel.trebaol@ncia.nato.int

FOR THE GENERAL MANAGER:

L.T. Herway
Chief of Contracts

Attachment:

A) Acknowledgement of Receipt of IFB-CO-14091-EWFS

NCIA/ACQ/2016/0997

ATTACHMENT A

ACKNOWLEDGEMENT OF RECEIPT OF INVITATION FOR BID

IFB-CO-14091-EWFS

Please complete and return within 10 days

by e-mail: michel.trebaol@ncia.nato.int

for the attention of: Mr Michel Trebaol, copy to Mrs Christel Giesau

We hereby advise that we have received the Invitation for Bid (this letter) and have access the unclassified Bidding documentation related to IFB-CO-14091-EWFS

on (Date) _____, together with all enclosures listed in the Table of Contents.

PLEASE CHECK ONE:

☐ As of this date and without commitment on our part, we do intend to submit a bid.

Please send us the NATO RESTRICTED PART of the Invitation for Bids using the appropriate mailing channel. We confirm we are in possession of the appropriate facilities and clearances to store and process NATO RESTRICTED classified documentation.
Please provide contact details of your Security Officer authorised to receive NATO RESTRICTED documentation as detailed below:
Name
Address
Phone
E-mail.

☐ We do not intend to submit a bid.

☐ We are reviewing the requirements of the IFB and will notify you of our decision as soon as possible.

Signature: _____

Printed Name: _____

Title: _____

Company: _____

Address: _____

NATO Communications and Information Agency
Agence OTAN d'information et de communication

IFB-CO-14091-EWFS

PROVIDE FUNCTIONAL SERVICES FOR ELECTRONIC WARFARE – INCREMENT 1

NATO Emitter Database Next Generation (NEDB-NG)

BOOK I

INSTRUCTIONS TO BIDDERS

TABLE OF CONTENTS

SECTION 1 INTRODUCTION

1.1. Purpose

1.1.1. The purpose of this solicitation is to invite Bids for the provision of Functional Services for Electronic Warfare Increment 1 - NATO Emitter Database – Next Generation (NEDB-NG).

1.2. Scope

1.2.1. The NATO Communications and Information Agency (NCI Agency), as designated Host Nation responsible for the implementation of Functional Services for Electronic Warfare (EW FS) Capability Package CP9C0107 is authorized to award a Contract to a Contractor (hereinafter referred to as “Contractor”).

1.2.2. NEDB-NG will provide an enhanced stand-alone and web-based database capability comprising current/future NEDB (radar, platform and location information), current/future NEDB-EO (electro-optical emitters, platform and location information), current/future communication systems (communication emitter, platform and location information), as well as a tasking system, an exchange mechanism, and data quality control features. It is envisioned that this capability will be used by NATO Nations, the NATO Joint Electronic Warfare Core Staff (JEWCS) and Electronic Warfare (EW) communities within NATO.

1.3. Overview of the Prospective Contract.

1.3.1. The NEDB-NG project will implement the following:

1.3.1.1. NEDB-NG shall provide a NATO accredited data repository for the current/future NEDB objects (such as emitters, platforms, weapons, antennas, technical parameters and location information) and their interdependencies. All entries must have creation date, modification date, security classification and ownership.

1.3.1.2. NEDB-NG shall be able to store all data currently stored in NEDB (including NEDB-EO).

1.3.1.3. NEDB-NG shall provide a database management function that permits multi-user access to the database with controlled updating and sharing among NATO users and National users.

1.3.1.4. NEDB-NG shall provide a web-based architecture on the NATO Secret network to allow users to retrieve information in the form of predefined and ad hoc reports and submit new, update and delete existing information in the database, while implementing NATO security requirements on access to the information; user access to the web portal/application will be based on functional roles such as database manager, administrator, provider, and reader.

1.3.1.5. NEDB-NG shall provide a message exchange function with notification (“Active Items”) to allow Nations and NATO JEWCS to coordinate and keep track of tasks related to EW data updates. Messages will be stored in the NEDB-NG to record progress and history of messages and notifications.

1.3.1.6. NEDB-NG shall provide Quality Control functionality to assure the quality of the data entries according to a set of specified business rules.

1.3.1.7. NEDB-NG shall provide a stand-alone capability, in case of working outside the NATO Secret network boundary. The stand-alone capability must offer the same capabilities and look-and-feel as the on-line version. The stand-alone capability must be able to load a snapshot of data from the JEWCS master database and export data modifications (synchronisation data) to the JEWCS master database on any media (CD, external memory, etc.).

1.3.1.8. NEDB-NG shall support the exchange of information using the NATO Common Electronic Order of Battle (C-EOB) format.

1.3.1.9. NEDB-NG shall provide an export functionality to allow objects having geo-location information to be displayed in Geographic Information Systems (GIS) tools and mapping applications.

1.3.1.10. NEDB-NG shall be able to run on a local machine (e.g. laptop) that may be installed outside the NATO Secret network boundary.

1.3.1.11. Contractor shall perform data migration to convert all existing data in NEDB and NEDB-EO into the new database model.

1.3.1.12. NEDB-NG data used outside the database shall have meta-data in accordance with the NATO Discovery Metadata Specification (i.e. Security Classification, Date, Creator, Unique ID, etc.).

1.3.1.13. NEDB-NG shall use a web-interface compliant to the NATO HMI Style Guide for Rich C4ISR Applications.

1.3.1.14. NEDB-NG shall be available 24/7 via NSWAN.

1.3.1.15. Provide application programming interfaces (API’s) or web-service interfaces to enable external access to database information.

1.3.1.16. NEDB-NG and all its components shall operate on Bi-SC AIS baseline systems. NEDB-NG shall comply with all applicable NATO policies, guidelines and standards as well as applicable non-NATO standards.

1.3.1.17. NEDB-NG shall be supported using Integrated Logistic Support/Contractor Logistic Support (ILS/CLS).

1.3.1.18. Contractor will provide documentation for NEDB-NG.

1.3.1.19. Contractor will provide Train-the-Trainer course for NATO JEWCS and National NEDB-NG Database Administrators (a total maximum of 60 students to allow future in-house training of all roles without external contractor support).

1.3.2. The Geographical Scope of the NCI Agency includes:

1.3.2.1. NCI Agency, The Hague, The Netherlands.

1.3.2.2. NCI Agency, Mons, Belgium,

1.3.2.3. NATO Joint Electronic Warfare Core Staff (JEWCS), Yeovilton, United Kingdom.

1.4. Governing Rules, Eligibility, and Exclusion Provisions

1.4.1. This solicitation is an International Invitation for Bid and is issued in accordance with the procedures for International Competitive Bidding set forth in the NATO document AC/4-D/2261 (1996 Edition).

1.4.2. Pursuant to these procedures, Bidding is restricted to companies from participating NATO member nations for which a Declaration of Eligibility has been issued by their respective government authorities.

1.4.3. Best Value Evaluation Method

The evaluation method to be used in the selection of the successful Bidder under this solicitation will follow the Best Value Procedures set forth in AC/4-D(2008)0002-REV2 dated 15 July 2015.

1.4.4. The Bid evaluation criteria and the detailed evaluation procedures are described in SECTION 4

1.4.5. The Bidder shall refer to the Purchaser all queries for resolution of any conflicts found in information contained in this document in accordance with the procedures set forth in paragraph 2.6 "Request for IFB Clarifications".

1.5. Security

1.5.1. This Invitation for Bid has been classified as NATO RESTRICTED. When Book II Part IV – Statement of Work Annex A2 and the NATO Restricted References are removed the Security Classification of this IFB is “NATO UNCLASSIFIED”.

1.5.2. Contractor personnel are required to possess a security clearance of “NATO SECRET” (NS) for the performance of the Contract.

1.5.3. Contractor will be required to handle and store classified material to the level of “NATO SECRET” and the Contractor shall have the appropriate facility and personnel clearances at the date of Contract Signature. Should a Contractor be unable to perform the Contract due to the fact that the facility/security clearances have not been provided by their respective

national security agency, this lack of clearance cannot be the basis for a claim of adjustment or an extension of schedule, nor the lack of clearance be considered a mitigating circumstance in the case of an assessment of Liquidated Damages or a determination of Termination For Default by the Purchaser.

1.5.4. Contractor personnel working at NATO or National sites without such a clearance confirmed by the appropriate national security authority and transmitted to the cognisant NATO or National security officer at least fourteen (14) days prior to the site visit, will be denied access to the site. Denial of such access by the Purchaser may not be used by the Contractor as the basis for a claim of adjustment or an extension of schedule nor can the denial of access be considered a mitigating circumstance in the case of an assessment of Liquidated Damages or a determination of Termination for Default by the Purchaser.

1.5.5. Bidders are advised that Contract signature will not be delayed in order to allow the processing of NS security clearances for personnel or facilities and, should the otherwise successful Bidder not be in a position to accept the offered Contract within a reasonable period of time, due to the fact that its personnel or facilities do not possess the appropriate security clearance(s), the Purchaser may determine the Bidder's Offer to be non-compliant and offer the Contract to the next ranking Bidder. In such a case, the Bidder who would not sign the Contract shall be liable for forfeiture of the Bid Guarantee.

1.6. Documentation

1.6.1. All documentation, including the IFB itself, all applicable documents and any reference documents provided by the Purchaser are solely to be used for the purpose of preparing a response to this IFB. They are to be safeguarded at the appropriate level according to their classification and reference documents are provided "as is", without any warranty as to quality or accuracy.

SECTION 2 GENERAL BIDDING INFORMATION

2.1. Definitions

2.1.1. In addition to the definitions and acronyms set in the Contract Special Provisions (Part II) of the prospective Contract, and the definitions and acronyms set in the Clause entitled “Definitions of Terms and Acronyms” of the Contract General Provisions (Part III) of the prospective Contract, the following terms and acronyms, as used in this Invitation for Bid shall have the meanings specified below:

2.1.1.1. "Bidder": a firm, consortium, or joint venture which submits an offer in response to this solicitation. Bidders are at liberty to constitute themselves into any form of Contractual arrangements or legal entity they desire, bearing in mind that in consortium-type arrangements a single judicial personality shall be established to represent that legal entity. A legal entity, such as an individual, Partnership or Corporation, herein referred to as the “Principal Contractor”, shall represent all members of the consortium with the NCI Agency and/or NATO. The “Principal Contractor” shall be vested with full power and authority to act on behalf of all members of the consortium, within the prescribed powers stated in an irrevocable Power of Attorney issued to the “Principal Contractor” by all members associated with the consortium. Evidence of authority to act on behalf of the consortium by the “Principal Contractor” shall be enclosed and sent with the Bid. Failure to furnish proof of authority shall be a reason for the Bid being declared non-compliant.

2.1.1.2. "Compliance": strict conformity to the requirements and standards specified in this IFB and its attachments.

2.1.1.3. "Contractor": the awardee of this solicitation of offers, who shall be responsible for the fulfilment of the requirements established in the prospective Contract.

2.1.1.4. “Firm of a Participating Country”: a firm legally constituted or chartered under the laws of, and geographically located in, or falling under the jurisdiction of a Participating Country.

2.1.1.5. “IFB”: Invitation for Bid.

2.1.1.6. “Participating Country”: any of the NATO nations contributing to the project, namely, (in alphabetical order): ALBANIA, BELGIUM, BULGARIA, CANADA, CROATIA, CZECH REPUBLIC, DENMARK, ESTONIA, FRANCE, GERMANY, GREECE, HUNGARY, ICELAND, ITALY, LATVIA, LITHUANIA, LUXEMBOURG, THE NETHERLANDS, NORWAY, POLAND, PORTUGAL, ROMANIA, SLOVAKIA, SLOVENIA, SPAIN, TURKEY, THE UNITED KINGDOM and THE UNITED STATES.

2.1.1.7. “Purchaser”: NATO Communications and Information Agency (NCI Agency) or its legal successor.

2.1.1.8. "Quotation" or "Bid": a binding offer to perform the work specified in the attached prospective Contract (Book II).

2.2. Eligibility and Origin of Equipment and Services

2.2.1. As stated in paragraph 1.4.1 above only firms from a Participating Country are eligible to engage in this competitive Bidding process. In addition, all Contractors, Subcontractors and manufacturers, at any tier, must be from Participating Countries.

2.2.2. None of the work, including project design, labour and services shall be performed other than by firms from and within Participating Countries.

2.2.3. No materials or items of equipment down to and including identifiable Sub-assemblies shall be manufactured or assembled by a firm other than from and within a Participating Country.

2.2.4. Unless otherwise authorised by the terms of the prospective Contract, the Intellectual Property Rights to all design documentation and related system operating software shall reside in NATO member countries, and no license fees or royalty charges shall be paid by the Contractor to firms, individuals or governments other than within the NATO member community.

2.3. Bid Delivery and Bid Closing

2.3.1. All Bids shall be in the possession of the Purchaser at the address given below on/or before **14.00 hours (Brussels Time) on 5 July 2016**, at which time and date Bidding shall be closed.

2.3.2. Bids shall be delivered to the following address:

2.3.2.1. By Post:

NCI Agency
ACQ/ASG (ATTN: Mr. Michel Trebaol)
Boulevard Leopold III
1110 Brussels
Belgium

2.3.2.2. Hand Carried Service or courier:

NCI Agency
ACQ/ASG (ATTN: Mr. Michel Trebaol)
Bâtiment Z
Avenue du Bourget 140
1110 Brussels
Belgium

2.3.3. Bids submitted by electronic means are not permitted and will not be considered. Bidders are advised that security or other personnel remaining

on the premises outside of normal business hours may decline to sign or issue receipts for delivered items.

2.3.4. Late Bids

2.3.4.1. Bids which are delivered to the Purchaser after the specified time and date set forth above for Bid Closing are "Late Bids" and shall not be considered for award. Such Bids will be returned unopened to the Bidder at the Bidder's expense unless the Purchaser can determine that the Bid in question meets the criteria for consideration as specified below.

2.3.4.2. *Consideration of Late Bid* – The Purchaser considers that it is the responsibility of the Bidder to ensure that the Bid submission arrives by the specified Bid Closing time. Considering the number and quality of express delivery services, courier services and special services provided by the national postal systems, a late Bid shall only be considered for award under the following circumstances:

2.3.4.2.1. A Contract has not already been awarded pursuant to the Invitation for Bid, and

2.3.4.2.2. The Bid was sent to the address specified in the IFB by ordinary, registered or certified mail not later than ten (10) calendar days before the Bid closing date and the delay was due solely to the national or international postal system for which the Bidder bears no responsibility (the official postmark for ordinary and Registered Mail or the date of the receipt for Certified Mail will be used to determine the date of mailing), or

2.3.4.2.3. The Bid was hand carried, or delivered by a private courier service and the Bidder can produce a receipt which demonstrates that the delivery was made to the correct address and received by a member of the NCI Agency and the failure to be received by the Contracting Authority was due to mishandling within the Purchaser's organisation.

2.3.4.3. A Late Bid which was hand-carried, or delivered by a private courier, for which a proper receipt cannot be produced, cannot be considered for award under any circumstances nor can late Bids which bear no post marks or for which documentary evidence of mailing date cannot be produced.

2.4. Requests for Extension of Bid Closing Date

2.4.1. Bidders are informed that requests for extension to the closing date for the IFB shall be submitted only via the point of contact indicated in paragraph 2.5.1 below. Any request for extension shall be submitted by the Bidder no later than fourteen (14) days prior to the established Bid closing date.

2.5. Purchaser's Point of Contact

2.5.1. The Purchaser point of contact for all information concerning this Invitation for Bid is:

Mr. Michel Trebaol Senior Contracting Officer
Acquisition Support Group
Tel: +32 2 707 8266
Fax: +32 2 707 8770
E-mail: michel.trebaol@ncia.nato.int

2.5.2. All correspondence related to the IFB shall be forwarded to:

NCI Agency
Acquisition Support Group
Boulevard Leopold III
1110 Brussels, Belgium
Attn: Mr Michel Trebaol (contact details stated above)

2.6. Request for IFB Clarifications

2.6.1. Bidders, during the solicitation period, are encouraged to query and seek clarification of any matters of a contractual, administrative and technical nature pertaining to this IFB.

2.6.2. All requests for clarification shall be forwarded to the Purchaser using the Clarification Request Forms provided at Annex E of this Book I. Bidders are encouraged to keep the classification of their request NATO Unclassified where possible by making use of references to the specific SoW/SRS paragraphs instead of repeating the text in their requests . Such requests shall be forwarded via the appropriate mean of communication permitted by the Security classification of the request (e.g. unclassified per email, classified per courier) to the point of contact specified in paragraph 2.5.1 above and shall arrive not later than twenty eight (28) calendar days prior to the stated "Bid Closing Date". The Purchaser is under no obligation to answer requests for clarification submitted after this time. Requests for clarification must address the totality of the concerns of the Bidder, as the Bidder will not be permitted to revisit areas of the IFB for additional clarification except as noted in 2.6.3 below.

2.6.3. Additional requests for clarification are limited only to the information provided as answers by the Purchaser to Bidder requests for clarification. Such additional requests shall arrive not later than fourteen (14) calendar days before the established Bid Closing Date.

2.6.4. The Purchaser may provide for a re-wording of questions and requests for clarification where it considers the original language ambiguous, unclear, subject to different interpretation or revelatory of the Bidder’s identity.

2.6.5. Bidders are advised that subsequent questions and/or requests for clarification included in a Bid shall neither be answered nor considered for evaluation.

2.6.6. Except as provided above, all questions will be answered by the Purchaser and the questions and answers (but not the identity of the questioner) will be issued in writing to all prospective Bidders.

2.6.7. Where the extent of the changes implied by the response to a clarification request is of such a magnitude that the Purchaser deems necessary to issue revised documentation, the Purchaser will do so by the means of the issuance of a formal IFB amendment pursuant to AC/4-D/-2261 and in accordance with paragraph 2.8 below.

2.6.8. The Purchaser reserves the right to reject questions and clarification requests clearly devised or submitted for the purpose of artificially obtain an extension of the bidding time (i.e. clarifications re-submitted using different wording where such wording does not change the essence of the clarification being requested).

2.6.9. The published responses issued by the Purchaser shall be regarded as the authoritative interpretation of the Invitation for Bid. Any amendment to the language of the IFB included in the answers will be issued as an IFB Amendment and shall be incorporated by the Bidder in his offer.

2.7. Requests for Waivers and Deviations

2.7.1. Bidders are informed that requests for alteration to, waivers or deviations from the terms and conditions of this IFB and attached prospective Contract (Book II) will not be considered after the request for clarification process. Requests for alterations to the other requirements, terms or conditions of the Invitation for Bid or the prospective Contract may only be considered as part of the clarification process set forth in paragraph 2.6 above. Requests for alterations to the specifications, terms and conditions of the Contract which are included in a Bid as submitted may be regarded by the Purchaser as a qualification or condition of the Bid and may be grounds for a determination of non-compliance.

2.8. Amendment of the Invitation for Bid

2.8.1. The Purchaser may revise, amend or correct IFB at any time prior to the Bid Closing Date as detailed in paragraph 2.3. Any and all modifications will be transmitted to all Bidders by an official amendment designated as such and signed by the Purchaser. This process may be part of the clarification procedures set forth in paragraph 2.6 above or may be an independent action on the part of the Purchaser.

2.8.2. All such IFB amendments issued by the Purchaser shall be acknowledged by the Bidder in its Bid by completing the “Acknowledgement of Receipt of IFB Amendments” certificate at Annex B-2. Failure to acknowledge receipt of all amendments may be grounds to determine the Bid to be administratively non-compliant.

2.8.3. The Purchaser will consider the potential impact of amendments on the ability of prospective Bidders to prepare a Bid within the allotted time. The Purchaser may extend the "Bid Closing Date" at its discretion and such extension will be set forth in the amendment.

2.9. Modification and Withdrawal of Bids

2.9.1. Bids, once submitted, may be modified by Bidders, but only to the extent that the modifications are in writing, conform to the requirements of the IFB, and are received by the Purchaser prior to the Bid Closing Date as detailed in paragraph 2.3. Such modifications will be considered as an integral part of the submitted Bid.

2.9.2. Modifications to Bids which arrive after the Bid Closing Date will be considered as "Late Modifications" and will be processed in accordance with the procedure detailed in paragraph 2.3.4, except that unlike a "Late Bid", the Purchaser will retain the modification until a selection is made. A modification to a Bid which is determined to be late will not be considered in the evaluation and selection process. If the Bidder submitting the modification is determined to be the successful Bidder on the basis of the unmodified Bid, the modification may then be opened. If the modification makes the terms of the Bid more favourable to the Purchaser, the modified Bid may be used as the basis of Contract award. The Purchaser, however, reserves the right to award a Contract to the apparent successful Bidder on the basis of the Bid submitted and disregard the late modification.

2.9.3. A Bidder may withdraw its Bid at any time prior to Bid Opening without penalty. In order to do so, an authorised agent or employee of the Bidder must provide an original statement of the firm's decision to withdraw the Bid and subsequently remove the Bid from the Purchaser’s premises.

2.9.4. Except as provided in paragraph 2.10.4.2 below, a Bidder may withdraw its Bid after Bid Opening only by forfeiture of the Bid Guarantee.

2.10. Bid Validity

2.10.1. Bidders shall be bound by the term of their Bid for a period of twelve (12) months starting from the Bid Closing Date specified in paragraph 2.3.1 above.

2.10.2. In order to comply with this requirement, the Bidder shall complete the Certificate of Bid Validity set forth in Annex B-4. Bids offering less than the period of time referred to above for acceptance by the Purchaser may be determined to be non-compliant.

2.10.3. The Purchaser will endeavour to complete the evaluation and make an award within the period referred to above. However, should that period of time prove insufficient to render an award, the Purchaser reserves the right

to request an extension of the period of validity of all Bids which remain under consideration for award.

2.10.4. Upon notification by the Purchaser of such a request for a time extension, the Bidders shall have the right to:

2.10.4.1. Accept this extension of time in which case Bidders shall be bound by the terms of their offer for the extended period of time and the Bid Guarantee and Certificate of Bid Validity extended accordingly; or

2.10.4.2. Refuse this extension of time and withdraw the Bid, in which case the Purchaser will return to the Bidder its Bid Guarantee in the full amount without penalty.

2.10.5. Bidders shall not have the right to modify their Bids due to a Purchaser request for extension of the Bid validity unless expressly stated in such request.

2.11. Bid Guarantee

2.11.1. The Bidder shall furnish with his Bid a guarantee in an amount equal to One Hundred and Thirty-five Thousand Euro (€135,000). The Bid Guarantee shall be substantially similar to Annex C as an irrevocable, unqualified and unconditional Standby Letter of Credit (SLC) issued by a Belgian banking institution fully governed by Belgian legislation or issued by a non-Belgian financial institution and confirmed by a Belgian banking institution fully governed by Belgian legislation. In the latter case signed original letters from both the issuing institution and the confirming institution must be provided. The confirming Belgian bank shall clearly state that it will guarantee the funds, the drawing against can be made by the NCI AGENCY at its premises in Belgium. Bid Guarantees shall be made payable to the Treasurer, NATO CI Agency.

2.11.2. Alternatively, a Bidder may elect to post the required Guarantee by certified cheque. If the latter method is selected, Bidders are informed that the Purchaser will cash the cheque on the Bid Closing Date or as soon as possible thereafter.

2.11.3. If the Bid Closing Date is extended after a Bidder's financial institution has issued a Bid Guarantee, it is the obligation of the Bidder to have such Bid Guarantee (and confirmation, as applicable) extended to reflect the revised Bid Validity date occasioned by such extension.

2.11.4. Failure to furnish the required Bid Guarantee in the proper amount, and/or in the proper form and/or for the appropriate duration by the Bid Closing Date may be cause for the Bid to be determined non-compliant.

2.11.5. In the event that a Bid Guarantee is submitted directly by a banking institution, the Bidder shall furnish a copy of said document in the Bid Administration Package.

2.11.6. The Purchaser will make withdrawals against the amount stipulated in the Bid Guarantee under the following conditions:

2.11.6.1. The Bidder has submitted a Bid and, after Bid Closing Date (including extensions thereto) and prior to the selection the compliant Bid determined to represent the best value, withdraws his Bid, or states that he does not consider his Bid valid or agree to be bound by his Bid, or

2.11.6.2. The Bidder has submitted a compliant Bid determined by the Agency to represent the best value, but the Bidder declines to sign the Contract offered by the Agency, such Contract being consistent with the terms of the Invitation for Bid.

2.11.6.3. The Purchaser has offered the Bidder the Contract for execution but the Bidder has been unable to demonstrate compliance with the security requirements of the Contract within a reasonable time,

2.11.6.4. The Purchaser has entered into the Contract with the Bidder but the Bidder has been unable or unwilling to provide the Performance Guarantee required under the terms of the Contract within the time frame required.

2.11.7. Bid Guarantees will be returned to Bidders as follows:

2.11.7.1. to non-compliant Bidders forty-five (45) days after notification by the Purchaser of a non-compliant Bid (except where such determination is challenged by the Bidder; in which case the Bid Guarantee will be returned forty-five (45) days after a final determination of non-compliance);

2.11.7.2. to all other unsuccessful Bidders within thirty (30) days following the award of the Contract to the successful Bidder;

2.11.7.3. to the successful Bidder upon submission of the Performance Guarantee required by the Contract or, if there is no requirement for such a Performance Guarantee, upon Contract execution by both parties.

2.11.7.4. pursuant to paragraph 2.10.4.2 above.

2.11.8. “Standby Letter of Credit" or “SLC” as used herein, means a written commitment by a Belgian financial institution either on its own behalf or as a confirmation of the Standby Letter of Credit issued by a non-Belgian bank to pay all or part of a stated amount of money, until the expiration date of the letter, upon presentation by the Purchaser of a written demand therefore. Neither the financial institution nor the Contractor can revoke or condition the Standby Letter of Credit. The term “Belgian financial institution” includes non-Belgian financial institutions licensed to operate in Belgium,

2.12. Cancellation of Invitation for Bid

2.12.1. The Purchaser may cancel, suspend or withdraw for re-issue at a later date this IFB at any time prior to Contract award. No legal liability on the part of the Purchaser for payment of any sort shall arise and in no event will any Bidder have cause for action against the Purchaser for the recovery of costs incurred in connection with preparation and submission of a Bid in response to this IFB.

2.13. Electronic Transmission of Information and Data

2.13.1. The Purchaser will communicate answers to requests for clarification and amendments to this IFB to the prospective Bidders as soon as practicable.

2.13.2. Bidders are cautioned that due to the security classification of the IFB (NATO RESTRICTED) electronic transmission of documentation which contains classified information is not permissible.

2.14. Supplemental Agreements

2.14.1. Bidders are required, in accordance with the certificate at Annex B-7 of these Instructions to Bidders, to disclose any prospective Supplemental Agreements that are required by national governments to be executed by NATO/ NCI AGENCY as a condition of Contract performance.

2.14.2. Supplemental Agreements are typically associated with, but not necessarily limited to, national export control regulations, technology transfer restrictions and end user agreements or undertakings.

2.14.3. Bidders are cautioned that failure to provide full disclosure of the anticipated requirements and the terms thereof, to the best of the Bidder's knowledge and experience, may result in the Purchaser withholding award of the Contract or cancelling an executed Contract if it is discovered that the terms of such Supplemental Agreements contradict salient conditions of the Prospective Contract to the extent that either key objectives cannot be accomplished or basic Contract principles and Purchaser rights have been abridged.

2.15. Notice of Limitations on Use of Intellectual Property Delivered to the Purchaser

2.15.1. Bidders are instructed to review Clause 30 of the Contract General Provisions set forth Part III of Book II herein. This Clause sets forth the definitions, terms and conditions regarding the rights of the Parties concerning Intellectual Property developed and/or delivered under this Contract or used as a basis of development under this Contract.

2.15.2. Bidders are required to disclose, in accordance with Annex B-10, Annex B-11, the Intellectual Property proposed to be used by the Bidder that will

be delivered with either Background Intellectual Property Rights or Third Party Intellectual Property Rights. Bidders are required to identify such Intellectual Property and the basis on which the claim of Background or Third Party Intellectual Property is made.

2.15.3. Bidders are further required to identify any restrictions on Purchaser use of the Intellectual Property that is not in accordance with the definitions and rights set forth in Clause 30 of the Contract General Provisions, or any other provision of the Contract concerning use or dissemination of such Intellectual Property.

2.15.4. Bidders are reminded that restrictions on use or dissemination of Intellectual Property conflicting with Clause 30 of the Contract General Provisions or with the objectives and purposes of the Purchaser as stated in the Prospective Contract shall result in a determination of a non-compliant Bid.

2.16. Mandatory Quality Assurance and Quality Control Standards

2.16.1. Bidders are requested to note that, in accordance with the Certificate at Annex B-8 hereto, Bidders shall provide documentary evidence that the Bidder possesses a current certification that is compliant with the requirements of Allied Quality Assurance Publication (AQAP) 2110, ISO 9001:2008, or an equivalent QA/QC regime.

2.16.2. Bidders shall further demonstrate that such regime is applied within the Bidder's internal organisation, as well as extended to its relationships with Subcontractors.

2.16.3. If the Bidder is offering a QA/QC regime that is claimed to be equivalent to AQAP 2110 or ISO 9001:2008, the burden of proof of such equivalency shall be on the Bidder and such evidence of equivalency shall be submitted with the Certificate at Annex B-8 in the Bid Administration Package.

2.16.4. Failure to execute this Certificate, or failure to provide documentary evidence of compliance with this requirement may result in a determination of non-compliance for the submitted Bid.

SECTION 3 BID PREPARATION INSTRUCTIONS

3.1. General

3.1.1. Bidders shall prepare and submit their Bid in accordance with the requirements and format set forth in this IFB. Compliance with all Bid submission requirements is mandatory. Failure to submit a Bid in conformance with the stated requirements may result in a determination of non-compliance by the Purchaser and the elimination of the Bid from further consideration.

3.1.2. Bidders shall not simply restate the IFB requirements. A Bid shall demonstrate that a Bidder understands the terms, conditions and requirements of the IFB and its ability to provide all the services and deliverables listed in the Schedules of the prospective Contract.

3.1.3. Bidders are informed that the quality, thoroughness and clarity of the Bid will affect the overall scoring of the Bid. Although the Purchaser may request clarification of the Bid, it is not required to do so and may make its determination on the content of the Bid as written. Therefore, Bidders shall assume that inconsistencies, omissions, errors, lack of detail and other qualitative deficiencies in the submitted Bid will have a negative impact on the final Best Value score.

3.1.4. Partial Bids will be declared non-compliant.

3.1.5. Bidders are advised that the Purchaser reserves the right to incorporate the successful Bidder's Offer in whole or in part by reference in the resulting Contract.

3.1.6. If no specific format has been established for electronic versions/ soft copies of the Bid documentation to be provided in accordance with paragraph 3.2 below, Bidders shall deliver this type of documentation in an electronic format which is best suited for review and maintenance by the Purchaser (e.g., Project Master Schedule in MS Project format, Text Documents in MS Word).

3.1.7. In the event of a discrepancy between the soft and hard copies of the Bid documentation to be provided in accordance with paragraph 3.2 below, the hard copy will be considered as the authoritative bid document for the purpose of evaluation and take precedence.

3.1.8. All documentation submitted as part of the Bid shall be classified no higher than "NATO RESTRICTED".

3.1.9. All documentation submitted as part of the Bid shall be in English.

3.2. Bid Package Content

3.2.1. The complete Bid shall consist of three distinct and separated parts described in the following subparagraphs. Detailed requirements for the structure and content of each of these packages are contained in these Bidding Instructions.

3.2.2. The Bid Administration Package, containing one (1) hard copy and one (1) soft copy of the documents specified in paragraph 3.4 below.

3.2.3. The Price Quotation, containing two (2) hard copies and two (2) soft copies in MS Excel format of the Price Quotation specified in paragraph 3.5 below.

3.2.4. The Technical Proposal Package as specified below. Each Part shall be in a separate binder or file for ease of segregation and handling and shall each be submitted in one (1) hard copy and four (4) soft copies.

3.2.4.1. *Part 1 – The Technical Approach Proposal, as described in paragraph 3.6.1 below.*

3.2.4.2. *Part 2 - The Management Proposal, as specified in paragraph 3.6.2 below.*

3.2.4.3. *Part 3 - The Supportability Proposal, as specified in paragraph 3.6.3 below.*

3.3. Package Marking

3.3.1. The separate parts of the Bid shall be placed in outer containers for delivery. All outer containers into which Bidding documents are placed shall be opaque or wrapped in opaque paper, sealed and identified with the following markings:

SEALED BID IFB-CO-14091-EWFS

BOX X of Y (1 of 3, 2 of 3, etc.)

NOTIFY Mr. Michel Trebaol (X8266) / Ms Christel Giesau (X8498) UPON RECEIPT

3.3.2. Each of the Bid parts placed in the outer container(s) shall be separately wrapped (multiple copies of the same document may be wrapped together), and marked as follows:

3.3.2.1. Name and address of the Bidder,

3.3.2.2. The words “SEALED BID” followed by the reference “IFB-CO-14091-EWFS”;

3.3.2.3. The appropriate package marking, i.e. “Bid Administration”, “Price Quotation”, “Technical Proposal”.

3.4. Bid Administration Package

3.4.1. The Package must include the original of the Bid Guarantee required by paragraph 2.11 of the Bidding Instructions. If the Bid Guarantee is sent to the Purchaser directly from the Bidder's bank, a letter, in lieu of the actual Guarantee, shall be included specifying the details of the transmittal. Bidders are reminded that the Bid Guarantee shall reflect any extensions to the Bid Validity Date due to extensions in the Bid Closing Date.

3.4.2. The Package shall include the certificates set forth in the Annex to these Bidding Instructions, signed in the original by an authorised representative of the Bidder. The text of the certificates must not be altered in any way. The certificates are as follows:

3.4.2.1. Annex B-1 (Certificate of Legal Name of Bidder)

3.4.2.2. Annex B-2 (Acknowledgement of Receipt of IFB Amendments)

3.4.2.3. Annex B-3 (Certificate of Independent Determination)

3.4.2.4. Annex B-4 (Certificate of Bid Validity)

3.4.2.5. Annex B-5 (Certificate of Exclusion of Taxes, Duties and Charges)

3.4.2.6. Annex B-6 (Comprehension and Acceptance of Contract Special and General Provisions)

3.4.2.7. Annex B-7 (Disclosure of Requirements for NCI Agency Execution of Supplemental Agreements) with the prospective text of such Agreements, as applicable.

3.4.2.8. Annex B-8 (Certificate of Compliance AQAP 2110 or ISO 9001:2008 or Equivalent) with a copy of the relevant quality certification attached to it.

3.4.2.9. Annex B-9 (List of Prospective Subcontractors)

3.4.2.10. Annex B-10 (Bidder Background IPR)

3.4.2.11. Annex B-11(List of Subcontractor IPR)

3.4.2.12. Annex B-12 (Certificate of Origin of Equipment, Services, and Intellectual Property)

3.4.2.13. Annex B-13 (List of Proposed Key Personnel

3.4.2.14. Annex B-14 (Certificate of Price Ceiling)

3.5. Price Quotation

3.5.1. Package Contents

3.5.1.1. This envelope must contain the following documentation and media in the quantities provided in paragraph 3.2.3 above:

3.5.1.1.1. The completed set of sheets contained in the electronic file “2- IFB-CO-14091-EWFS

3.5.1.1.2. -Bidding Sheets.xls” submitted as part of this IFB.

3.5.1.1.3. CD-ROM or DVD containing an electronic version, in MS Excel format, of the documentation stated in paragraph 3.5.1.1.1 above.

3.5.2. General Rules

3.5.2.1. Bidders are advised that the total price for CLINs1 to 7, 9 and 10 (Investment part of the Bid) shall not exceed a ceiling of **EUR 3,427,022** (Three million four hundred and twenty seven thousand twenty-two Euro) and that the total price for CLIN 8 (CLS part of the bid) shall not exceed a ceiling of **EUR 1,979,452**, (one million nine hundred and seventy nine thousand four hundred and fifty two Euro). Bids submitted in excess of any of these figures may be determined to be non-compliant and eliminated from further consideration.

3.5.2.2. Bidders shall prepare their Price Quotation by completing the yellow highlighted sections of the Bidding Sheets referred in paragraph 3.5.1.1.1 above, in accordance with the instructions specified in Annex A-1 and the bidding sheets.

3.5.2.3. The structure of the Bidding Sheets shall not be changed, other than as indicated elsewhere, nor should any quantity or item description in the Bidding Sheets. The currency(ies) of each Contract Line Item and sub-item shall be shown. The prices provided shall be intended as the comprehensive total price offered for the fulfilment of all requirements as expressed in the IFB documentation including but not limited to those expressed in the SOW and SRS.

3.5.2.4. Bidders shall furnish Firm Fixed Prices for all required items in accordance with the format set forth in the Instructions for preparation of the Bidding Sheets. This includes Firm Fixed Prices for all optional CLINs 8 to 10.

3.5.2.5. Offered prices shall not be “conditional" in nature. Any comments supplied in the Bidding Sheets which are conditional in nature, relative to the offered prices, may result in a determination that the Bid is non-compliant.

3.5.2.6. Bidders are responsible for the accuracy of their Price Quotations. Price Quotations that have apparent computational errors may have such errors resolved in the Purchaser’s favour or, in the case of gross omissions, inconsistencies or errors, may be determined to be non-compliant. In the case of inconsistencies between the electronic version of the Bidding Sheets and the paper “hard copy” of the Bidding Sheets, the “hard copy” will be considered by the Purchaser to have precedence over the electronic version.

3.5.2.7. Bidders shall quote in their own national currency or in EURO. Bidders may also submit bids in multiple currencies including other NATO member states' currencies under the following conditions:

3.5.2.7.1. The currency is of a "participating country" in the project, and

3.5.2.7.2. The Bidder can demonstrate, either through sub-contract arrangements or in its proposed work methodology, that it will have equivalent expenses in that currency. All major subcontracts and their approximate anticipated value should be listed on a separate sheet and included with the Price Quotation.

3.5.2.8. The Purchaser, by virtue of his status under the terms of Article IX and X of the Ottawa Agreement, is exempt from all direct and indirect taxes (incl. VAT) and all customs duties on merchandise imported or exported.

3.5.2.9. Bidders shall therefore exclude from their price Bid all taxes, duties and customs charges from which the Purchaser is exempted by international agreement and are required to certify that they have done so through execution of the Certificate at Annex B-5.

3.5.2.10. Unless otherwise specified in the instructions for the preparation of Bidding Sheets in Annex A-1, all prices quoted in the proposal shall be on the basis that all deliverable items shall be delivered “Delivery Duty Paid (DDP)” in accordance with the International Chamber of Commerce INCOTERMS ® 2010.

3.5.2.11. The Bidder’s attention is directed to the fact that Price Quotation shall contain no document and/or information other than the priced copies of the Bidding Sheets. Any other document will not be considered for evaluation.

3.6. Technical Proposal Package

3.6.1. This package shall include all information required to fully understand how the Bidder indents to implement the project, in particular the criteria and sub-criteria listed in Section 4.2.4. At minimum the technical proposal package shall contain the following items:

3.6.1.1. Table of Contents

3.6.1.2. Executive Summary

3.6.1.3. Part 1: The Technical Approach Proposal

3.6.1.4. Part 2: The Management Proposal

3.6.1.5. Part 3: The Supportability Proposal

3.6.2. Bidders shall compile a detailed Table of Contents which lists not only the Section Headings but also the major sub-sections and the topic headings required set forth in these Instructions or implicit in the organisation of the Technical Proposal.

3.6.3. Bidders shall provide an overview of the salient features of their technical proposal in form of an executive summary. This summary shall demonstrate the Bidder understands the project, the implementation environment and the risks involved.

3.6.4. Bidders shall provide a detailed Cross Reference Matrix tracing the individual IFB requirements to the Bidders proposal. The Cross Reference Matrix shall cover both the project execution requirements contained in the SOW, and system and subsystem-specific functional and non-functional requirements contained in the SRS and its Annexes.

3.6.5. Part 1: The Technical Approach Proposal

3.6.5.1. The Bidder shall submit an initial version of the System/Software Design Specifications (SDS) specified in the Section 4 of the SOW. This initial version shall sufficiently demonstrate how the system as delivered shall meet all of the requirements as set forth in the SOW and SRS.

3.6.5.2. It shall include a functional network diagram of all major hardware and software types. It shall indicate the type of hardware included and the quantities thereof.

3.6.5.3. It shall demonstrate how the capability will meet the availability requirements in the SOW Annex A (System Requirements Specification – SRS).

3.6.5.4. It shall state the name and manufacturer of all proposed COTS software components. It shall explain how each proposed equipment component meets the COTS requirements within the SOW (including Annex A - SRS).

3.6.6. Part 2: The Management Proposal

3.6.6.1. The Bidder shall submit a Project Management Plan (PMP) that shall describe how the Contractor will implement the totality of the project, including details of the project control that will be applied.

3.6.6.2. The Bidder’s PMP shall cover all aspects of project implementation including management provisions, facilities, schedules, personnel assignments, external relationships and project control.

3.6.6.3. The PMP shall be sufficiently detailed to ensure that the Purchaser is able to assess the Bidders plans with insight into the Contractor’s plans, capabilities, and ability to satisfactorily implement the entire project in conformance with the requirements as specified in this SOW.

3.6.6.4. The PMP shall describe how the various project management processes (CM, RM, QM, etc.) are integrated, either via a tool set and/or internal project management practices.

3.6.6.5. The PMP shall describe how the Project Website and Collaborative Working Environment will be used to maintain communication between the Purchaser and the Contractor.

3.6.6.6. The Bidder shall include in the PMP the following sections and provide the major plans required under this Contract:

A. Project Work Break Down Structure

B. Project Master Schedule

C. Work Package Management

D. Product Breakdown Structure

E. Risk Management

F. Quality Management

G. Configuration Management Plan (presented as a separated document to be maintained post FSA)

H. Integrated Logistics Support Plan (ILSP) (presented as a separated document to be maintained post FSA)

I. Transition Plan

J. Transportation Plan

K. Test and Acceptance Plan

L. Documentation

M. Training

N. Personnel

3.6.6.7. Sub-Contractors: The Bidder shall provide a sub-section which identifies its major proposed sub-contractors for the Project. Major proposed sub-contractors, for purposes of this sub-section, refer to the criteria set forth in Clause 10 “Sub-Contracts” of the Contract General Provisions of the Prospective Contract. The Bidder shall identify the firm, the nation of origin, the estimated value of the sub-contract and the major items (assemblies, sub-assemblies) or services that the proposed sub-contractor will be required to furnish.

3.6.6.8. With regard to major sub-contracts, the Bidder shall identify those items which are sub-contracted (deliverables, with exact reference to the Schedule of Supplies and Services) which are considered to be on the “Critical Path” to meeting the delivery schedule of the Contract. The Bidder shall provide a description of possible alternative sources of supply should the selected sub-contractor fail to deliver the required items within the time schedule.

3.6.6.9. Corporate experience: The Bidder shall detail relevant and successful corporate experience in at least one (1) recent contract within the last five (5) years for which the Bidder designed and delivered similar systems, with at least one for a government or military customer. The Bidder shall provide for each reference at least: a description of the solution deployed/delivered, highlighting similarities to the bid solution; the purchaser(s) of these systems; the user(s) of

these systems; the Contract number(s); the start date and end date of the Contract; a point of contact for verification purposes.

3.6.6.10. The Bidder shall provide a description of the corporate (Bidder and identified sub-Bidders) and individual assignments, roles and capabilities demonstrating not only adequate and appropriate business and technical corporate resources, but also the necessary experiences to support the Project lifecycle and the System lifecycle.

3.6.6.11. The Bid shall provide relevant experience and expertise in developing / delivering / integrating:

3.6.6.11.1. Security Documentation;

3.6.6.11.2. Equipment to Military Operations or similar environments;

3.6.6.11.3. Training.

3.6.6.12. Bidder shall further specify where adaptation of existing solutions delivered under previous contract(s) is being used by the proposed solution in order to minimize the cost of the Bid without compromise in quality. The Bidder shall indicate whether the production line for such supplies/solutions is still open, and if not, how long it may take to start up production.

3.6.6.13. Key Personnel Proposal: the Bidder shall provide curriculum vitae for the Project Manager (SoW para. 3.3.5) proposed for this project and also the Technical Lead (SoW para. 3.3.6).

3.6.6.14. The Bidder shall submit the Configuration Management Plan.

3.6.7. Part 3: The Supportability Proposal

3.6.7.1. Integrated Logistics Support Plan

3.6.7.1.1. The Bidder shall submit the ILS Plan that shall describe the support concept of the system. This shall address various Integrated Logistic Support (ILS) elements such as: maintenance, support services, transportation, warranty, software installation, accreditation and training.

3.6.7.2. Maintenance concept

3.6.7.2.1. The Bidder shall submit the proposed NEDB-NG Maintenance Concept that defines the maintenance environment, constraints, locations, procedures, artefacts, organisation and personnel skills to maintain PBL and the OBL

3.6.7.2.2. The Maintenance Concept shall refer to the functional and non-functional Maintenance Requirements of the NEDB-NG FBL.

3.6.7.2.3. The Maintenance Concept shall define the 1st, 2nd and 3rd Level Maintenance tasks. At each of these Levels, the procedural description shall include objective(s), triggering event(s), input(s), output(s), task(s),

roles and Responsibilities, Accountabilities, Consulting, and to Inform (RACI-format), constraints, exceptional case(s), and tool(s) support.

3.6.7.2.4. The Bidder shall define the Maintenance process interfaces to the other processes in the Service Delivery Plan.

3.6.7.2.5. As an Annex of the ILS Plan, the Supply Support Plan shall define the Supply support requirements and shall describe the procedures for the provisioning, procurement, and acquiring of spare/repair parts, inventories, and consumable material for PBL and the OBL during the TMO and FMO period.

3.6.7.2.6. The Maintenance Concept shall define the PBL maintenance and supply flow amongst the various NATO locations, organisations, groups, and people.

3.6.7.3. Support concept

3.6.7.3.1. The Bidder shall submit the NEDB-NG Support Concept showing how the 2nd and 3rd Level Customer Support will be implemented and performed.

3.6.7.3.2. The Bidder shall define the 2nd and 3rd Level Support process interfaces to the other processes.

3.6.7.3.3. The Support process interface definition shall include the input and output information, its structure, the communication path (POC's), the time constraints for sending and receiving information, and quality criteria to evaluate the integrity of the interface.

3.6.7.3.4. At each Support Level, the Support Concept shall describe the support environment, constraints, locations, procedures, artefacts, organisation and personnel.

3.6.7.3.5. The procedural description shall include objective(s), triggering event(s), input(s), output(s), task(s), roles and responsibilities, constraints, exceptional case(s), and tool(s) support.

3.6.7.3.6. The Bidder shall include an estimate of the overall level of effort required to operate and maintain the systems for the first five years of operation (per year). This estimate shall differentiate between the level of effort required on the Customer side and the effort that can be outsourced.

3.6.7.4. Training

3.6.7.4.1. The Bidder shall submit an estimate of the Training needs (level of effort and cost) to operate and maintain the NEDB-NG for a period of five years (annual estimates).

3.6.7.4.2. Bidders shall provide a final version of a Training product (Computer Based Training CBT product or training manuals),, which was developed within the past three (3) years by the Bidder for another, but technically very

similar project. This Training product shall have a scope which is as much as possible similar to the scope of the Training for NEDB-NG.

SECTION 4 BID EVALUATION AND CONTRACT AWARD

4.1. General

4.1.1. The evaluation of Bids will be made by the Purchaser solely on the basis of the requirements specified in this Invitation for Bid.

4.1.2. All Bids will be evaluated solely using the formula, evaluation criteria and factors contained herein. Technical Proposals will be evaluated strictly against the technical criteria and not against other Technical Proposals submitted.

4.1.3. The evaluation of Bids and the determination as to the Best Value Score will be based only on that information furnished by the Bidder and contained in his Bid. The Purchaser shall not be responsible for locating or securing any information that is not identified in the Bid.

4.1.4. The Bidder shall furnish with his Bid all information requested by the Purchaser in Book I, Section 3, Bid Preparation Instructions. Significant omissions and/or cursory submissions will result in a reduced Best Value Score and may result in a determination of non-compliance without recourse to further clarification. The information provided by the Bidder in its proposal shall be to a level of detail necessary for the Purchaser to fully comprehend exactly what the Bidder proposes to furnish as well as his approach and methodologies.

4.1.5. During the evaluation, the Purchaser may request clarification of the Bid from the Bidder and the Bidder shall provide sufficient detailed information in connection with such requests as to permit the Purchaser to make a final assessment of the Bid based upon the facts. The purpose of such clarifications will be to resolve ambiguities in the Bid and to permit the Bidder to state his intentions regarding certain statements contained therein. The purpose of the clarification stage is not to elicit additional information from the Bidder that was not contained in the original submission or to allow the Bidder to supplement cursory answers or omitted aspects of the Bid. The Bidder is not permitted any cardinal alteration of the Bid regarding technical matters and shall not make any change to his price quotation at any time.

4.1.6. The Purchaser reserves the right, during the evaluation and selection process, to verify any statements made concerning experience, facilities, or existing designs or materials by making a physical inspection of the Bidder's facilities and capital assets. This includes the right to validate, by physical inspection, the facilities and assets of proposed Subcontractors.

4.1.7. The evaluation will be conducted in accordance with NATO Infrastructure Bidding Procedures as set forth in the document, and the Best Value

evaluation procedures set forth in AC/4-D(2008)0002-REV2, "Procedures and Practices for Conducting NSIP International Competitive Bidding Using Best Value Methodology". The Bid evaluation methodology to be followed, including the top-level evaluation criteria and their weighting factors, were agreed by the NATO Investment Committee.

4.2. Best Value Award Approach and Bid Evaluation Factors

4.2.1. The Contract resulting from this IFB will be awarded to the Bidder whose conforming offer provides the Best Value to NATO, as evaluated by the Purchaser in compliance with the requirements of this IFB and according to the evaluation method specified in this SECTION 4 .

4.2.2. The overall score for each compliant Bidder will be derived using the following formula:

Best Value Score = TA+M+S+P

where:

TA = Weighted Technical Approach Score

M = Weighted Management Score

S = Weighted Supportability Score

P = Weighted Price Score

4.2.3. The maximum possible Best Value Score is 100; the minimum possible is zero. The Bid with the highest Best Value Score will be recommended to be the Apparent Successful Bidder.

4.2.4. Evaluation Criteria.

4.2.4.1. Price: 50% weight, with the Price Score (P) derived using the following formula:

Price Score = 100 * (1-(Bid Price / (2*Average Bid Price))

4.2.4.1.1. Using this formula, a price quotation that is exactly equal to the average price of all Bids would receive a score of 25 of the 50 points available. A price quotation that is one-half of the average price of all Bids would receive a score of 37.5 of the 50 points available, and a price quotation of two times the average Bid price would receive a score of 0. Price Quotations in excess of two times the average Bid price would likewise receive a score of 0, even though the formula would generate a negative figure.

4.2.4.1.2. Bidders shall note that any Bid in excess of the stated ceiling prices set forth in paragraph 3.5.2.1 above may not be scored as the Bid may be determined to be non-compliant.

4.2.4.2. Technical 50 % weight, with the cumulative Technical Score determined by evaluating and scoring the different technical (sub-) criteria in accordance with the prescriptions of the paragraphs below.

4.2.4.2.1. Technical Approach (TA): 60% weight, based on the following sub-criteria listed in order of descending importance:

4.2.4.2.1.1 Functional Characteristics

4.2.4.2.1.1.1 Manage Emitters

4.2.4.2.1.1.2 Manage Queries

4.2.4.2.1.1.3 Support Network and Stand-Alone architectures

4.2.4.2.1.1.4 Support Operational Processes

4.2.4.2.1.2 Non-functional Characteristics

4.2.4.2.1.2.1 Easy to use

4.2.4.2.1.2.2 Security

4.2.4.2.1.2.3 System Administration

4.2.4.2.1.2.4 Performance

4.2.4.2.1.3 Interoperability

4.2.4.2.1.3.1 Interaction with other systems

4.2.4.2.1.3.2 Export and Import of Data

4.2.4.2.2. Management (M): 20% weight, based on the following sub-criteria which appear in descending order of importance:

4.2.4.2.2.1 Project Management

4.2.4.2.2.1.1 Credibility of the Project Management Approach

4.2.4.2.2.1.2 System Engineering

4.2.4.2.2.1.3 Organization

4.2.4.2.2.1.4 Risk Management

4.2.4.2.2.2 Qualifications

4.2.4.2.2.2.1 Experience

4.2.4.2.2.2.2 Personnel

4.2.4.2.3. Supportability (S): 20% weight, based on the following sub-criteria, which appear in descending order of importance:

4.2.4.2.3.1 Integrated Logistic Support

4.2.4.2.3.1.1 Credibility of the ILS Approach

4.2.4.2.3.1.2 Reliability, Availability and Maintainability (RAM)

4.2.4.2.3.1.3 Documentation

4.2.4.2.3.1.4 Warranty and Licences

4.2.4.2.3.2 Maintenance Concept

4.2.4.2.3.2.1 Maintenance Concept

4.2.4.2.3.2.2 Maintainability

4.2.4.2.3.3 Support Concept

4.2.4.2.3.3.1 Support Concept

4.2.4.2.3.3.2 Deployment

4.2.4.2.3.4 Training

4.2.4.2.3.4.1 Training Approach

4.2.4.2.3.4.2 Training Materials

4.2.5. The scores obtained on these criteria shall be aggregated through the formula specified in paragraph 4.2.2 in order to obtain the overall score of each bid.

4.2.6. A weighting scheme for sub-criteria values has been developed by Purchaser staff not associated with the Technical Evaluation. This weighting scheme has been sealed and is not known to any of the Purchaser staff beyond the originator and the Chairman of the Contracts Award Board, who are not evaluators within the framework of this IFB or in any manner or form are made privy of evaluation information throughout the course of the evaluation process. The weighting scheme remains sealed until Step 4 of the evaluation process, described in paragraph 4.7.

4.3. Evaluation Procedure

4.3.1. The evaluation will be done in a four step process, as described below:

4.3.1.1. Step 1: Administrative Compliance

4.3.1.1.1. Bids received will be reviewed for compliance with the mandatory administrative requirements specified in paragraph 4.4. Bids not meeting all of the mandatory administrative requirements may be determined to be non-compliant and not considered for further evaluation.

4.3.1.2. Step 2: Technical Evaluation

4.3.1.2.1. In Step 2 Bids will have their Technical Proposals evaluated against predetermined top-level criteria and identified sub-criteria (see paragraph 4.2.4 above), and scored accordingly. This evaluation will result in “raw” or unweighted technical scores against the criteria.

4.3.1.2.2. Bidders are advised that any Bid whose Technical Proposal receives a score of less than 20% of the unweighted raw score possible in any of the sub-criteria listed in paragraphs 4.2.4.1.1.1 to 4.2.4.2.4.3 inclusive may be determined by the Purchaser to be non-compliant and not considered for further evaluation.

4.3.1.3. Step 3: Price Evaluation

4.3.1.3.1. The Price Quotations of all Bids not considered non-compliant under the previous steps will be opened, evaluated and scored in accordance with paragraph 4.6.

4.3.1.4. Step 4: Determination of Apparent Successful Bidder

4.3.1.4.1. Upon completion of the Price Evaluation, the Apparent Successful Bid will be determined in accordance with paragraph 4.7 hereafter.

4.4. Evaluation Step 1 - Administrative Compliance

4.4.1. Bids will be reviewed for compliance with the formal requirements for Bid submission as stated in this IFB and the content of the Bid Administration Package. The evaluation of the Bid Administration Package will be made on its completeness, conformity and compliance to the requested information. This evaluation will not be scored in accordance with Best Value procedures but is made to determine if a Bid complies with the requirements of the Bidding Instructions and Prospective Contract. Specifically, the following requirements shall be verified:

4.4.1.1. The Bid was received by the Bid Closing Date and Time,

4.4.1.2. The Bid is packaged and marked properly,

4.4.1.3. The Bid Administration Package contains the documentation listed in paragraph 3.4 above and complies with the formal requirements established in paragraph 3.1 above.

4.4.1.4. The Bidder has not taken exception to the Terms and Conditions of the Prospective Contract or has not qualified or otherwise conditioned his offer on

a modification or alteration of the Terms and Conditions or the language of the Statement of Work.

4.4.2. A Bid that fails to conform to the above requirements may be declared non-compliant and may not be evaluated further by the Purchaser.

4.4.3. Bids that are determined to be administratively compliant will proceed to Step 2, Technical Evaluation.

4.4.4. Notwithstanding paragraph 4.4.3, if it is later discovered in the evaluation of the Bid Administration Package, Technical Proposal or the Price Quotation that the Bidder has taken exception to the Terms and Conditions of the Prospective Contract, or has qualified and/or otherwise conditioned his offer on a modification or alteration of the Terms and Conditions or the language of the Statement of Work, the Bidder may be determined to have submitted a non-compliant Bid at the point in time of discovery.

4.5. Evaluation Step 2 - Technical Evaluation

4.5.1. The Technical Proposal will be evaluated against the criteria and sub-criteria set forth in paragraph 4.2 above. For some sub-criteria, there may be additional supporting factors at the next lower level. These lower level factors are not published in this IFB but are predetermined and included in the Technical Evaluation Weighting Scheme sealed before Bid Opening. The following paragraphs identify the aspects to be examined in the Technical Proposal evaluation and rating.

4.5.2. Technical Approach

4.5.2.1. The Bid provides a draft System Design Specification (SDS). This draft SDS shall be in accordance with the requirements as described in paragraph 4.1.3 and section 4.5 of the SOW. The SDS is a critical part of the Bid evaluation. The Bidder's SDS submission shall serve as the Bidders demonstration of his understanding of the NEDB-NG requirements and will facilitate the evaluation of the maturity of the proposed technical solution. The SDS, excluding annexes should not exceed 100 pages. System drawings can be included in annexes and do not count against the submitted page count.

4.5.2.2. The Bidder's draft SDS shall include technical details (including representative configuration samples) on how the functional requirements in the SRS will be implemented, including but not limited to:

4.5.2.2.1. How the NEDB-NG system will manage emitter information such that the requirements set forth in the SRS are covered at a high standard level.

4.5.2.2.2. How the NEDB-NG system will support search and filtering of information, to complex queries formulation and combination of search results. The query functionalities shall cover at minimum common management functionalities such as create, read, update and delete actions.

4.5.2.2.3. How the NEDB-NG system will work in a network environment and as stand-alone instances and how the data synchronisation will be performed to best support operational processes.

4.5.2.3. The Bidder's draft SDS shall include technical details (including representative configuration samples) on how non-functional requirements in the SRS will be implemented. This should cover aspects related to human factors and ergonomics, security approach, system management and key performance indicators of the system.

4.5.2.4. The Bidder's draft SDS shall describe how the interoperability requirements stated in the SRS, such as import and export of data and interoperability with other systems, will be implemented.

4.5.3. Management

4.5.3.1. The Bid provides an Executive Summary between 5 and 10 pages in length that demonstrates:

4.5.3.1.1. A clear description of the major points contained in each of the required sections of the technical proposal, the depth of the Bidder's understanding of the project, the implementation environment and the problems and risks of project implementation.

4.5.3.1.2. The strengths which the Bidder and its team bring to the project in terms of minimising the problems and reducing the risks as perceived and specified by the bidder. The key points of the technical approach and solution that the Bidder believes deserves recognition under a Best Value evaluation scheme.

4.5.3.2. The Bid provides a detailed Cross Reference Matrix tracing the individual IFB requirements in the SOW and SRS to the Bidders proposal. The Cross Reference Matrix covers both the project execution requirements contained in the SOW, and system and subsystem-specific functional and non-functional requirements contained in the SRS and its Annexes.

4.5.3.3. The Bid provides a draft Project Management Plan (PMP) that covers the requirements set forth in the SOW.

4.5.3.4. The Bid provides the resumes of the individuals designated as Key Personnel to this project as identified in SOW. For each role identified (at least one person per role and a maximum of one role per person), the resumes meet or exceed the experience, knowledge and educational criteria stated in the SOW and demonstrate that they have the expected knowledge, capability and experience to meet the requirements of this Contract.

4.5.3.5. The Bid provides a draft project Risk Management Plan (RMP), which is a separate chapter of the Project Management Plan (PMP), in accordance with the requirements as described in the SOW. The draft RMP shall describe an effective and mature risk management approach, including the Bidder's process for risk identification, assessment, mitigation, monitoring, and reporting. The Risk management approach shall encompass all aspects

relevant for the execution of the NEDB-NG, including Management, Engineering and Support. The RMP shall demonstrate an approach likely to cause minimal or no disruption of schedule, increase in cost, or degradation of performance, and will require a low level of Bidder emphasis or Purchaser monitoring to overcome difficulties. The draft RMP is an important element of the Bid Evaluation. Together with the initial NEDB-NG Risk Log it shall demonstrate that the Bidder's project approach is likely to cause minimal or no disruption of schedule, increase in cost, or degradation of performance and that the Bidder has identified, assessed, and provided sufficient mitigation measures, including contingencies, for the most significant foreseeable risks.

4.5.3.6. The Bid provides an initial NEDB-NG Risk Log as an Annex to the draft Risk Management Plan (RMP), The NEDB-NG Risk Log shall identify and detail the top 10 project risks in accordance with the requirements as described in the SOW. For each of the 10 project risks identified the Bidder shall provide the rationale explaining why the issue has been identified as a risk and explain the relative ranking of the risk. Bidders will be evaluated on the justification and ranking of the respective risks by identifying how these risks were identified and mitigated through the relevant Bidders experience in the last five years as described in the Corporate Experience part of the Bid.

4.5.4. Supportability

4.5.4.1. The Bid provides a separate, standalone draft Integrated Logistic Support Plan (ILSP), in accordance with the requirements as described in the SOW.

4.5.4.2. The Bid provides a separate, standalone draft Configuration Management Plan (CMP), in accordance with the requirements as described in the SoW.

4.5.4.3. The bid provide the maintenance concept and the support concept and clearly identify in-service costs and resources required to maintain and support the NEDB-NG system.

4.5.4.4. The Bid includes a draft Training Plan (TP) in accordance with the requirements as described in the SOW.

4.5.5. All documents provided as part of the technical proposal will be evaluated to see if all the requirements are met and what is the maturity level of the proposal. The documents will also be evaluated on how concise and clear they are written. Non-relevant information, non-functional duplicated information or any information directly copied from the IFB will negatively influence the scoring.

4.6. Evaluation Step 3 - Price Evaluation

4.6.1. The Bidder's Price Quotation will be first assessed for compliance against the following standards:

4.6.1.1. The bid price complies with the requirement relevant to the Bid Ceiling Prices set forth in Annex A-1

4.6.1.2. In particular the Bidders shall note that the total cumulative amount for CLINs 1 to 7, 9 and 10 SHALL not exceed EUR 3,427,022 (Three million four hundred and twenty seven thousand twenty-two Euro) and for CLIN 8 SHALL not exceed EUR 1,979,452 (one million nine hundred and seventy nine thousand four hundred and fifty two Euro).

4.6.1.3. The Price Quotation meets the requirements for preparation and submission of the Price Quotation set forth in the Bid Preparation Section and the Instructions for Preparation of the Bidding Sheets in Annex A-1.

4.6.1.4. Detailed pricing information has been provided and is current, adequate, accurate, traceable, and complete.

4.6.1.5. The Price Quotation meets requirements for price realism and balance as described below in paragraph 4.6.4.

4.6.2. A Bid which fails to meet the compliance standards defined in this section may be declared non-compliant and may not be evaluated further by the Purchaser.

4.6.3. Basis of Price Comparison

4.6.3.1. The Purchaser will convert all prices quoted into EURO for purposes of comparison and computation of price scores. The exchange rate to be utilised by the Purchaser will be the average of the official buying and selling rates of the European Central Bank at close of business on the last working day preceding the Bid Closing Date.

4.6.3.2. The **Evaluated Bid Price** to be inserted into the formula specified at paragraph 4.2.4.1 will be derived from the Grand Total of **CLINs 1 to 10, including Evaluated Options CLINs 8 to10.**

4.6.4. Price Balance and Realism

4.6.4.1. In those cases in which the prices quoted in relation with this Invitation for Bid appear to be unreasonably low in relation to the performance required under the prospective Contract and/or the level of effort associated with the tasks, the Purchaser will reserve the right to request the Bidder clarifications aimed to demonstrate the rationale for such circumstances.

4.6.4.2. Indicators of an unrealistically low Bid may be the following, amongst others:

4.6.4.2.1. Labour Costs that, when amortised over the expected or proposed direct labour hours, indicate average labour rates far below those prevailing in the Bidder's locality for the types of labour proposed.

4.6.4.2.2. Direct Material costs that are considered to be too low for the amounts and types of material proposed, based on prevailing market prices for such material.

4.6.4.2.3. Numerous Line Item prices for supplies and services that are provided at no cost or at nominal prices.

4.6.4.3. In the event that the successful Bidder has submitted a price quotation that is less than two-thirds of the average of the remaining compliant bids, the Purchaser will ensure that the successful Bidder has not artificially reduced the offered prices to assure Contract award. As such the Purchaser will request the Bidder to provide clarification of the bid and will inform the national delegation of the Bidder. In this regard the Bidder shall provide an explanation to both the Purchaser and their National delegation on the basis of one of the following reasons:

4.6.4.3.1. An error was made in the preparation of the price quotation. In such a case, the Bidder must document the nature of the error and show background documentation regarding the preparation of the price quotation that convincingly demonstrates that an error was made by the Bidder. In such a case, the Bidder may request to remain in the competition and accept the Contract at the offered price, or to withdraw from the competition.

4.6.4.3.2. The Bidder has a competitive advantage due to prior experience or internal business/technological processes that demonstrably reduce costs to the Bidder resulting in an offered price that is realistic. The Bidder's explanation must support the technical proposal offered and convincingly and objectively describe the competitive advantage and the savings achieved by this advantage over the standard market costs, practices and technology.

4.6.4.3.3. The Bidder understands that the submitted price quotation is unrealistically low in comparison with the level of effort required. In such a case, the Bidder is required to estimate the potential loss and show that the financial resources of the Bidder are adequate to withstand such reduction in revenue.

4.6.4.4. If a Bidder fails to submit a comprehensive and convincing explanation for one of the bases above, the Purchaser shall declare the Bid submitted as non-compliant and the Bidder will be so notified in accordance with the procedures set forth in paragraph 13(iii)(b) of AC/4-D/2261 (1996 Edition). Non-compliance for reasons of bid realism is a basis for lodging a complaint under the dispute procedure.

4.6.4.5. If the Purchaser accepts the Bidder's explanation of a mistake and allows the Bidder to accept the Contract at the offered price, or the explanation regarding competitive advantage is convincing, the Bidder shall agree as a condition of Contract signature, that the supporting pricing data submitted with his bid will be the basis for determining fair and reasonable pricing for all subsequent negotiations for modifications of or additions to the Contract and that no revisions of proposed prices will be made.

4.6.4.6. The Agency reserves the right to request prime Contractors, or the Subcontractor to separately identify each of the direct/indirect costs, advise why each is required, and provide supporting documentation to substantiate each charge, such as: 1) catalogue price lists and any applicable discounts, 2) copies of the Subcontractor's orders from others for the same or similar items, including explanations for cost variations, 3) Subcontractor's internal cost

estimate, or documentation of whatever means the Subcontractor used to arrive at the charge.

4.6.5. Once the offered prices as described in paragraph 4.6.3.2 have been calculated and checked, the formula set forth in paragraph 4.2.4.1 above will be applied to derive the Price Score of each Bid.

4.7. Evaluation Step 4 – Calculation of Best Value Scores

4.7.1. Upon conclusion and approval of the Price Evaluation results, the pre-determined weighting scheme for the Technical Evaluation will be unsealed and the scores for the Engineering, Management, Supportability, and Risk factors will be calculated for each compliant Bid. Then all partial scores will be fed into the formula stated in paragraph 4.2.2 in order to obtain the Best Value Score of each Bid.

4.7.2. The highest scored Bid will be recommended as the Apparent Successful Bid.

4.7.3. Should the calculation of the Best Value Scores result in a Statistical Tie between two or more Bids, the bid with the highest weighted technical score – will be selected as the apparent successful bid. For the purpose of this paragraph the term Statistical Tie shall be construed to indicate the situation where the total weighted score of the highest scoring Bid, that is, the weighted score of price and technical combined, is within 1.0% of the total weighted score of one or more Bidder.

Annex A Bidding Sheets

Annex A-1. Instructions for the Preparation of the Bidding Sheets

1. INTRODUCTION

Bid pricing requirements as addressed in this Annex are mandatory. Failure to abide to the prescriptions of Bid submission referred in this section may lead to the Bid being declared non-compliant and not being taken into consideration for award.

No alteration of the Bidding sheets including but not limited to quantity indications, descriptions or titles are allowed with the sole exception of those explicitly indicated as allowed in this document. Additional price columns may be added if multiple currencies are Bid, including extra provisions for all totals.

2. GENERAL REQUIREMENTS

Bidders are required, in preparing their Price Quotation to utilise the Bidding Sheets following the instructions detailed in Section III – Bid Preparation Instructions, Paragraph 3.3 – Price Quotation (Part II) and hereunder.

The prices and quantities entered on the document shall reflect the total items required to meet the Contractual requirements. The total price shall be indicated in the appropriate columns and in the currency quoted.

In preparing the Bidding Sheets, Bidders shall ensure that the prices of the Sub-items total the price of the major item of which they constitute a part.

All metrics (e.g., cost associated with labour) will be assumed to be standard or normalised to 7.6 hour/day, for a five day working week at NATO and National sites and Contractor facilities and 8 hours/day at NATO sites and Contractor facilities located in the United States.

Should the Best Value Bid be in other than Euro currency, the award of the Contract will be made in the currency or currencies of the Bid.

Bidders are advised that formulae are designed to ease evaluation of the Bidders proposal have been inserted in the electronic copies of the Bidding Sheets. Notwithstanding this the Bidder remains responsible for ensuring that their figures are correctly calculated and should not rely on the accuracy of the formulae electronic copies of the Bidding Sheets..

If the Bidder identifies an error in the spreadsheet, it should notify the Purchaser who will make a correction and notify all the Bidders of the update.

Prices shall not include any provision for taxes or duties for which the Purchaser is exempt.

3. INSTRUCTIONS FOR COMPLETION OF BIDDING SHEETS

A. COMPLETING SECTION 1 (CLIN Summary Sheet)

Section 1 corresponds to the Schedule of Supplies and Services of the Prospective Contract. Each Work Package (WP) included in the contract is represented by a detailed schedule showing the Contract Line Items (CLINs) included within the scope of the Work Package (Detailed bidding sheet tabs) and a detailed cost breakdown attached to each WP schedule.

A.1 Filling the CLIN Summary Sheet

Bidders shall fill in the CLIN summary sheet based on the information provided in the detailed bidding sheets (CLIN Price Breakdown Bidding sheets). The detailed bidding sheets are broken down in to the categories listed in Section 5. Bidders are expected to aggregate the prices in the detailed bidding sheets that make up the line items in the CLIN summary sheet. The line items in the CLIN Summary Sheet shall be all INCLUSIVE of the price being bid in order to fulfil the requirement for the line item in the CLIN Summary Sheet. Bidders shall make sure that the total price indicated in the Detailed Bidding Sheets matches the price stated in the CLIN summary sheet for the same corresponding CLIN or sub-CLIN. The Offer Summary is linked to the CLIN Summary Sheet to provide a high level summary.

B. COMPLETING SECTION 2 (CLIN Price Breakdown Bidding Sheets)

Bidders are instructed to prepare their cost proposals in sufficient detail to permit thorough and complete evaluation. For each of the CLINs the Bidder shall use the separate Sheets as provided, adding additional sheets if multiple currencies are used. Change the currency in the header (drop down) of the Sheets if necessary.

B.1. MATERIAL

A. Purchased Parts: Provide a consolidated priced summary of individual material quantities included in the various tasks, orders, or contract line items being proposed and the basis for pricing.

(1) Raw Material: Consists of material in a form or state that requires further processing. Provide priced quantities of items required for the proposal. Show total cost.

(2) Standard Commercial Items: Consists of items that the Bidder normally fabricates, in whole or in part, and that are generally stocked in inventory. Provide an appropriate explanation of the basis for pricing on attached schedule.

(3) The bidder shall provide a level of detail down to the unique sellable item level (e.g. A server, a laptop, a printer)

(4) The bidder shall provide unit prices that shall be EXCLUSIVE of any applicable overhead, general and administrative costs, profit, costs associated to travel, per-diem and/or incidentals as well as Personnel Installation costs at the sites of performance. Factors for overhead shall be applied in the MATERIAL LABOUR OVERHEAD section of the detailed bidding sheet to the total cost of material.

B.2 DIRECT LABOUR

Show the hourly rate by year and the total hours for the categories and disciplines of direct labour proposed.
Unit prices shall be EXCLUSIVE of any applicable overhead, general and administrative costs, profit, costs associated to travel, per-diem and/or incidentals as well as Personnel Installation costs at the sites of performance. Factors for overhead shall be applied in the DIRECT LABOUR OVERHEAD section of the detailed bidding sheet to the total cost of direct labour.

B.3 SUBCONTRACT LABOUR

Show the hourly rate by year and the total hours for the categories and disciplines of subcontract labour proposed
Unit prices shall be EXCLUSIVE of any applicable overhead, general and administrative costs, profit, costs associated to travel, per-diem and/or incidentals as well as Personnel Installation costs at the sites of performance. Factors for overhead shall be applied in the SUBCONTRACT LABOUR OVERHEAD section of the detailed bidding sheet to the total cost of subcontract labour.

B.4 TRAVEL

Show the number of trips being made, the number of people travelling, the number of days per trip, the cost of traveling (e.g. flight costs), and the daily per diem rate.
Insert comments/descriptions/references/explanation of calculation method under the 'Notes' column including the location & reference to SOW.

B.5 OTHER DIRECT COSTS

A. Special Tooling/Equipment. Identify and support specific equipment and unit prices. Use a separate schedule if necessary.

B. Individual Consultant Services. Identify and support the proposed contemplated consulting. State the amount of services estimated to be required and the consultant's quoted daily or hourly rate.

C. Other Costs. List all other direct charge costs not otherwise included in the categories described above (e.g., services of specialized trades, computer services,

preservation, packaging and packing, leasing of equipment, ex-pat costs etc.) and provide bases for pricing.

4. GRAND TOTAL

This is the Bidders final Firm Fixed Price total for the identified CLIN or sub-CLIN and should match the price entered in the corresponding CLIN Summary sheet in Section 1 of the bidding sheets.

5. SPECIAL INSTRUCTIONS

CLINs 1-7 (Total Base Contract) and CLINs 8-10 (Evaluated options) shall be priced at the lowest sub-CLIN level and rolled up to the next highest sub-CLIN or CLIN level.

Annex A-2. *Bidding Sheets – Excel Format*

The Bidding Sheets are contained in the electronic file "2- IFB-CO-14091-EWFS - Bidding Sheets.xls" submitted as part of this IFB.

Annex B Prescribed Administrative Forms and Certificates

Annex B-1. Certificate of Legal Name of Bidder

This Bid is prepared and submitted on behalf of the legal corporate entity specified below:

FULL NAME OF CORPORATION: _____

DIVISION (IF APPLICABLE): _____

SUB DIVISION (IF APPLICABLE): _____

OFFICIAL MAILING ADDRESS

_____

_____

_____

E-MAIL ADDRESS: _____

POINT OF CONTACT REGARDING THIS BID:

NAME: _____
POSITION: _____
TELEPHONE: _____

ALTERNATIVE POINT OF CONTACT:

NAME: _____
POSITION: _____
TELEPHONE: _____

_____ _____
Date Signature of Authorised Representative

_____
Printed Name

_____
Title

_____
Company

Annex B-2. Acknowledgement of Receipt of IFB Amendments

I confirm that the following amendments to Invitation for Bid CO-14091-EWFS have been received and the Bid, as submitted, reflects the content of such amendments.

Amendment no.	Date of Issued	Date of receipt	Initials

_____ _____

Date Signature of Authorised Representative

_____

Printed Name

_____

Title

_____

Company

Annex B-3. Certificate of Independent Determination

It is hereby stated that:

a. We have read and understand all documentation issued as part of IFB-CO-14091-EWFS. Our Bid submitted in response to the referred solicitation is fully compliant with the provisions of the IFB and the prospective Contract.

b. Our Bid has been arrived at independently, without consultation, communication or agreement, for the purpose of restricting competition, with any other Bidder or with any competitor;

b. The contents of our Bid have not been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder prior to award, directly or indirectly to any other Bidder or to any competitor; and

c. No attempt has been made, or will be made by the Bidder to induce any other person or firm to submit, or not to submit, a Bid for the purpose of restricting competition.

_____ _____

Date Signature of Authorised Representative

_____

Printed Name

_____

Title

_____

Company

Annex B-4. Certificate of Bid Validity

I, the undersigned, as an authorised representative of the firm submitting this Bid, do hereby certify that the pricing and all other aspects of our Bid will remain valid for a period of twelve (12) months from the Bid Closing Date of this Invitation for Bid.

_____ _____

Date Signature of Authorised Representative

_____

Printed Name

_____

Title

_____

Company

Annex B-5. Certificate of Exclusion of Taxes, Duties and Charges

I hereby certify that the prices offered in the price quotation of this Bid exclude all taxes, duties and customs charges from which the Purchaser has been exempted by international agreement.

_____ _____

Date Signature of Authorised Representative

_____

Printed Name

_____

Title

_____

Company

Annex B-6. Comprehension and Acceptance of Contract Special and General Provisions

The Bidder hereby certifies that he has reviewed the Contract Special Provisions and the NCI Agency Contract General Provisions set forth in the Prospective Contract, Book II of this Invitation for Bid. The Bidder hereby provides his confirmation that he fully comprehends the rights, obligations and responsibilities of the Contractor as set forth in the Articles and Clauses of the Prospective Contract. The Bidder additionally certifies that the offer submitted by the Bidder is without prejudice, qualification or exception to any of the Terms and Conditions and he will accept and abide by the stated Contract Special Provisions and Contract General Provisions if awarded the Contract as a result of this Invitation for Bid.

_____ _____

Date Signature of Authorised Representative

_____

Printed Name

_____

Title

_____

Company

ANNEX B-7. Disclosure of Requirements for NCI Agency Execution of Supplemental Agreements

I, the undersigned, as an authorised representative of _____, certify the following statement:

All supplemental agreements, defined as agreements, documents and/or permissions outside the body of the Contract but are expected to be required by my Government, and the governments of my Subcontractors, to be executed by the NCI Agency or its legal successor as a condition of my firm's performance of the Contract, have been identified, as part of the Bid.

These supplemental agreements are listed as follows:

(insert list of supplemental agreements or specify "none")

Examples of the terms and conditions of these agreements have been provided in our Offer. The anticipated restrictions to be imposed on NATO, if any, have been identified in our offer along with any potential conflicts with the terms, conditions and specifications of the Prospective Contract. These anticipated restrictions and potential conflicts are based on our knowledge of and prior experience with such agreements and their implementing regulations. We do not certify that the language or the terms of these agreements will be exactly as we have anticipated.

The processing time for these agreements has been calculated into our delivery and performance plans and contingency plans made in the case that there is delay in processing on the part of the issuing government(s).

We recognise that additional supplemental agreements, documents and permissions presented as a condition of Contract performance or MOU signature after our firm would be selected as the successful Bidder may be cause for the NCI Agency to determine the submitted Bid to be non-compliant with the requirements of the IFB;

We accept that should the resultant supplemental agreements issued in final form by the government(s) result in an impossibility to perform the Contract in accordance with its schedule, terms or specifications, the Contract may be terminated by the Purchaser at no cost to either Party.

_____ _____

Date Signature of Authorised Representative

_____

Printed Name

_____

Title

_____

Company

Annex B-8. Certificate of Compliance AQAP 2110 or ISO 9001:2008 or Equivalent

I hereby certify that _____(name of Company) possesses and applies Quality Assurance Procedures/Plans AQAP 2110 or ISO 9001:2008 or equivalent as evidenced through the attached documentation[1].

_____ _____

Date Signature of Authorised Representative

_____

Printed Name

_____

Title

_____

Company

[1] Bidders must attach copies of any relevant quality certification.

Annex B-9. List of Prospective Subcontractors

Name and Address of Sub-Bidder	DUNS Number [2]	Primary Location of Work	Items/Services to be Provided	Estimated Value of Sub-Contract

Date

Signature of Authorised Representative

Printed Name

Title

Company

[2] Data Universal Numbering System (DUNS). Bidders are requested to provide this data in order to help NCI AGENCY to correctly identify Subcontractors. If a Subcontractor's DUNS is not known this field may be left blank.

Annex B-10. Bidder Background IPR

I, the undersigned, as an authorised representative of Bidder _____, warrant, represent, and undertake that:

a. The Contractor Background IPR specified in the table below will be used for the purpose of carrying out work pursuant to the prospective Contract.

ITEM	DESCRIPTION

b. The stated Bidder has and will continue to have, for the duration of the prospective Contract, all necessary rights in and to the Background IPR specified above.

c. The Background IPR stated above complies with the terms specified in Article 8 of the Contract Special Provisions.

_____ _____

Date Signature of Authorised Representative

_____

Printed Name

_____

Title

_____

Company

Annex B-11. List of Subcontractor IPR

I, the undersigned, as an authorised representative of Bidder _____, warrant, represent, and undertake that:

a. The Subcontractor IPR specified in the table below will be used for the purpose of carrying out work pursuant to the prospective Contract.

ITEM	DESCRIPTION

b. The stated Bidder has and will continue to have, for the duration of the prospective Contract, all necessary rights in and to the IPR specified above necessary to perform the Contractor's obligations under the Contract.

c. The Subcontractor IPR stated above complies with the terms Clause 30 the Contract General Provisions.

_____ _____

Date Signature of Authorised Representative

_____

Printed Name

_____

Title

_____

Company

Annex B-12. Certificate of Origin of Equipment, Services, and Intellectual Property

The Bidder hereby certifies that, if awarded the Contract pursuant to this solicitation, he will perform the Contract subject to the following conditions:

(a) none of the work, including project design, labour and services shall be performed other than by firms from and within participating NATO member countries;

(b) no material or items of equipment down to and including identifiable sub-assemblies shall be manufactured or assembled by a firm other than from and within a participating NATO member country. (A sub-assembly is defined as a portion of an assembly consisting of two or more parts that can be provisioned and replaced as an entity); and

(c) The intellectual property rights to all design documentation and related system operating software shall reside in NATO member countries, and no license fees or royalty charges shall be paid by the Bidder to firms, individuals or Governments other than within the NATO member countries.

_____ _____

Date Signature of Authorised Representative

_____

Printed Name

_____

Title

_____

Company

Annex B-13. List of Proposed Key Personnel

Position	Reference SOW	Labour Category	Name	Designation Period
Project Manager	3.3.5			
Technical Lead	3.3.6			

_____ _____

Date Signature of Authorised Representative

_____

Printed Name

_____

Title

_____

Company

Annex B-14. Certificate of Price Ceiling

I hereby certify that the total price offered in the price quotation of this Bid for CLINs 1 to 7, 9 and 10 of the Bidding Sheets does not exceed EUR 3,427,022 (Three million four hundred and twenty seven thousand twenty-two Euro) and for CLIN 8 does not exceed EUR 1,979,452, (one million nine hundred and seventy nine thousand four hundred and fifty two Euro) as described in paragraph 3.5.2 of Book I.

Note: Price information of your Bid shall not be disclosed in the Bid Administration Package, or the Technical Proposal Package.

_____ _____

Date Signature of Authorised Representative

_____

Printed Name

_____

Title

_____

Company

Annex C Bid Guarantee - Standby Letter of Credit

Standby Letter of Credit Number:

Issue Date: _____

Beneficiary: NATO CI Agency,
Financial Management Resource Centre,
Boulevard Leopold III,
B-1110 Brussels,
Belgium

Expiry Date: _____

1. We, (issuing bank) hereby establish in your favour our irrevocable standby letter of credit number {number} by order and for the account of (NAME AND ADDRESS OF BIDDER) in the original amount of € 135,000.00 (One Hundred and Thirty-Five Thousand Euro). We are advised this Guarantee fulfils a requirement under Invitation for Bid IFB-CO-14091-EWFS dated _____.

2. Funds under this standby letter of credit are available to you upon first demand and without question or delay against presentation of a certificate from the NATO CI Agency Contracting Officer that:

a) (NAME OF BIDDER) has submitted a Bid and, after Bid Closing Date (including extensions thereto) and prior to the selection of the lowest priced, technically compliant Bid, has withdrawn his Bid, or stated that he does not consider his Bid valid or agree to be bound by his Bid, or

b) (NAME OF BIDDER) has submitted a Bid determined by the Agency to be the lowest priced, technically compliant Bid, but (NAME OF BIDDER) has declined to execute the Contract offered by the Agency, such Contract being consistent with the terms of the Invitation for Bid, or

c) The NATO CI Agency has offered (NAME OF BIDDER) the Contract for execution but (NAME OF BIDDER) has been unable to demonstrate compliance with the security requirements of the Contract within a reasonable time, or

d) The NATO CI Agency has entered into the Contract with (NAME OF BIDDER) but (NAME OF BIDDER) has been unable or unwilling to provide the Performance Guarantee required under the terms of the Contract within the time frame required.

3. This Letter of Credit is effective the date hereof and shall expire at our office located at (Bank Address) on _____. All demands for payment must be made prior to the expiry date.

4. It is a condition of this letter of credit that the expiry date will be automatically extended without amendment for a period of sixty (60) calendar days from the current or any successive expiry date unless at least thirty (30) calendar days prior to the then current expiry date the NATO CI Agency Contracting Officer notifies us that the Letter of Credit is not required to be extended or is required to be extended for a shorter duration.

5. We may terminate this letter of credit at any time upon sixty (60) calendar days notice furnished to both (NAME OF BIDDER) and the NATO CI Agency by registered mail.

6. In the event we (the issuing bank) notify you that we elect not to extend the expiry date in accordance with paragraph 4 above, or, at any time, to terminate the letter of credit, funds under this credit will be available to you without question or delay against presentation of a certificate signed by the NATO CI Agency Contracting Officer which states

"The NATO CI Agency has been notified by {issuing bank} of its election not to automatically extend the expiry date of letter of credit number {number} dated {date} pursuant to the automatic renewal clause (or to terminate the letter of credit). As of the date of this certificate, no suitable replacement letter of credit, or equivalent financial guarantee has been received by the NATO CI Agency from, or on behalf of (NAME OF BIDDER), and the NATO CI Agency, as beneficiary, hereby draws on the standby letter of credit number _____ in the amount of € (Amount up to the maximum available under the LOC), such funds to be transferred to the account of the Beneficiary number _____ (to be identified when certificate is presented)."

Such certificate shall be accompanied by the original of this letter of credit and a copy of the letter from the issuing bank that it elects not to automatically extend the standby letter of credit, or terminating the letter of credit.

7. The Beneficiary may not present the certificate described in paragraph 6 above until 20 (twenty) calendar days prior to a) the date of expiration of the letter of credit should {issuing bank} elect not to automatically extend the expiration date of the letter of credit, b) the date of termination of the letter of credit if {issuing bank} notifies the Beneficiary that the letter of credit is to be terminated in accordance with paragraph 6 above.

8. Multiple drawings are allowed.

9. Drafts drawn hereunder must be marked, "Drawn under {issuing bank} Letter of Credit No. {number}" and indicate the date hereof.

10. This letter of credit sets forth in full the terms of our undertaking, and this undertaking shall not in any way be modified, amended, or amplified by reference to any document, instrument, or agreement referred to herein (except the International Standby Practices (ISP 98) hereinafter defined) or in which this letter of credit is referred to or to which this letter of credit relates, and any such reference shall not be deemed to incorporate herein by reference any document, instrument, or agreement.

11. We hereby engage with you that drafts drawn under and in compliance with the terms of this letter of credit will be duly honoured upon presentation of documents to us on or before the expiration date of this letter of credit.

12. This Letter of Credit is subject to The International Standby Practices-ISP98 (1998 Publication) International Chamber of Commerce Publication No.590.

Annex D Cross Reference Matrix Table

Serial Number	SOW Requirement Reference	Description	Specific Proposal Reference	Remarks
Serial Number	**SRS Requirement Reference**	**Description**	**Specific Proposal Reference**	**Remarks**

Annex E Clarification Request Form

INSERT COMPANY NAME HERE
INSERT SUBMISSION DATE HERE

INVITATION FOR BID
IFB-CO-14091-EWFS

CLARIFICATION REQUEST FORM

INSERT COMPANY NAME HERE
INSERT SUBMISSION DATE HERE

ADMINISTRATION or CONTRACTING				
Serial No.	**IFB REF**	**BIDDER'S QUESTION**	**NCI AGENCY ANSWER**	**STATUS**
A.1				
A.2				
A.3				
A.4				
A.5				

INSERT COMPANY NAME HERE
INSERT SUBMISSION DATE HERE

PRICE Serial No.	IFB REF	BIDDER'S QUESTION	NCI AGENCY ANSWER	STATUS
P.1				
P.2				
P.3				
P.4				
P.5				

INSERT COMPANY NAME HERE
INSERT SUBMISSION DATE HERE

TECHNICAL				
Serial No.	**IFB REF**	**BIDDER'S QUESTION**	**NCI AGENCY ANSWER**	**STATUS**
T.1				
T.2				
T.3				
T.4				
T.5				

CLIN Bidding Sheets Instructions

INTRODUCTION
All bidders are required to submit pricing details to demonstrate the Purchaser's Pricing Principles are being applied as part of their bids (in the absence of a pre-approved National Format). All data completed in these sheets shall be complete, verifiable and factual and include the required details. Any exclusions may render your bid as non compliant thus removing yourself from the bidding process.

FORM INPUTS

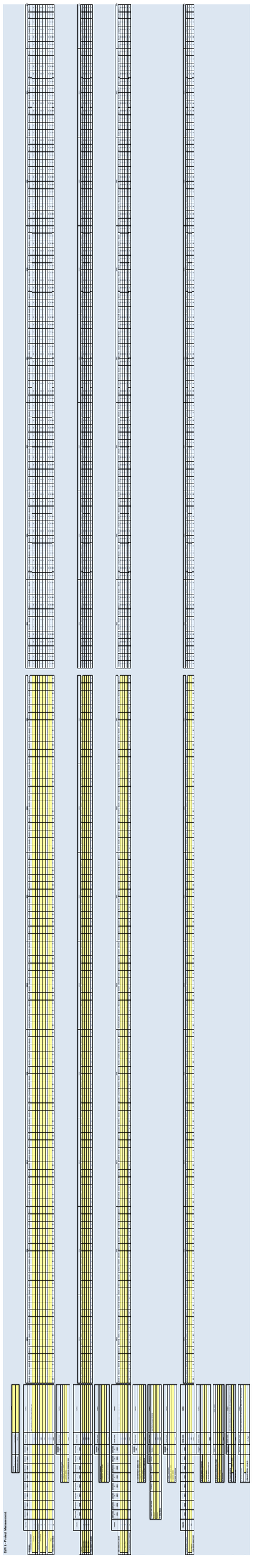
PRICING SUMMARY ASSUMPTIONS	
Currency:	*Select currency of input values from drop down list.*
Calendar Year:	*Select Year 1 of the spread profile from the drop down list.*
Quantity	*Enter quantities of proposed item(s) in the time profiling inputs to the right.*
Unit Cost	*Enter the unit cost of the proposed item(s) for each year.*
Total Estimated Cost	*This is a calculated value (Quantity x Unit Price) and should not be altered.*

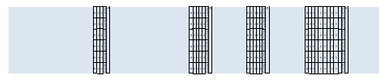
CATEGORY	DESCRIPTION	APPLICATION
DIRECT MATERIAL	*A. Purchased Equipment - Items purchased as part of the proposed solution. Please provide vendor quotes and/or invoices along with quantity and prices.* *B. Subcontracted Item - Items procured through sub contracts as part of the proposed solution. Please provide subcontractor quotes and/or invoices along with quantity and prices.* *C. Other Equipment/Materials - Items procured as part of the proposed solution. Please provide vendor quotes and/or invoices along with quantity and prices.*	*1. Insert the Equipment Item Name(s).* *2. Provide a time phased (monthly) breakdown of quantities.* *3. Provide unit prices against each equipment item for each year.* *4. Insert comments/descriptions/references/explanation of calculation method under the 'Notes' column*
DIRECT LABOUR	*Direct labour is all effort directly expended by the bidder for the proposed solution*	*1. Insert the direct labour title(s).* *2. Provide a time phased (monthly) breakdown of labour hours.* *3. Provide hourly rates against each labour title for each year.* *4. Insert comments/descriptions/references/explanation of calculation method under the 'Notes' column.*
SUBCONTRACT LABOUR	*Indirect labour is all effort expended by the sub-contractor for the proposed solution.*	*1. Insert the subcontract labour title(s).* *2. Provide a time phased (monthly) breakdown of labour hours.* *3. Provide hourly rates against each labour title for each year.* *4. Insert comments/descriptions/references/explanation of calculation method under the 'Notes' column*
TRAVEL	*Includes all travel associated with the procurement and delivery of the proposed solution.*	*1. Insert the Trip Name(s).* *2. Provide number of trips being made.* *3. Provide number of people travelling.* *4. Provide number of days per trip.* *5. Provide cost of round trip flight.* *6. Provide daily per diem rate.* *7. Insert comments/descriptions/references/explanation of calculation method under the 'Notes' column including the location & reference to SOW.*
OTHER DIRECT COSTS	*Additional direct costs directly expended by the bidder for the proposed solution that do not fit in any of the above categories.*	*1. Insert the Other Direct Cost title(s).* *2. Provide a time phased (monthly) breakdown of unit quantities.* *3. Provide unit costs against each title.* *4. Insert comments/descriptions/references/explanation of calculation method under the 'Notes' column.*
GENERAL & ADMINISTRATIVE FEE	*Additional business application fee applied to any number of the above categories.*	*1. Insert the G&A title(s).* *2. Provide the rate that is being applied.* *3. Insert the total G&A cost for each business application.* *4. Insert items that G&A factor is being applied to under the 'Reference' column.*
TOTAL FEE / PROFIT %	*Provide all FEE/PROFIT percentage applied to costs in accordance with your approved national accounting standards.*	*Provide calculation used in application of FEE/PROFIT into the price.*
OTHER FACTORS	*Provide any OTHER FACTOR percentage applied to costs in accordance with your approved national accounting standards. Insert comments/descriptions/references/explanation of calculation method under the 'Notes' column.*	*Provide calculation used in application of FACTORS into the price.*
GRAND TOTAL	*The total shall feed into the SSS.*	*Total Price including direct cost, indirect cost, rates and factors as applied above. Please do not forget to amend the title to reflect the appropriate CLIN number.*

CLIN	DESCRIPTION	SOW REFERENCE	QTY	Currency	Unit PRICE Euro (EUR)	TOTAL PRICE Euro (EUR)	DELIVERY DATE	Delivery Site	WP REFERENCE	FORM
	Grand Total Firm Fixed Price (CLINs 1-10) Base plus Evaluated Options									
	Grand Total Firm Fixed Price (CLINs 1-10) Base Contract									
1	**Project Management**									
1.1	Project Meetings, Resources and Reports									See Below
1.1.1	Project Meetings and minutes	3.17.7.1, 3.17.7.4, 3.17.1	As required				EDC + 2w	NCIA, Brussels	1.6.1	N/A
1.1.2	Project Highlight Reports (PHR)	3.17.5	As required				Monthly	NCIA, Website	1.5.4	Paper, Electronic
1.2	Project Engineering, Monitor and Control									See Below
1.2.1	Project Website and Collaborative Working Environment	3.16	1				At PMR and as changes occur	Website	1.2.2	Online
1.2.2	Project Management Plan (PMP)	3.4	1				At PMR and as changes occur	NCIA, Website	1.3.1	Paper, Electronic
1.2.3	Configuration Management Database	3.10	1				At PMR and as changes occur	NCIA, Website	1.5.3	Paper, Electronic
1.2.4	System Development Plan (SDP)	4.3	1				At PMR and as changes occur	NCIA, Website	1.4.1	Paper, Electronic
1.2.5	Quality Management Plan (QAP)	3.9.5	1				At PMR and as changes occur	NCIA, Website		Paper, Electronic
1.2.6	Integrated Logistic Support Plan (ILSP)	6.2.1	1				At PMR and as changes occur	NCIA, Website		Paper, Electronic
1.2.7	Configuration Management Plan	3.1	1				At PMR and as changes occur	NCIA, Website		Paper, Electronic
1.3	Reviews									
1.3.1	Project Checkpoint Reviews (PCR)	3.17.4	As required				Monthly	NCIA, The Hague	1.6.2	N/A
1.3.2	Project Management Review (PMR)	3.17.3	1				EDC + 4w	At Contractor's location	1.7.1	N/A
	Total CLIN 1									
2	**Requirements Analyses and System Design**									
2.1	Requirements Analyses									
2.1.1	Software Requirements Specification (SWRS)	4.4.4	1				At PSRR and as changes occur	NCIA, Website	2.2.4	Paper, Electronic
2.1.2	Requirements Traceability Matrix	4.5.6	1				At PSRR and as changes occur	NCIA, Website	2.2.3	Paper, Electronic
2.1.3	User Interface Specification (UIS)	4.4.4	1				At PSRR and as changes occur	NCIA, Website	2.2.5	Paper, Electronic
2.1.4	System Specific Security Requirements Statement (SSRS)	4.4.3	1				SRR + 2w and as changes occur	NCIA, Website	2.2.7	Paper, Electronic
2.1.5	System Interconnection Security Requirements Statement (SISRS)	4.4.3	1				SRR + 2w and as changes occur	NCIA, Website	2.2.8	Paper, Electronic
2.2	System Design									
2.2.1	System Architecture Description (SAD)	4.5.3	1				At SRR and as changes occur	NCIA, Website	2.3.1	Paper, Electronic
2.2.2	System Security Design Specification (SSDS)	4.5.5	1				SRR + 2w and as changes occur	NCIA, Website	2.2.6	Paper, Electronic
2.2.3	Interface Control Document (ICD)	4.5.7	1				SRR + 2w and as changes occur	NCIA, Website	2.3.3	Paper, Electronic
2.3	Reviews									
2.3.1	Preliminary System Requirements Review (PSRR)	4.4.4	1				PSRR: EDC + 6w	NCIA The Hague	2.4.1	N/A
2.3.2	System Requirements Review (SRR)	4.4.4	1				SRR: EDC + 8w	NCIA The Hague	2.4.2	N/A
2.3.3	Preliminary Design Review (PDR)	4.5.2	1				EDC + 11w	NCIA The Hague	2.4.3	N/A
2.3.4	Joint Technical Reviews (User Requirements)	3.17.7.3	2				EDC + 5w, EDC + 10w	NCIA The Hague	2.4.3	N/A
	Total CLIN 2									
3	**System Development**									
3.1	Sytem Implementation									
3.1.1	Software Design Specification (SDS)	4.5.4	1				At CDR and as changes occur	NCIA, Website	2.3.2	Paper, Electronic
3.1.2	Population of internal Database	4.8.1	1				At CDR and as changes occur	NCIA, The Hague	3.2.3	Electronic
3.2	System Testing									
3.2.1	System Integration Test (SIT) procedures	4.7.16.4	1				At CDR and as changes occur	NCIA, Website	3.4.2	Paper, Electronic
3.2.2	System Integration Test (SIT) Report	4.7.16	1				At TRR	NCIA, Website	3.3.4	Paper, Electronic
3.2.3	User Acceptance Test (UAT) procedures	4.7.16.5	1				At CDR and as changes occur	NCIA, Website	4.2.2	Paper, Electronic
3.2.4	System Support and Maintenance Acceptance Test (SSMAT) procedures	4.7.16.6	1				At CDR and as changes occur	NCIA, Website	3.4	Paper, Electronic
3.2.5	System Support and Maintenance acceptance Test (SSMAT) Report	4.7.16.6	1				At TRR	NCIA, Website	3.3.4	Paper, Electronic
3.2.6	Factory Acceptance Test (FAT) procedures	4.7.16.1	1				At CDR and as changes occur	NCIA, Website	3.3.5	Paper, Electronic
3.3	Integration Testbed Implimentation and Testing									
3.3.1	Test Plan	4.7.16.1.6	1				At CDR and as changes occur	NCIA, Website	3.3	Paper, Electronic
3.3.2	Security Test and Evaluation (T&E) Plan	4.7.16.2	1				At CDR and as changes occur	NCIA, Website	3.3	Paper, Electronic
3.3.3	Test Report Form	4.7.16.1.6	10				At CDR and as changes occur	NCIA, Website	3.3	Paper, Electronic
3.3.4	Security Implementation Verification Procedures (SIVP)	4.7.16.2	1				At CDR and as changes occur	NCIA,Website	3.3	Paper, Electronic
3.3.5	System Implementation Plan (SIP)	4.8.2	1				At CDR and as changes occur	NCIA, Website	5.3.1	Paper, Electronic
3.3.6	NEDB-NG software (baseline version to be tested)	5.2	1				At TRR	NCIA, The Hague	4.2.3	Electronic
3.3.7	Factory Acceptance Test (FAT)Report	4.2	2				TRR + 2w	NCIA, Website	3.3.5	Paper, Electronic
3.4	Reviews									
3.4.1	Critical Design Review (CDR)	4.5.2	1				EDC + 6m	NCIA, The Hague	3.5.1	N/A
3.4.2	Test Readiness Review (TRR)	4.7.16.1.6	1				EDC + 12m	NCIA, The Hague	3.5.2	N/A
3.4.3	Joint Technical Reviews (Sprints)	4.2.2.3	4				EDC + 5m, EDC + 7m, EDC + 9, EDC + 11m	NCIA, The Hague	3.5.4	N/A
	Total CLIN 3									
4	**System Integration and Acceptance**									
4.1	System Integration		1				Start: EDC + 8m			See below
4.1.1	Security Operating Procedures (SecOps)	4.7.16.2.7	1				At Start and as changes occur	NCIA, Website	4.2.1	Paper, Electronic
4.1.2	Security Test and Evaluation Plan (ST&V)	4.7.16.2	1				At Start and as changes occur	NCIA, Website	4.2.1	Paper, Electronic
4.1.3	Security Risk Assesment Report	4.4.3	1				At Start and as changes occur	NCIA, Website	4.2.1	Paper, Electronic
4.1.4	System Security Design Specification (SSDS)	4.5.5	1				At Start and as changes occur	NCIA, Website	4.2.1	Paper, Electronic

4.1.5	Communication and Information System (CIS) description	4.8	1				At Start and as changes occur	NCIA, Website	4.2	Paper, Electronic
4.2	Acceptance Test and Reviews									See below
4.2.1	PWG User Acceptance Test	4.7.16.5	1				EDC + 14m	NCIA The Hague	4.2.2	N/A
4.2.2	PWG User Acceptance Test Report	4.7	2				NLT 2w after PWG UAT	NCIA, Website	4.2.2	Paper, Electronic
4.2.3	Deployment Readiness Review (DRR)	4.8	1				EDC + 15m	NCIA The Hague	4	N/A
	Total CLIN 4									
5	**Site Survey and Site Activation**									
5.1	Site Survey		3				EDC + 8m and NLT 12m			
5.1.1	System Implementation Plan (SIP)	4.8.2	1				EDC + 8m and as changes occur until DRR	NCIA, Website	5.3.1	Paper/Electronic
5.1.2	Site Survey Questionaire	4.8.4	5				EDC + 8m and as changes occur until DRR	NCIA, Website	5.3.3	Paper/Electronic
5.1.3	Site Survey Integrated Testbed	3.1.7	1				EDC + 8m	NCIA The Hague	3.2.4	N/A
5.1.4	Site Survey Report Integrated Testbed	4.8.4	1				NLT 1 week after Site Survey	NCIA, Website	5.3.4	Paper/Electronic
5.1.5	Site Survey NATO Data Centre	4.8	1				During WP4 and NLT DRR	Brussels or Mons	5.2	N/A
5.1.6	Site Survey Report NATO Data Centre	4.8.4	1				NLT 1 week after Site Survey	NCIA, Website	5.3.4	Paper/Electronic
5.1.7	Site Survey JEWCS	4.8	1				During WP4 and NLT DRR	JEWCS, Yeovilton, UK	5.2	N/A
5.1.8	Site Survey Report JEWCS	4.8.4	1				NLT 1 week after Site Survey	NCIA, Website	5.3.4	Paper/Electronic
5.1.9	Site Survey NCIA Mons	4.8	1				During WP4 and NLT DRR	NCIA Mons	5.2	N/A
5.1.10	Site Survey Report NCIA Mons	4.8.4	1				NLT 1 week after Site Survey	NCIA, Website	5.3.4	Paper/Electronic
5.2	Preparation, Installation and Activation									
5.2.1	Site Activation Test Report Integrated Testbed	4.8	1				EDC + 9m	NCIA, Website	5.4	Paper/Electronic
5.2.2	Site Activation Test Report NATO Data Centre	4.8	1				EDC + 15m	NCIA, Website	5.4	Paper/Electronic
5.2.3	Site Activation Test Report JEWCS	4.8	1				EDC + 16m	NCIA, Website	5.4	Paper/Electronic
5.2.4	Site Activation Test Report NCIA Mons	4.8	1				EDC + 23m	NCIA, Website	5.4	Paper/Electronic
5.2.5	Data Migration Test Report	4.8	1				EDC + 17m	NCIA, Website	5.5	Paper/Electronic
5.2.6	Data Migration Log File	4.8	1				EDC + 17m	NCIA, Website	5.5	Paper/Electronic
5.2.7	PWG Data Migration Review	4.8.6	1				EDC + 18m	NCIA The Hague	5.4.5	N/A
5.3	System Acceptance and Documentation									
5.3.1	Sofware Distribution List	4.8	1				EDC + 24m	NCIA, Website	5.1	Paper/Electronic
5.3.2	Material Data Sheet (MDS)	6.8	1				EDC + 24m	NCIA, Website	5.1	Paper/Electronic
5.3.3	As Built Documentation	4.8	1				EDC + 24m	NCIA, Website	5.1	Paper/Electronic
5.3.4	Final System Acceptance	4.8.8	1				EDC + 24m	NEDB-NG Sites	5.4.6	N/A
	Total CLIN 5									
6	**Training Support**									
6.1	Training Course Development	6					EDC + 8m until TMR		6.2	N/A
6.1.1	Training Plan	6.5	1				EDC + 9m and as changes occur	NCIA, Website	6.2.1	Paper, Electronic
6.1.2	Training Programme	6	1				EDC + 9m and as changes occur	NCIA, Website	6.2.2	Paper, Electronic
6.2	Training Delivery									
6.2.1	Training Environment and Equipment	6.5.3.4	2				EDC + 15m	NCIA The Hague, JEWCS	6.3	NEDB-NG system
6.2.2	Training NEDB-NG Administrators	6.5.3.4	See below				Start at EDC + 15m	NCIA The Hague, JEWCS	6.3.2	Course
6.2.3	Training NEDB-NG Users	6.5.3.4	See below				Start at EDC + 15m	NCIA The Hague, JEWCS	6.3.3	Course
6.2.4	Training NEDB-NG Trainers	6.5.3.4	See below				Start at EDC + 15m	NCIA The Hague, JEWCS	6.3.4	Course
6.2.5	Training Database	6.5.3.4	2				EDC + 15m	NCIA The Hague, JEWCS	6.3	Electronic
6.3	Training Material									
6.3.1	NEDB-NG Administrators Training	6.5.3.5	5				EDC + 15m	NCIA The Hague, JEWCS	6.3	Paper, Electronic
6.3.2	NEDB-NG User (DBM, DBA, DBP, DBR) Training	6.5.3.5	60				EDC + 15m	NCIA The Hague, JEWCS	6.3	Paper, Electronic
6.3.3	NEDB-NG Trainers Training	6.5.3.5	5				EDC + 15m	NCIA The Hague, JEWCS	6.3	Paper, Electronic
	Total CLIN 6									
7	**System Support**									
7.1	NEDB-NG Support Documentation									
7.1.1	Maintenance Concept	6.3	1				EDC + 8m and as changes occur	NCIA, Website	7	Paper, Electronic
7.1.2	Support Concept	6.4	1				EDC + 8m and as changes occur	NCIA, Website	7.2	Paper, Electronic
7.1.3	Transition Plan	6.7	1				EDC + 12m and as changes occur	NCIA, Website	7.3	Paper, Electronic
7.1.4	Operational Documentation	6.10.1	as required				TRR			
7.1.5	Maintenance documentation	6.10.2	as required				TRR			
7.2	Organisation of Support									
7.2.1	Support to initial Testing & Evaluation	4.7	2				EDC + 12m, 5 man weeks	NCIA The Hague	7.3	N/A
7.2.2	Support to Testing & Evaluation	4.7	2				EDC + 24m, 2 man weeks	Brussels or Mons	7.3	N/A
7.2.3	System Operational Test (SOT) Report	4.7	2				EDC + 12m + 2w and EDC + 24m + 2w	NCIA, Website	7.4	Paper, Electronic
7.3	Operational Support									
7.3.1	Support to Administrators (Staff day)	6.9	10				EDC + 24m until end of warranty	NCIA Mons	7.4	N/A
7.3.2	Support to Users (Staff day)	6.9	20				EDC + 24m until end of warranty	JEWCS Yeovilton	7.4	N/A
7.4	One Year Warranty	6.9	1				Starts at FSA	All deployment locations	8	N/A
	Total CLIN 7									
8	**Third Level Software Support (Evaluated Option)**									
8.1	NEDB-NG System updates	6.7	5				5 Years Extended Waranty		8.1	See below
8.1.1	NEDB-NG software patches and upgrades	6.7	1				Once per year	NCIA The Hague	8.2	Electronic
8.1.2	Technology Refresh Support	6.7	As required				As required	NCIA The Hague	8.3	Electronic

8.1.3	NEDB-NG documentation baseline updates	6.8	1				One time per year	NCIA The Hague	8.4	Paper, Electronic
8.1.4	Updates to manuals and training materials	6.5	1				As required	JEWCS	8.4	Paper, Electronic
8.1.5	Support to the approval of the updated version	6.7	As required				As required	NCIA The Hague	8.4	N/A
	Total CLIN 8									
9	**Hardware (Evaluated Option)**									
9.1	Equipment									
9.1.1	Servers	4.7.4	3				As required	As required		HW
9.1.2	Transportation	4.8.1.1.11	3				As required	As required		N/A
	Total CLIN 9									
10	**Software development and technical support (Evaluated Option)**									
10.1	Contractor Support									
10.1.1	Project Manager	As required	20 man/day				As required	At Contractor's location		Man/days
10.1.2	System Engineer	As required	20 man/day				As required	At Contractor's location		Man/days
10.1.3	Software Developer	As required	60 man/day				As required	At Contractor's location		Man/days
10.1.4	Test Engineer	As required	20 man/day				As required	At Contractor's location		Man/days
10.1.5	Documentation	As required	20 man/day				As required	At Contractor's location		Man/days
10.1.6	Project Support	As required	20 man/day				As required	At Contractor's location		Man/days
	Total CLIN 10									


CMS 1 - Postal Reinstatement



CLIN 2 - Requirements Analyses and System Design

		NOTES
Currency (please select from drop down)	Euro (EUR)	
Calendar Year (Year 1):	2015	

	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
1. MATERIALS											
A. PURCHASED EQUIPMENT											Please provide the sub-CLIN associated with each cost
Purchased	0									0.00	
Purchased	0									0.00	
B. SUBCONTRACTED EQUIPMENT/MATERIALS											
Subcontracted	0									0.00	
Subcontracted	0									0.00	
C. OTHER											
Other	0									0.00	
Other	0									0.00	
1. TOTAL DIRECT MATERIAL	0									0.00	

2015												2016												2017												2018												2019												2020												2021												2022											
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84
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2015												2016												2017												2018												2019												2020												2021												202					
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78
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	OH RATE (%)	TOTAL COST	NOTES
2. MATERIAL OVERHEAD (OH)			
A. OH Rate (%) X TOTAL Material			
B. [Expand as needed]			
2. Total MATERIAL OVERHEAD (OH)		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
3. LABOUR											Please provide the sub-CLIN associated with each cost
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
3. TOTAL DIRECT LABOUR	0									0.00	

2015												2016												2017												2018												2019												2020												2021												2022											
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84
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2015												2016												2017												2018												2019												2020												2021												202					
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78
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	OH RATE (%)	TOTAL COST	NOTES
4. LABOUR OVERHEAD			
A. OH Rate (%) X TOTAL LABOUR			
B. [Expand as needed]			
4. Total LABOUR OVERHEAD		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
5. SUBCONTRACT LABOUR											
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
5. TOTAL SUBCONTRACT LABOUR	0									0.00	

2015												2016												2017												2018												2019												2020												2021												2022											
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

2015												2016												2017												2018												2019												2020												2021												202					
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	OH RATE (%)	TOTAL COST	NOTES
6. SUBCONTRACT LABOUR OH			
A. OH Rate (%) X TOTAL SUBCONTRACT LABOUR			
B. [Expand as needed]			
6. Total SUBCONTRACT LABOUR O/H		0.00	

				Unit Cost	Unit Cost	TOTAL COST	NOTES
7. TRAVEL UNIT TRIP COST	Number of	Number of	Number of	Cost per	Per Diem		Please Describe the reason for the trip
Trip Name A						0.00	
Trip Name B						0.00	
7. TOTAL TRAVEL						0.00	

	OH RATE (%)	TOTAL COST	NOTES
8.TRAVEL OVERHEAD			
A. OH Rate (%) X TOTAL TRAVEL			
B. [Expand as needed]			
8.TRAVEL OVERHEAD		0.00	

	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
9. OTHER DIRECT COSTS											
	0.00									0.00	
	0.00									0.00	
9. TOTAL OTHER DIRECT COST										0.00	

2015												2016												2017												2018												2019												2020												2021												2022											
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

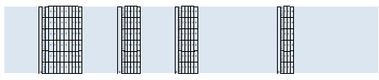
2015												2016												2017												2018												2019												2020												2021												202					
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	OH RATE (%)	TOTAL COST	NOTES
10. OTHER DIRECT COSTS O/H			
A. OH Rate (%) X TOTAL ODCs			
B. [Expand as needed]			
10. OTHER DIRECT COST O/H		0.00	

	RATE %		TOTAL COST
11. General & Administrative (G&A)			
A. G&A (Insert Business Application)			
B. [Expand as needed]			
11. Total G&A		0.00	

		RATE (%)	TOTAL COST	NOTES
12. Total Fee/Profit %				Please provide a description of to which elements fee is being applied. Ensure a correct and
	A. [Expand as needed]			
12. Total Fee Cost			0.00	

		RATE (%)	TOTAL COST	NOTES
13. OTHER FACTORS				Please provide a description of to which elements "Other factors" rate is being applied.
	A. [Expand as needed]			
GRAND TOTAL CLIN 2			0.00	



CLIN 3 - System Development

		NOTES
Currency (please select from drop down)	Euro (EUR)	
Calendar Year (Year 1):	2015	

	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
1. MATERIALS											
A. PURCHASED EQUIPMENT											Please provide the sub CLIN associated with each cost
Purchased	0									0.00	
Purchased	0									0.00	
B. SUBCONTRACTED EQUIPMENT/MATERIALS											
Subcontracted	0									0.00	
Subcontracted	0									0.00	
C. OTHER											
Other	0									0.00	
Other	0									0.00	
1. TOTAL DIRECT MATERIAL	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
2. MATERIAL OVERHEAD (OH)			
A. OH Rate (%) X TOTAL Material			
B. [Expand as needed]			
2. Total MATERIAL OVERHEAD (OH)		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
3. LABOUR											Please provide the sub CLIN associated with each cost
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
3. TOTAL DIRECT LABOUR	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
4. LABOUR OVERHEAD			
A. OH Rate (%) X TOTAL LABOUR			
B. [Expand as needed]			
4. Total LABOUR OVERHEAD		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
5. SUBCONTRACT LABOUR											Please provide the sub CLIN associated with each cost
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
5. TOTAL SUBCONTRACT LABOUR	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
6. SUBCONTRACT LABOUR OH			
A. OH Rate (%) X TOTAL SUBCONTRACT LABOUR			
B. [Expand as needed]			
6. Total SUBCONTRACT LABOUR O/H		0.00	

7. TRAVEL UNIT TRIP COST	Number of	Number of	Number of	Unit Cost Cost per	Unit Cost Per Diem	TOTAL COST	NOTES
							Please Describe the reason for the trip
Trip Name A						0.00	
Trip Name B						0.00	
7. TOTAL TRAVEL						0.00	

	OH RATE (%)	TOTAL COST	NOTES
8.TRAVEL OVERHEAD			
A. OH Rate (%) X TOTAL TRAVEL			
B. [Expand as needed]			
8.TRAVEL OVERHEAD		0.00	

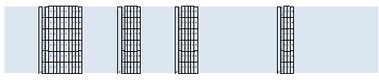
	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
9. OTHER DIRECT COSTS											
	0.00									0.00	
	0.00									0.00	
9. TOTAL OTHER DIRECT COST										0.00	

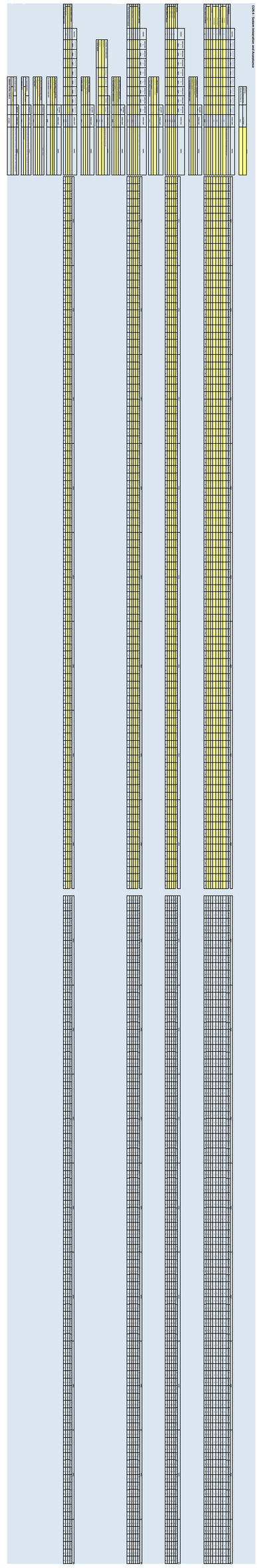
	OH RATE (%)	TOTAL COST	NOTES
10. OTHER DIRECT COSTS O/H			
A. OH Rate (%) X TOTAL ODCs			
B. [Expand as needed]			
10. OTHER DIRECT COST O/H		0.00	

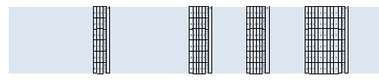
	RATE %		TOTAL COST
11. General & Administrative (G&A)			
A. G&A (Insert Business Application)			
B. [Expand as needed]			
11. Total G&A		0.00	

		FEE/PROFIT (%)	TOTAL COST	NOTES
12. Total Fee/Profit %				Please provide a description of to which elements fee is being applied. Ensure a correct and
	A. [Expand as needed]			
12. Total Fee Cost			0.00	

		RATE (%)	TOTAL COST	NOTES
13. OTHER FACTORS				Please provide a description of to which elements "Other factors" rate is being applied.
	A. [Expand as needed]			
GRAND TOTAL CLIN 3			0.00	




CDR 3 Token Interaction and Abundance



CLIN 5 - Site Survey and Site Activation

		NOTES
Currency (please select from drop down	Euro (EUR)	
Calendar Year (Year 1):	2015	

	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
1. MATERIALS											
A. PURCHASED EQUIPMENT											Please provide the sub CLIN associated with each cost
Purchased	0									0.00	
Purchased	0									0.00	
B. SUBCONTRACTED EQUIPMENT/MATERIALS											
Subcontracted	0									0.00	
Subcontracted	0									0.00	
C. OTHER											
Other	0									0.00	
Other	0									0.00	
1. TOTAL DIRECT MATERIAL	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
2. MATERIAL OVERHEAD (OH)			
A. OH Rate (%) X TOTAL Material			
B. [Expand as needed]			
2. Total MATERIAL OVERHEAD (OH)		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
3. LABOUR											Please provide the sub CLIN associated with each cost
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
3. TOTAL DIRECT LABOUR	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
4. LABOUR OVERHEAD			
A. OH Rate (%) X TOTAL LABOUR			
B. [Expand as needed]			
4. Total LABOUR OVERHEAD		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
5. SUBCONTRACT LABOUR											Please provide the sub CLIN associated with each cost
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
5. TOTAL SUBCONTRACT LABOUR	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
6. SUBCONTRACT LABOUR O/H			
A. OH Rate (%) X TOTAL SUBCONTRACT LABOUR			
B. [Expand as needed]			
6. Total SUBCONTRACT LABOUR O/H		0.00	

7. TRAVEL UNIT TRIP COST	Number of	Number of	Number of	Unit Cost Cost per	Unit Cost Per Diem	TOTAL COST	NOTES
							Please Describe the reason for the trip
Trip Name A						0.00	
Trip Name B						0.00	
7. TOTAL TRAVEL						0.00	

	OH RATE (%)	TOTAL COST	NOTES
8.TRAVEL OVERHEAD			
A. OH Rate (%) X TOTAL TRAVEL			
B. [Expand as needed]			
8.TRAVEL OVERHEAD		0.00	

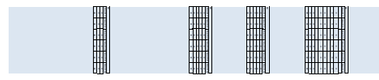
	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
9. OTHER DIRECT COSTS											
	0.00									0.00	
	0.00									0.00	
9. TOTAL OTHER DIRECT COST										0.00	

	OH RATE (%)	TOTAL COST	NOTES
10. OTHER DIRECT COSTS O/H			
A. OH Rate (%) X TOTAL ODCs			
B. [Expand as needed]			
10. OTHER DIRECT COST O/H		0.00	

	RATE %		TOTAL COST
11. General & Administrative (G&A)			
A. G&A (Insert Business Application)			
B. [Expand as needed]			
11. Total G&A		0.00	

		RATE (%)	TOTAL COST	NOTES
12. Total Fee/Profit %				Please provide a description of to which elements fee is being applied. Ensure a correct and
	A. [Expand as needed]			
12. Total Fee Cost			0.00	

		RATE (%)	TOTAL COST	NOTES
13. OTHER FACTORS				Please provide a description of to which elements "Other factors" rate is being applied.
	A. [Expand as needed]			
GRAND TOTAL CLIN 5			0.00	



CLIN 6 - Training Support

		NOTES
Currency (please select from drop down	Euro (EUR)	
Calendar Year (Year 1):	2015	

	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
1. MATERIALS											
A. PURCHASED EQUIPMENT											Please provide the sub CLIN associated with each cost
Purchased	0									0.00	
Purchased	0									0.00	
B. SUBCONTRACTED EQUIPMENT/MATERIALS											
Subcontracted	0									0.00	
Subcontracted	0									0.00	
C. OTHER											
Other	0									0.00	
Other	0									0.00	
1. TOTAL DIRECT MATERIAL	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
2. MATERIAL OVERHEAD (OH)			
A. OH Rate (%) X TOTAL Material			
B. [Expand as needed]			
2. Total MATERIAL OVERHEAD (OH)		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
3. LABOUR											Please provide the sub CLIN associated with each cost
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
3. TOTAL DIRECT LABOUR	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
4. LABOUR OVERHEAD			
A. OH Rate (%) X TOTAL LABOUR			
B. [Expand as needed]			
4. Total LABOUR OVERHEAD		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
5. SUBCONTRACT LABOUR											Please provide the sub CLIN associated with each cost
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
5. TOTAL SUBCONTRACT LABOUR	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
6. SUBCONTRACT LABOUR O/H			
A. OH Rate (%) X TOTAL SUBCONTRACT LABOUR			
B. [Expand as needed]			
6. Total SUBCONTRACT LABOUR O/H		0.00	

				Unit Cost	Unit Cost	TOTAL COST	NOTES
7. TRAVEL UNIT TRIP COST	Number of	Number of	Number of	Cost per	Per Diem		Please Describe the reason for the trip
Trip Name A						0.00	
Trip Name B						0.00	
7. TOTAL TRAVEL						0.00	

	OH RATE (%)	TOTAL COST	NOTES
8.TRAVEL OVERHEAD			
A. OH Rate (%) X TOTAL TRAVEL			
B. [Expand as needed]			
8.TRAVEL OVERHEAD		0.00	

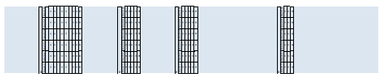
	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
9. OTHER DIRECT COSTS											
	0.00									0.00	
	0.00									0.00	
9. TOTAL OTHER DIRECT COST										0.00	

	OH RATE (%)	TOTAL COST	NOTES
10. OTHER DIRECT COSTS O/H			
A. OH Rate (%) X TOTAL ODCs			
B. [Expand as needed]			
10. OTHER DIRECT COST O/H		0.00	

	RATE %		TOTAL COST
11. General & Administrative (G&A)			
A. G&A (Insert Business Application)			
B. [Expand as needed]			
11. Total G&A		0.00	

		RATE (%)	TOTAL COST	NOTES
12. Total Fee/Profit %				Please provide a description of to which elements fee is being applied. Ensure a correct and
	A. [Expand as needed]			
12. Total Fee Cost			0.00	

		RATE (%)	TOTAL COST	NOTES
13. OTHER FACTORS				Please provide a description of to which elements "Other factors" rate is being applied.
	A. [Expand as needed]			
GRAND TOTAL CLIN 6			0.00	



CLIN 7 - System Support

		NOTES
Currency (please select from drop down	Euro (EUR)	
Calendar Year (Year 1):	2015	

	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
1. MATERIALS											
A. PURCHASED EQUIPMENT											Please provide the sub-CLIN associated with each cost
Purchased	0									0.00	
Purchased	-									-	
B. SUBCONTRACTED EQUIPMENT/MATERIALS											
Subcontracted	0									0.00	
Subcontracted	0									0.00	
C. OTHER											
Other	-									-	
Other	0									0.00	
1. TOTAL DIRECT MATERIAL	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
2. MATERIAL OVERHEAD (OH)			
A. OH Rate (%) X TOTAL Material			
B. (Expand as needed)			
2. Total MATERIAL OVERHEAD (OH)		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
3. LABOUR											Please provide the sub-CLIN associated with each cost
Labour Category Name	-									-	
Labour Category Name	-									-	
Labour Category Name	0									0.00	
Labour Category Name	-									-	
3. TOTAL DIRECT LABOUR	-									-	

	OH RATE (%)	TOTAL COST	NOTES
4. LABOUR OVERHEAD			
A. OH Rate (%) X TOTAL LABOUR			
B. (Expand as needed)			
4. Total LABOUR OVERHEAD		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
5. SUBCONTRACT LABOUR											Please provide the sub-CLIN associated with each cost
Labour Category Name	-									-	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
5. TOTAL SUBCONTRACT LABOUR	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
6. SUBCONTRACT LABOUR O/H			
A. OH Rate (%) X TOTAL SUBCONTRACT LABOUR			
B. (Expand as needed)			
6. Total SUBCONTRACT LABOUR O/H		0.00	

7. TRAVEL UNIT TRIP COST	Number of	Number of	Number of	Unit Cost Cost per	Unit Cost Per Diem	TOTAL COST	NOTES
							Please Describe the reason for the trip
Trip Name A						0.00	
Trip Name B						0.00	
7. TOTAL TRAVEL						0.00	

	OH RATE (%)	TOTAL COST	NOTES
8.TRAVEL OVERHEAD			
A. OH Rate (%) X TOTAL TRAVEL			
B. (Expand as needed)			
8.TRAVEL OVERHEAD		0.00	

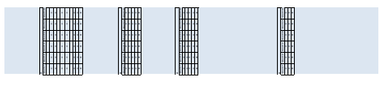
	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
9. OTHER DIRECT COSTS											
Other Direct Cost	0.00									0.00	
Other Direct Cost	0.00									0.00	
9. TOTAL OTHER DIRECT COST										0.00	

	OH RATE (%)	TOTAL COST	NOTES
10. OTHER DIRECT COSTS O/H			
A. OH Rate (%) X TOTAL ODCs			
B. (Expand as needed)			
10. OTHER DIRECT COST O/H		0.00	

	RATE (%)	TOTAL COST	NOTES
11. General & Administrative (G&A)			
A. G&A (Insert Business Application)			
B. (Expand as needed)			
11. Total G&A		0.00	

		RATE (%)	TOTAL COST	NOTES
12. Total Fee/Profit %				Please provide a description of to which elements fee is being applied. Ensure a correct and
	A. (Expand as needed)			
12. Total Fee Cost			0.00	

		RATE (%)	TOTAL COST	NOTES
13. OTHER FACTORS				Please provide a description of to which elements "Other factors" rate is being applied.
	A. (Expand as needed)			
GRAND TOTAL CLIN 7			0.00	



CLIN 8 - Third Level Software Support (Evaluated Option)

		NOTES
Currency (please select from drop down)	Euro (EUR)	
Calendar Year (Year 1):	2015	

	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
1. MATERIALS											
A. PURCHASED EQUIPMENT											Please provide the sub-CLIN associated with each cost
Purchased	0									0.00	
Purchased	0									0.00	
B. SUBCONTRACTED EQUIPMENT/MATERIALS											
Subcontracted	0									0.00	
Subcontracted	0									0.00	
C. OTHER											
Other	0									0.00	
Other	0									0.00	
1. TOTAL DIRECT MATERIAL	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
2. MATERIAL OVERHEAD (OH)			
A. OH Rate (%) X TOTAL Material			
B. [Expand as needed]			
2. Total MATERIAL OVERHEAD (OH)		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
3. LABOUR											Please provide the sub-CLIN associated with each cost
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
3. TOTAL DIRECT LABOUR	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
4. LABOUR OVERHEAD			
A. OH Rate (%) X TOTAL LABOUR			
B. [Expand as needed]			
4. Total LABOUR OVERHEAD		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
5. SUBCONTRACT LABOUR											Please provide the sub-CLIN associated with each cost
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
5. TOTAL SUBCONTRACT LABOUR	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
6. SUBCONTRACT LABOUR O/H			
A. OH Rate (%) X TOTAL SUBCONTRACT LABOUR			
B. [Expand as needed]			
6. Total SUBCONTRACT LABOUR O/H		0.00	

7. TRAVEL UNIT TRIP COST	Number of	Number of	Number of	Unit Cost Cost per	Unit Cost Per Diem	TOTAL COST	NOTES
							Please Describe the reason for the trip
Trip Name A						0.00	
Trip Name B						0.00	
7. TOTAL TRAVEL						0.00	

	OH RATE (%)	TOTAL COST	NOTES
8.TRAVEL OVERHEAD			
A. OH Rate (%) X TOTAL TRAVEL			
B. [Expand as needed]			
8.TRAVEL OVERHEAD		0.00	

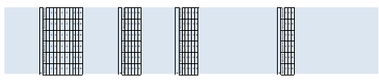
	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
9. OTHER DIRECT COSTS											
Other Direct Cost	0.00									0.00	
Other Direct Cost	0.00									0.00	
9. TOTAL OTHER DIRECT COST										0.00	

	OH RATE (%)	TOTAL COST	NOTES
10. OTHER DIRECT COSTS O/H			
A. OH Rate (%) X TOTAL ODCs			
B. [Expand as needed]			
10. OTHER DIRECT COST O/H		0.00	

	G&A RATE (%)	TOTAL COST	NOTES
11. General & Administrative (G&A)			
A. G&A *(Insert Business Application)*			
B. [Expand as needed]			
11. Total G&A		0.00	

		RATE (%)	TOTAL COST	NOTES
12. Total Fee/Profit %				Please provide a description of to which elements fee is being applied. Ensure a correct and
	A. [Expand as needed]			Insert Fee Percent Here
12. Total Fee Cost			0.00	

		RATE (%)	TOTAL COST	NOTES
13. OTHER FACTORS				Please provide a description of to which elements "Other factors" rate is being applied.
	A. [Expand as needed]			
GRAND TOTAL CLIN 8			0.00	



CLIN 9 - Hardware (Evaluated Option)

		NOTES
Currency (please select from drop down	Euro (EUR)	
Calendar Year (Year 1):	2015	

	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
1. MATERIALS											
A. PURCHASED EQUIPMENT											Please provide the sub-CLIN associated with each cost
Purchased	0									0.00	
Purchased	0									0.00	
B. SUBCONTRACTED EQUIPMENT/MATERIALS											
Subcontracted	0									0.00	
Subcontracted	0									0.00	
C. OTHER											
Other	0									0.00	
Other	0									0.00	
1. TOTAL DIRECT MATERIAL	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
2. MATERIAL OVERHEAD (OH)			
A. OH Rate (%) X TOTAL Material			
B. [Expand as needed]			
2. Total MATERIAL OVERHEAD (OH)		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
3. LABOUR											Please provide the sub-CLIN associated with each cost
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
3. TOTAL DIRECT LABOUR	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
4. LABOUR OVERHEAD			
A. OH Rate (%) X TOTAL LABOUR			
B. [Expand as needed]			
4. Total LABOUR OVERHEAD		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
5. SUBCONTRACT LABOUR											Please provide the sub-CLIN associated with each cost
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
5. TOTAL SUBCONTRACT LABOUR	0									0.00	

	OH RATE (%)	TOTAL COST	NOTES
6. SUBCONTRACT LABOUR O/H			
A. OH Rate (%) X TOTAL SUBCONTRACT LABOUR			
B. [Expand as needed]			
6. Total SUBCONTRACT LABOUR O/H		0.00	

7. TRAVEL UNIT TRIP COST	Number of	Number of	Number of	Unit Cost Cost per	Unit Cost Per Diem	TOTAL COST	NOTES
							Please Describe the reason for the trip
Trip Name A						0.00	
Trip Name B						0.00	
7. TOTAL TRAVEL						0.00	

	OH RATE (%)	TOTAL COST	NOTES
8.TRAVEL OVERHEAD			
A. OH Rate (%) X TOTAL TRAVEL			
B. [Expand as needed]			
8.TRAVEL OVERHEAD		0.00	

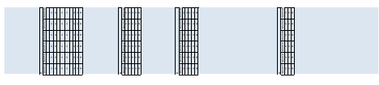
	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
9. OTHER DIRECT COSTS											
Other Direct Cost	0.00									0.00	
Other Direct Cost	0.00									0.00	
9. TOTAL OTHER DIRECT COST										0.00	

	OH RATE (%)	TOTAL COST	NOTES
10. OTHER DIRECT COSTS O/H			
A. OH Rate (%) X TOTAL ODCs			
B. [Expand as needed]			
10. OTHER DIRECT COST O/H		0.00	

	RATE (%)	TOTAL COST	NOTES
11. General & Administrative (G&A)			
A. G&A *(Insert Business Application)*			
B. [Expand as needed]			
11. Total G&A		0.00	

		RATE (%)	TOTAL COST	NOTES
12. Total Fee/Profit %				Please provide a description of to which elements fee is being applied. Ensure a correct and
	A. [Expand as needed]			
12. Total Fee Cost			0.00	

		RATE (%)	TOTAL COST	NOTES
13. OTHER FACTORS				Please provide a description of to which elements "Other factors" rate is being applied.
	A. [Expand as needed]			
GRAND TOTAL CLIN 9			0.00	



CLIN 10 - Software Development and Technical Support (Evaluated Option)

		NOTES
Currency (please select from drop down)	Euro (EUR)	
Calendar Year (Year 1):	2015	

	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
1. MATERIALS											
A. PURCHASED EQUIPMENT											Please provide the each CLIN associated with each cost
Purchased	0									0.00	
Purchased	-									-	
B. SUBCONTRACTED EQUIPMENT/MATERIALS											
Subcontracted	0									0.00	
Subcontracted	0									0.00	
C. OTHER											
Other	-									-	
Other	0									0.00	
1. TOTAL DIRECT MATERIAL	0									0.00	

2015												2016												2017												2018												2019												2020												2021												2022											
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 85	Month 86	Month 87	Month 88	Month 89	Month 90	Month 91	Month 92	Month 93	Month 94	Month 95	Month 96
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

2015												2016												2017												2018												2019												2020												2021												2022											
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 85	Month 86	Month 87	Month 88	Month 89	Month 90	Month 91	Month 92	Month 93	Month 94	Month 95	Month 96
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	OH RATE (%)	TOTAL COST	NOTES
2. MATERIAL OVERHEAD (OH)			
A. OH Rate (%) X TOTAL Material			
B. (Expand as needed)			
2. Total MATERIAL OVERHEAD (OH)		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
3. LABOUR											Please provide the each CLIN associated with each cost
Labour Category Name	-									-	
Labour Category Name	-									-	
Labour Category Name	0									0.00	
Labour Category Name	-									-	
3. TOTAL DIRECT LABOUR	-									-	

2015												2016												2017												2018												2019												2020												2021												2022											
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 85	Month 86	Month 87	Month 88	Month 89	Month 90	Month 91	Month 92	Month 93	Month 94	Month 95	Month 96
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

2015												2016												2017												2018												2019												2020												2021												2022											
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 85	Month 86	Month 87	Month 88	Month 89	Month 90	Month 91	Month 92	Month 93	Month 94	Month 95	Month 96
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	OH RATE (%)	TOTAL COST	NOTES
4. LABOUR OVERHEAD			
A. OH Rate (%) X TOTAL LABOUR			
B. (Expand as needed)			
4. Total LABOUR OVERHEAD		0.00	

	HOURS	RATE/HOUR 2015	RATE/HOUR 2016	RATE/HOUR 2017	RATE/HOUR 2018	RATE/HOUR 2019	RATE/HOUR 2020	RATE/HOUR 2021	RATE/HOUR 2022	TOTAL COST	NOTES
5. SUBCONTRACT LABOUR											Please provide the each CLIN associated with each cost
Labour Category Name	-									-	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
Labour Category Name	0									0.00	
5. TOTAL SUBCONTRACT LABOUR	0									0.00	

2015												2016												2017												2018												2019												2020												2021												2022											
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 85	Month 86	Month 87	Month 88	Month 89	Month 90	Month 91	Month 92	Month 93	Month 94	Month 95	Month 96
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

2015												2016												2017												2018												2019												2020												2021												2022											
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 85	Month 86	Month 87	Month 88	Month 89	Month 90	Month 91	Month 92	Month 93	Month 94	Month 95	Month 96
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	OH RATE (%)	TOTAL COST	NOTES
6. SUBCONTRACT LABOUR O/H			
A. OH Rate (%) X TOTAL SUBCONTRACT LABOUR			
B. (Expand as needed)			
6. Total SUBCONTRACT LABOUR O/H		0.00	

7. TRAVEL UNIT TRIP COST	Number of	Number of	Number of	Unit Cost Cost per	Unit Cost Per Diem	TOTAL COST	NOTES
							Please Describe the reason for the trip
Trip Name A						0.00	
Trip Name B						0.00	
7. TOTAL TRAVEL						0.00	

	OH RATE (%)	TOTAL COST	NOTES
8.TRAVEL OVERHEAD			
A. OH Rate (%) X TOTAL TRAVEL			
B. (Expand as needed)			
8.TRAVEL OVERHEAD		0.00	

	Quantity	Unit Cost 2015	Unit Cost 2016	Unit Cost 2017	Unit Cost 2018	Unit Cost 2019	Unit Cost 2020	Unit Cost 2021	Unit Cost 2022	TOTAL COST	NOTES
9. OTHER DIRECT COSTS											
Other Direct Cost	0.00									0.00	
Other Direct Cost	0.00									0.00	
9. TOTAL OTHER DIRECT COST										0.00	

2015												2016												2017												2018												2019												2020												2021												2022											
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 85	Month 86	Month 87	Month 88	Month 89	Month 90	Month 91	Month 92	Month 93	Month 94	Month 95	Month 96
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

2015												2016												2017												2018												2019												2020												2021												2022											
Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	Month 25	Month 26	Month 27	Month 28	Month 29	Month 30	Month 31	Month 32	Month 33	Month 34	Month 35	Month 36	Month 37	Month 38	Month 39	Month 40	Month 41	Month 42	Month 43	Month 44	Month 45	Month 46	Month 47	Month 48	Month 49	Month 50	Month 51	Month 52	Month 53	Month 54	Month 55	Month 56	Month 57	Month 58	Month 59	Month 60	Month 61	Month 62	Month 63	Month 64	Month 65	Month 66	Month 67	Month 68	Month 69	Month 70	Month 71	Month 72	Month 73	Month 74	Month 75	Month 76	Month 77	Month 78	Month 79	Month 80	Month 81	Month 82	Month 83	Month 84	Month 85	Month 86	Month 87	Month 88	Month 89	Month 90	Month 91	Month 92	Month 93	Month 94	Month 95	Month 96
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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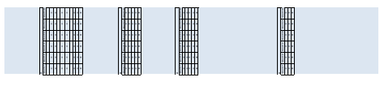
	OH RATE (%)	TOTAL COST	NOTES
10. OTHER DIRECT COSTS O/H			
A. OH Rate (%) X TOTAL ODCs			
B. (Expand as needed)			
10. OTHER DIRECT COST O/H		0.00	

	RATE (%)	TOTAL COST	NOTES
11. General & Administrative (G&A)			
A. G&A (Insert Business Application)			
B. (Expand as needed)			
11. Total G&A		0.00	

		RATE (%)	TOTAL COST	NOTES
12. Total Fee/Profit %				Please provide a description of to which elements fee is being applied. Ensure a correct and
	A. (Expand as needed)			Insert Fee Formula Here
12. Total Fee Cost			0.00	

		RATE (%)	TOTAL COST	NOTES
13. OTHER FACTORS				Please provide a description of to which elements "Other factors" rate is being applied.
	A. (Expand as needed)			
GRAND TOTAL CLIN 10			0.00	



NATO Communications and Information Agency
Agence OTAN d'information et de communication

IFB-CO-14091-EWFS

PROVIDE FUNCTIONAL SERVICES FOR ELECTRONIC WARFARE – INCREMENT 1

NATO Emitter Database Next Generation (NEDB-NG)

BOOK II

PROSPECTIVE CONTRACT

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Original No. ___of 3

NCI Agency Contract CO-14091-EWFS

between

NATO Communications and Information Organisation

- represented by the General Manager, NATO Communications and Information Agency -

Boulevard Leopold III,
B-1110 Brussels,
Belgium

and

[TBD]

PROVIDE FUNCTIONAL SERVICES FOR ELECTRONIC WARFARE – INCREMENT 1

NATO Emitter Database – Next Generation (NEDB-NG)

Effective Date: [TBD]

Total Contract Value: [TBD]

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SIGNATURE SHEET

IN WITNESS WHEREOF the parties hereto have caused this agreement to be executed by their duly authorised officers on the date shown hereunder:

FOR **THE CONTRACTOR**:	FOR **THE PURCHASER**:
…….. **Signature**	…….. **Signature**
…….. **Printed Name**	…….. **Printed Name**
…….. **Title of Signer**	…….. **Title of Signer**
…….. **Date**	…….. **Date**

TABLE OF CONTENTS

IFB-CO-14091-EWFS

PROVIDE FUNCTIONAL SERVICES FOR ELECTRONIC WARFARE – INCREMENT 1

NATO Emitter Database Next Generation (NEDB-NG)

BOOK II PART I

SCHEDULE OF SUPPLIES AND SERVICES

CLIN	DESCRIPTION	SOW REFERENCE	QTY	Currency	Unit PRICE Euro (EUR)	TOTAL PRICE Euro (EUR)	DELIVERY DATE	Delivery Site	WP REFERENCE	FORM
	Grand Total Firm Fixed Price (CLINs 1-10) Base plus Evaluated Options)									
	Grand Total Firm Fixed Price (CLINs 1-7) Base Contract									
1	**Project Management**									
1.1	Project Meetings, Resources and Reports									See Below
1.1.1	Project Meetings and minutes	3.17.7.1, 3.17.7.4, 3.17.1	As required				EDC + 2w	NCIA, Brussels	1.6.1	N/A
1.1.2	Project Highlight Reports (PHR)	3.17.5	As required				Monthly	NCIA, Website	1.5.4	Paper, Electronic
1.2	Project Engineering, Monitor and Control									See Below
1.2.1	Project Management Website	3.16	1				At PMR and as changes occur	Website	1.2.2	Online
1.2.2	Project Management Plan (PMP)	3.4	1				At PMR and as changes occur	NCIA, Website	1.3.1	Paper, Electronic
1.2.3	Configuration Management Database	3.10	1				At PMR and as changes occur	NCIA, Website	1.5.3	Paper, Electronic
1.2.4	System Development Plan (SDP)	4.3	1				At PMR and as changes occur	NCIA, Website	1.4.1	Paper, Electronic
1.2.5	Quality Management Plan (QAP)	3.9.5	1				At PMR and as changes occur	NCIA, Website		Paper, Electronic
1.2.6	Integrated Logistic Support Plan (ILSP)	6.2.1	1				At PMR and as changes occur	NCIA, Website		Paper, Electronic
1.2.7	Configuration Management Plan	3.1	1				At PMR and as changes occur	NCIA, Website		Paper, Electronic
1.3	Reviews									
1.3.1	Project Checkpoint Reviews (PCR)	3.17.4	As required				Monthly	NCIA, The Hague	1.6.2	N/A
1.3.2	Project Management Review (PMR)	3.17.3	1				EDC + 4w	At Contractor's location	1.7.1	N/A
	Total CLIN 1									
2	**Requirements Analyses and System Design**									
2.1	Requirements Analyses									
2.1.1	Software Requirements Specification (SWRS)	4.4.4	1				At PSRR and as changes occur	NCIA, Website	2.2.4	Paper, Electronic
2.1.2	Requirements Traceability Matrix	4.5.6	1				At PSRR and as changes occur	NCIA, Website	2.2.3	Paper, Electronic
2.1.3	User Interface Specification (UIS)	4.4.4	1				At PSRR and as changes occur	NCIA, Website	2.2.5	Paper, Electronic
2.1.4	System Specific Security Requirements Statement (SSRS)	4.4.3	1				SRR + 2w and as changes occur	NCIA, Website	2.2.7	Paper, Electronic
2.1.5	System Interconnection Security Requirements Statement (SISRS)	4.4.3	1				SRR + 2w and as changes occur	NCIA, Website	2.2.8	Paper, Electronic
2.2	System Design									
2.2.1	System Architecture Description (SAD)	4.5.3	1				At SRR and as changes occur	NCIA, Website	2.3.1	Paper, Electronic
2.2.2	System Security Design Specification (SSDS)	4.5.5	1				SRR + 2w and as changes occur	NCIA, Website	2.2.6	Paper, Electronic
2.2.3	Interface Control Document (ICD)	4.5.7	1				SRR + 2w and as changes occur	NCIA, Website	2.3.3	Paper, Electronic
2.3	Reviews									
2.3.1	Preliminary System Requirements Review (PSRR)	4.4.4	1				PSRR: EDC + 6w	NCIA The Hague	2.4.1	N/A
2.3.2	System Requirements Review (SRR)	4.4.4	1				SRR: EDC + 8w	NCIA The Hague	2.4.2	N/A
2.3.3	Preliminary Design Review (PDR)	4.5.2	1				EDC + 4m	NCIA The Hague	2.4.3	N/A
2.3.4	Joint Technical Reviews (User Requirements)	3.17.7.3	2				EDC + 5w, EDC + 10w	NCIA The Hague	2.4.3	N/A
	Total CLIN 2									
3	**System Development**									
3.1	Sytem Implementation									
3.1.1	Software Design Specification (SDS)	4.5.4	1				At CDR and as changes occur	NCIA, Website	2.3.2	Paper, Electronic
3.1.2	Population of internal Database	4.8.1	1				At CDR and as changes occur	NCIA, The Hague	3.2.3	Electronic
3.2	System Testing									
3.2.1	System Integration Test (SIT) procedures	4.7.16.4	1				At CDR and as changes occur	NCIA, Website	3.4.2	Paper, Electronic
3.2.2	System Integration Test (SIT) Report	4.7.16	1				At TRR	NCIA, Website	3.3.4	Paper, Electronic
3.2.3	User Acceptance Test (UAT) procedures	4.7.16.5	1				At CDR and as changes occur	NCIA, Website	4.2.2	Paper, Electronic
3.2.4	System Support and Maintenance Acceptance Test (SSMAT) procedures	4.7.16.6	1				At CDR and as changes occur	NCIA, Website	3.4	Paper, Electronic
3.2.5	System Support and Maintenance acceptance Test (SSMAT) Report	4.7.16.6	1				At TRR	NCIA, Website	3.3.4	Paper, Electronic
3.2.6	Factory Acceptance Test (FAT) procedures	4.7.16.1	1				At CDR and as changes occur	NCIA, Website	3.3.5	Paper, Electronic
3.3	Integration Testbed Implimentation and Testing									
3.3.1	Test Plan	4.7.16.1.6	1				At CDR and as changes occur	NCIA, Website	3.3	Paper, Electronic
3.3.2	Security Test and Evaluation (T&E) Plan	4.7.16.2	1				At CDR and as changes occur	NCIA, Website	3.3	Paper, Electronic
3.3.3	Test Report Form	4.7.16.1.6	10				At CDR and as changes occur	NCIA, Website	3.3	Paper, Electronic
3.3.4	Security Implementation Verification Procedures (SIVP)	4.7.16.2	1				At CDR and as changes occur	NCIA,Website	3.3	Paper, Electronic
3.3.5	System Implementation Plan (SIP)	4.8.2	1				At CDR and as changes occur	NCIA, Website	5.3.1	Paper, Electronic
3.3.6	NEDB-NG software (baseline version to be tested)	5.2	1				At TRR	NCIA, The Hague	4.2.3	Electronic
3.3.7	Factory Acceptance Test (FAT)Report	4.2	2				TRR + 2w	NCIA, Website	3.3.5	Paper, Electronic
3.4	Reviews									
3.4.1	Critical Design Review (CDR)	4.5.2	1				EDC + 6m	NCIA, The Hague	3.5.1	N/A
3.4.2	Test Readiness Review (TRR)	4.7.16.1.6	1				EDC + 12m	NCIA, The Hague	3.5.2	N/A
3.4.3	Joint Technical Reviews (Sprints)	4.2.2.3	4				EDC + 5m, EDC + 7m, EDC + 9m, EDC + 11m	NCIA, The Hague	3.5.4	N/A
	Total CLIN 3									

4	**System Integration and Acceptance**									
4.1	System Integration		1				Start: EDC + 8m			See below
4.1.1	Security Operating Procedures (SecOps)	4.7.16.2.7	1				At Start and as changes occur	NCIA, Website	4.2.1	Paper, Electronic
4.1.2	Security Test and Evaluation Plan (ST&V)	4.7.16.2	1				At Start and as changes occur	NCIA, Website	4.2.1	Paper, Electronic
4.1.3	Security Risk Assesment Report	4.4.3	1				At Start and as changes occur	NCIA, Website	4.2.1	Paper, Electronic
4.1.4	System Security Design Specification (SSDS)	4.5.5	1				At Start and as changes occur	NCIA, Website	4.2.1	Paper, Electronic
4.1.5	Communication and Information System (CIS) description	4.8	1				At Start and as changes occur	NCIA, Website	4.2	Paper, Electronic
4.2	Acceptance Test and Reviews									See below
4.2.1	PWG User Acceptance Test	4.7.16.5	1				EDC + 14m	NCIA The Hague	4.2.2	N/A
4.2.2	PWG User Acceptance Test Report	4.7	2				NLT 2w after PWG UAT	NCIA, Website	4.2.2	Paper, Electronic
4.2.3	Deployment Readiness Review (DRR)	4.8	1				EDC + 15m	NCIA The Hague	4	N/A
	Total CLIN 4									
5	**Site Survey and Site Activation**									
5.1	Site Survey		3				EDC + 8m and NLT 12m			
5.1.1	System Implementation Plan (SIP)	4.8.2	1				EDC + 8m and as changes occur until DRR	NCIA, Website	5.3.1	Paper/Electronic
5.1.2	Site Survey Questionaire	4.8.4	5				EDC + 8m and as changes occur until DRR	NCIA, Website	5.3.3	Paper/Electronic
5.1.3	Site Survey Integrated Testbed	3.1.7	1				EDC + 8m	NCIA The Hague	3.2.4	N/A
5.1.4	Site Survey Report Integrated Testbed	4.8.4	1				NLT 1 week after Site Survey	NCIA, Website	5.3.4	Paper/Electronic
5.1.5	Site Survey NATO Data Centre	4.8	1				During WP4 and NLT DRR	Brussels or Mons	5.2	N/A
5.1.6	Site Survey Report NATO Data Centre	4.8.4	1				NLT 1 week after Site Survey	NCIA, Website	5.3.4	Paper/Electronic
5.1.7	Site Survey JEWCS	4.8	1				During WP4 and NLT DRR	JEWCS, Yeovilton, UK	5.2	N/A
5.1.8	Site Survey Report JEWCS	4.8.4	1				NLT 1 week after Site Survey	NCIA, Website	5.3.4	Paper/Electronic
5.1.9	Site Survey NCIA Mons	4.8	1				During WP4 and NLT DRR	NCIA Mons	5.2	N/A
5.1.10	Site Survey Report NCIA Mons	4.8.4	1				NLT 1 week after Site Survey	NCIA, Website	5.3.4	Paper/Electronic
5.2	Preparation, Installation and Activation									
5.2.1	Site Activation Test Report Integrated Testbed	4.8	1				EDC + 9m	NCIA, Website	5.4	Paper/Electronic
5.2.2	Site Activation Test Report NATO Data Centre	4.8	1				EDC + 15m	NCIA, Website	5.4	Paper/Electronic
5.2.3	Site Activation Test Report JEWCS	4.8	1				EDC + 16m	NCIA, Website	5.4	Paper/Electronic
5.2.4	Site Activation Test Report NCIA Mons	4.8	1				EDC + 23m	NCIA, Website	5.4	Paper/Electronic
5.2.5	Data Migration Test Report	4.8	1				EDC + 17m	NCIA, Website	5.5	Paper/Electronic
5.2.6	Data Migration Log File	4.8	1				EDC + 17m	NCIA, Website	5.5	Paper/Electronic
5.2.7	PWG Data Migration Review	4.8.6	1				EDC + 18m	NCIA The Hague	5.4.5	N/A
5.3	System Acceptance and Documentation									
5.3.1	Sofware Distribution List	4.8	1				EDC + 24m	NCIA, Website	5.1	Paper/Electronic
5.3.2	Material Data Sheet (MDS)	6.8	1				EDC + 24m	NCIA, Website	5.1	Paper/Electronic
5.3.3	As Built Documentation	4.8	1				EDC + 24m	NCIA, Website	5.1	Paper/Electronic
5.3.4	Final System Acceptance	4.8.8	1				EDC + 24m	NEDB-NG Sites	5.4.6	N/A
	Total CLIN 5									
6	**Training Support**									
6.1	Training Course Development	6					EDC + 8m until TMR		6.2	N/A
6.1.1	Training Plan	6.5	1				EDC + 9m and as changes occur	NCIA, Website	6.2.1	Paper, Electronic
6.1.2	Training Programme	6	1				EDC + 9m and as changes occur	NCIA, Website	6.2.2	Paper, Electronic
6.2	Training Delivery									
6.2.1	Training Environment and Equipment	6.5.3.4	2				EDC + 15m	NCIA The Hague, JEWCS	6.3	NEDB-NG system
6.2.2	Training NEDB-NG Administrators	6.5.3.4	See below				Start at EDC + 15m	NCIA The Hague, JEWCS	6.3.2	Course
6.2.3	Training NEDB-NG Users	6.5.3.4	See below				Start at EDC + 15m	NCIA The Hague, JEWCS	6.3.3	Course
6.2.4	Training NEDB-NG Trainers	6.5.3.4	See below				Start at EDC + 15m	NCIA The Hague, JEWCS	6.3.4	Course
6.2.5	Training Database	6.5.3.4	2				EDC + 15m	NCIA The Hague, JEWCS	6.3	Electronic
6.3	Training Material									
6.3.1	NEDB-NG Administrators Training	6.5.3.5	5				EDC + 15m	NCIA The Hague, JEWCS	6.3	Paper, Electronic
6.3.2	NEDB-NG User (DBM, DBA, DBP, DBR) Training	6.5.3.5	60				EDC + 15m	NCIA The Hague, JEWCS	6.3	Paper, Electronic
6.3.3	NEDB-NG Trainers Training	6.5.3.5	5				EDC + 15m	NCIA The Hague, JEWCS	6.3	Paper, Electronic
	Total CLIN 6									
7	**System Support**									
7.1	NEDB-NG Support Documentation									
7.1.1	Maintenance Concept	6.3	1				EDC + 8m and as changes occur	NCIA, Website	7	Paper, Electronic
7.1.2	Support Concept	6.4	1				EDC + 8m and as changes occur	NCIA, Website	7.2	Paper, Electronic
7.1.3	Transition Plan	6.7	1				EDC + 12m and as changes occur	NCIA, Website	7.3	Paper, Electronic
7.1.3	Operational Documentation	6.10.1	as required				TRR	NCIA, Website		Paper, Electronic
7.1.4	Maintenance documentation	6.10.2	as required				TRR	NCIA, Website		Paper, Electronic

7.2	Organisation of Support										
7.2.1	Support to initial Testing & Evaluation	4.7	2				EDC + 12m, 5 man weeks	NCIA The Hague	7.3	N/A
7.2.2	Support to Testing & Evaluation	4.7	2				EDC + 24m, 2 man weeks	Brussels or Mons	7.3	N/A
7.2.3	System Operational Test (SOT) Report	4.7	2				EDC + 12m + 2w and EDC + 24m + 2w	NCIA, Website	7.4	Paper, Electronic
7.3	Operational Support									
7.3.1	Support to Administrators (Staff day)	6.9	10				EDC + 24m until end of warranty	NCIA Mons	7.4	N/A
7.3.2	Support to Users (Staff day)	6.9	20				EDC + 24m until end of warranty	JEWCS Yeovilton	7.4	N/A
7.4	One Year Warranty	6.9	1				Starts at FSA	All deployment locations	8	N/A
	Total CLIN 7									
8	**Third Level Software Support (Evaluated Option)**									
8.1	NEDB-NG System updates	6.7	5				5 Years Extended Waranty		8.1	See below
8.1.1	NEDB-NG software patches and upgrades	6.7	1				Once per year	NCIA The Hague	8.2	Electronic
8.1.2	Technology Refresh Support	6.7	As required				As required	NCIA The Hague	8.3	Electronic
8.1.3	NEDB-NG documentation baseline updates	6.8	1				One time per year	NCIA The Hague	8.4	Paper, Electronic
8.1.4	Updates to manuals and training materials	6.5	1				As required	JEWCS	8.4	Paper, Electronic
8.1.5	Support to the approval of the updated version	6.7	As required				As required	NCIA The Hague	8.4	N/A
	Total CLIN 8									
9	**Hardware (Evaluated Option)**									
9.1	Equipment									
9.1.1	Servers	4.7.4	3				As required	As required		HW
9.1.2	Transportation	4.8.1.1.11	3				As required	As required		N/A
	Total CLIN 9									
10	**Software development and technical support (Evaluated Option)**									
10.1	Contractor Support									
10.1.1	Project Manager	As required	20 man/day				As required	At Contractor's location		Man/days
10.1.2	System Engineer	As required	20 man/day				As required	At Contractor's location		Man/days
10.1.3	Software Developer	As required	60 man/day				As required	At Contractor's location		Man/days
10.1.4	Test Engineer	As required	20 man/day				As required	At Contractor's location		Man/days
10.1.5	Documentation	As required	20 man/day				As required	At Contractor's location		Man/days
10.1.6	Project Support	As required	20 man/day				As required	At Contractor's location		Man/days
	Total CLIN 10									

NATO Communications and Information Agency
Agence OTAN d'information et de communication

IFB-CO-14091-EWFS

PROVIDE FUNCTIONAL SERVICES FOR ELECTRONIC WARFARE – INCREMENT 1

NATO Emitter Database Next Generation (NEDB-NG)

BOOK II - PART II

CONTRACT SPECIAL PROVISIONS

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1 ALTERATIONS, MODIFICATIONS AND DELETIONS OF THE NCIA CONTRACT GENERAL PROVISIONS

1.1 Article 3 “Order of Precedence” modifies Clause 1 “Order of Precedence” of the Contract General Provisions.
1.2 Article 5 “Participating Countries” augments Clause 9 “Participating Countries” of the Contract General Provisions.
1.3 Article 7 “Security” augments Clause 11 “Security” of the Contract General Provisions.
1.4 Article 9 “Intellectual Property Right, Indemnity and Royalties” augments Clause 29 “Patent and Copyright Indemnity” and Clause 30 “Intellectual Property” of the Contract General Provisions.
1.5 Article 10 “Pricing of Changes, Modifications, Follow-on Contracts and Claims” augments Clause 19 “Pricing of Changes, Amendments and Claims” of the Contract General Provisions.
1.6 Article 11 “Acceptance of Design Documentation” augments Clause 22 “Inspection and Acceptance of Documentation” of the Contract General Provisions.
1.7 Article 21 “Liquidated Damages” replaces Clause 38 “Liquidated Damages” of the Contract General Provisions.
1.8 Article 22 “Inspection and Acceptance” augments Clause 21 “Inspection and Acceptance of Work” and Clause 22 “Inspection and Acceptance of Documentation” of the Contract General Provisions.
1.9 Article 23 “Systems Warranty” augments Clause 27 “Warranty of Work (Exclusive of Software)” and Clause 30 “Software Warranty” of the Contract General Provisions.
1.10 Article 25 “Place and Terms of Delivery” replaces sub-Clause 20.1 of Clause 20 “Notice of Shipment and Delivery” of the Contract General Provisions.

2 SCOPE

2.1 The Contractor shall deliver NATO Emitter Database – Next Generation (NEDB-NG) as per Part IV - Statement of Work and in accordance with Part I - Schedule of Supplies and Services for the firm fixed prices stated in this Contract

3 ORDER OF PRECEDENCE

3.1 Clause 1 of the Contract General Provisions is modified to read as follows;

“In the event of any inconsistency in language, terms or conditions of the various parts of this Contract, precedence will be given in the following order:

1. Schedule of Supplies and Services, Part I,

2. Contract Special Provisions, Part II,
3. Contract General Provisions, Part III,
4. Statement of Work, and its Annexes, Part IV,
5. System Requirements Specification and its Appendices, Part V
6. The Purchaser reserves the right to include in the Contract the Bidder's Technical Proposal submitted in response to IFB-CO-14091-EWFS dated *xx xxxxx 2016* and any subsequent clarifications or modifications thereto (TBD).

4 OPTIONS

4.1 The Purchaser shall have the right to place on Contract the provision of "Options" in Part I Schedule of Supplies and Services for the duration of the Contract. If the Purchaser exercises such options, the Contractor shall deliver such specified quantities of additional or alternative supplies and services at such times and to such destinations as specified in the Contract.

4.2 Prices for all optional line items shall have a validity period that corresponds to the option exercise period cited above.

4.3 The Purchaser may increase the quantity of supplies and services as set forth in any line item of Part I - Schedule of Supplies and Services. The Contractor will use all reasonable endeavours to maintain the prices specified therein. Changes to these prices shall be accompanied with documentation and explanation of the change. If this Option is exercised, delivery of the added items shall be to the same destination as specified in the basic Contract; unless otherwise specified on the written notice. If the Contract provides for multiple destinations, the Purchaser will specify to which destination(s) the additional quantities are to be shipped. If the Purchaser specifies a destination that is not part of the basic Contract requirements, the Parties will agree to an equitable adjustment as may be required to reflect any additional costs incurred by the Contractor in making such delivery.

4.4 The Contractor understands that there is no obligation under this contract for the Purchaser to exercise any of the optional line items and that the Purchaser bears no liability should it decide not to exercise the options (totally or partially). Further, the Purchaser reserves the right to order another Contractor (or the same), to perform the tasks described in the optional line items of the current contract through a new contract with other conditions

4.5 The options shall be exercised by written amendment to the contract.

5 PARTICIPATING COUNTRIES

5.1 This Article augments Clause 9 of the Contract General Provisions.

5.2 The following NATO member nations have agreed to fund this acquisition effort: (in alphabetical order): ALBANIA, BELGIUM, BULGARIA, CANADA, CROATIA, THE CZECH REPUBLIC, DENMARK, ESTONIA, FRANCE, GERMANY, GREECE, HUNGARY, ICELAND, ITALY, LATVIA, LITHUANIA, LUXEMBOURG, THE NETHERLANDS, NORWAY, POLAND, PORTUGAL, ROMANIA, SLOVENIA, SLOVAKIA, SPAIN, TURKEY, THE UNITED KINGDOM and THE UNITED STATES.

5.3 The Contractor may issue sub-contracts to firms and purchase from qualified vendors in any NATO member nation. None of the work, including project design, labour and services, shall be performed other than by firms from and within participating countries and Afghanistan, as per NATO policy.

5.4 The Contractor shall notify in writing to the Purchaser immediately upon being informed of any change in the nationality of its Sub-contractor(s) which would prevent the Contractor from further complying with Clause 5.3 above. Upon receipt of this information from the Contractor, the Purchaser may, within three months from this notification, require the Contractor to find an alternate subcontractor, complying with the requirements set out in Clause 5.3 above.

5.5 Unless authorised by NATO Policy, no material or items of equipment down to and including identifiable sub-assemblies delivered under this Contract shall be manufactured or assembled by a firm other than from and within a participating country.

5.6 The Intellectual Property Rights to all designed documentation and system operating software shall reside in NATO member countries, and no license fee, or royalty charges shall be paid by the Contractor to firms, individuals or governments other than within the NATO member community.

6 CONTRACT ADMINISTRATION

6.1 The Purchaser is the NATO CI Agency (NCI Agency). The Purchaser is the Point of Contact for all Contractual and Technical issues. The Contractor shall accept Contract modifications only in writing from the Purchaser’s Contracting Authority

6.2 All notices and communications between the Contractor and the Purchaser shall be written and conducted in English. Contract modifications only become valid when received in writing from the General Manager, NCI Agency, and his authorised representative.

6.3 Formal letters and communications shall be personally delivered or sent by mail, registered mail, email, courier or other delivery service, to the official points of contact quoted in this Contract.

6.4 Informal notices and informal communication may be exchanged by any other means, including telephone.

6.5 All notices and communication shall be effective upon receipt.

6.6 Official Points of Contact are:

PURCHASER

Contractual issues:

NCI Agency
ACQ/ASG
Bâtiment Z
Boulevard Léopold III
B-1110 Brussels
Belgium

POC: Michel Trebaol
Tel: +32 2 707 8266
E-mail michel.trebaol@ncia.nato.int

Technical issues:

NCI Agency
DIS/NSII
Oude Waalsdorperweg 6
2597 AK The Hague
The Netherlands

POC: Cristian Coman
Tel: + 31 70 374 3490
E-mail: cristian.coman@ncia.nato.int

CONTRACTOR

Contractual issues:

Company Name
Address

POC:
Tel:
Fax:
E-mail

Technical issues:

Company Name
Address

POC:
Tel:
Fax:
E-mail:

7 SECURITY

7.1 This Article augments Clause 11 of the Contract General Provisions.

7.2 The Contractor is responsible, in accordance with NATO and National Security regulations, for the proper handling, storage and control of any classified documents and information as may be furnished to the Contractor in relation to the performance of the present contract.

7.3 The security classification of this contract is “NATO UNCLASSIFIED” when separated from Part IV Annex A2.

7.4 Contractor's personnel visiting or working at Purchaser’s facilities in connection with this Contract shall hold a NATO SECRET security clearance valid for the

duration of the Contract. This requirement applies to all sub-contracts issued by the Contractor for the effort under this prime Contract.

7.5 It is the responsibility of the Contractor to ensure that his personnel obtain the required security clearances and transmit this information to the sites to be visited in adequate time that the site may perform the appropriate administration.

7.6 The Contractor is advised that the personnel security process may be lengthy. The Purchaser bears no responsibility for the failure of the Contractor to secure the required clearances for its personnel within the necessary time.

7.7 Failure of the Contractor to obtain proper security clearances to have access to any NATO sites, and any attendant delay in the project which results from this access refusal, is not the basis for excusable delay under the terms of the contract concerning default. The Contractor bears full responsibility and liability under the contract for delays arising from the failure of the Contractor to adhere to the security requirements.

7.8 If during the performance of the Contract, Contractor's personnel need to be escorted because of non-availability of the security clearance required by the Site, the Contractor shall pay to the Purchaser a compensatory fee of 500 Euro per day of escort.

7.9 In the absence of valid security clearances for the Contractor's personnel at contract signature, the Purchaser reserves the right to terminate the Contract for “Default”.

7.10 The Contractor's facilities shall meet NATO security regulations to permit handling and storage of information classified up to and including NATO SECRET.

8 INTELLECTUAL PROPERTY RIGHT INDEMNITY AND ROYALTIES

8.1 This Article augments Clauses 29 and 30 of the Contract General Provisions.

8.2 The Contractor shall assume all liability and indemnify the Purchaser, its officers, agents and employees against liability, including costs for the infringement of any patents or copyright in force in any countries arising out of the manufacture, services performed or delivery of supplies, or out of the use or disposal by or for the account of the Purchaser of such supplies. The Contractor shall be responsible for obtaining any patent or copyright licences necessary for the performance of this Contract and for making all other arrangements required to indemnify the Purchaser from any liability for patent or copyright infringement in said countries.

8.3 The Contractor shall exclude from his prices any royalty pertaining to patents which in accordance with agreements reached between NATO countries may be utilised free of charge by member nations of NATO and by NATO organisations.

8.4 The Contractor shall report in writing to the Purchaser during the performance of this Contract:
The royalties excluded from his price for patent utilised under the agreements mentioned in the paragraph above.
The amount of royalties paid or to be paid by the Contractor directly to others in performance of this Contract.

9 PRICING OF CHANGES, MODIFICATIONS, FOLLOW-ON CONTRACTS AND CLAIMS

9.1 This Article augments Clause 19 of the Contract General Provisions.

9.2 The Purchaser may at any time, by written order designated or indicated to be a change order, and without notice to the sureties, if any, make changes within the scope of any Contract or Task Order, in accordance with Clause 16 (Changes) of the Contract General Provisions.

9.3 Changes, modifications, follow-on Contracts of any nature, and claims shall be priced in accordance with Clause 19 (Pricing of Changes, Amendments and Claims) of the Contract General Provisions, and with the "Purchaser's Pricing Principles" as set out in the Annex to the Contract General Provisions.

9.4 Contractor price quotations for Contract changes or modifications shall be provided at no cost to the Purchaser and shall have a minimum validity period of six (6) months from submission.

9.5 The pricing information contained in the cost breakdown sheets submitted with the Bidding sheets, as part of the Contractor’s proposal, and especially the forward labour rates provided, will constitute the basis for any future negotiations related to possible future amendments to this Contract.

10 ACCEPTANCE OF DESIGN DOCUMENTATION

10.1 This Article augments Clause 22 of the Contract General Provisions.

10.2 The acceptance by the Purchaser of the Contractor’s design documentation required by this Contract signifies that the documents delivered appear logical and consistent. The acceptance does not constitute an endorsement or approval of the design by the Purchaser and does not relieve the Contractor of the obligation to meet the performance requirements of this contract in the event that the design eventually proves to be non-compliant at the testing

11 INDEMNITY

11.1 The Contractor will indemnify and hold harmless NATO, its servants or agents, against any liability, loss or damage arising out of or in connection of the Supplies and Services under this Contract, including the provisions set out in Article 8, "Intellectual Property Rights, Indemnity and Royalties".

11.2 The parties will indemnify each other against claims made against the other by their own personnel, and their sub-Contractors (including their personal representatives) in respect of personal injury or death of such personnel or loss or destruction of or damage to the property of such personnel.

11.3 NATO will give the Contractor immediate notice of the making of any claim or the bringing of any action to which the provisions of this Article may be relevant and will consult with the Contractor over the handling of any such claim and conduct of any such action and will not without prior consultation and without the consent of the Contractor settle or compromise any such claim or action.

11.4 In the event of an accident resulting in loss, damage, injury or death arising from negligence or wilful intent of an agent, officer or employee of NATO for which the risk has been assumed by the Contractor, the cause of the accidents will be investigated jointly by the Parties and the extent to which NATO will be liable to recompense the Contractor will be determined together.

12 KEY PERSONNEL

12.1 The individuals listed below are considered to be key to the performance of this contract and may not be replaced by the Contractor with substitute personnel without the prior written approval of the Purchaser. The Key Personnel are as follows:

POSITION	NAME
Contractor Project Manager (CPM)	[*To be completed at award*]
Contractor Technical Lead (CTL)	[*To be completed at award*]

12.2 In such cases where the services of the Key Personnel are lost to the Contractor beyond the reasonable control of the Contractor, the Contractor must nominate a substitute(s) of equivalent or higher qualification and experience within 15 working days of the date at which the Contractor has knowledge of the loss of service of such key personnel. The replacement personnel shall be in place within a reasonable time.

12.3 If the Contractor is unable to nominate and/or replace the lost personnel within the timeframe mentioned in 12.2 above, the Purchaser may conclude that the loss of the Key Personnel endangers progress under the Contract to the extent

that the Purchaser may resort to the Clause 39 – "Termination for Default" of the Contract General Provisions for redress of the situation.

12.4 The Purchaser shall approve the dedicated personnel, as well as the replacement personnel. The Purchaser has the right to refuse any proposed substitution as not meeting the qualifications and request the Contractor to offer another qualified individual in lieu thereof.

12.5 The Purchaser reserves the right to reject a Contractor's staff member after acceptance of a Contractor's staff member on the basis of his/her CV if the individual is not providing the required level of support. The Purchaser will inform the Contractor in writing in case such a decision is taken and the Contractor shall propose and make another staff member available within three working days after the written notification.

12.6 A Contractor's staff member assigned to the present Contract shall remain working on the Contract for as long as required by the terms of the present Contract. However, in the event where the Contractor has no control over the individual's non-availability (e.g., resignation, sickness, incapacity, etc.), the Contractor shall notify the Purchaser of a change of key personnel within working 3 days of the date of knowledge of the prospective vacancy and offer a substitute with equivalent qualifications.

12.7 The Purchaser has the right to refuse any proposed substitution if not meeting the qualifications and request the Contractor to offer another qualified individual in lieu thereof. The Purchaser will confirm any consent given to a substitution in writing and only such written consent shall be deemed as valid evidence of Purchaser consent.

12.8 After acceptance in writing by the Purchaser of a substitution of staff, based on a CV, the above paragraph shall be applicable again, if necessary.

13 LANGUAGE OF WORK

13.1 The working language of the Project Team is English and the associated technical documents are printed in English. All Contractor's personnel engaged in this project shall have a thorough knowledge of the English language. In particular using the Test of English as a Foreign Language (TOEFL) as the rating criteria, the level of English of all Key Personnel, as identified in Article 12, employed on this project shall have a score of at least 105 on the TOEFL Internet-based Test (IBT).

13.2 Failure to satisfy this requirement may be the basis for Purchaser's request of change of personnel.

14 CARE AND DILIGENCE OF PROPERTY

14.1 The Contractor shall use reasonable care of avoid damaging building, equipment work site premises. If the Contractor damages any such building or equipment, he shall repair the damage as directed by the Purchaser and at no expenses to the Purchaser. If he fails or refuses to make such repair or replacement, the Contractor shall be liable for the cost thereof, which may be deducted from the Contract price.

14.2 The Purchaser shall exercise due care and diligence for Contractor's furnished equipment, tools and materials on site premises. The Purchaser will not assume any liability except for gross negligence and wilful misconduct. The Purchaser will, however, not assume any liability except for gross negligence and wilful misconduct on the part of the Purchaser’s personnel or agents.

14.3 The Contractor shall, at all times, keep the site area, including storage areas used by the Contractor, free from accumulations of waste. On completion of all work the Contractor is to leave the site area and its surroundings in a clean and neat condition.

15 APPLICABLE REGULATIONS

15.1 The Contractor shall be responsible for obtaining permits or licenses to comply with national codes, laws and regulations or local rules and practices of the country of installation with respect of any works carried out at the designated installation sites stated under this Contract.

15.2 The Contractor shall take any necessary measure to protect the life and health of persons working or visiting the work area occupied by him. These measures include compliance with the country of installation's safety provisions.

15.3 In the performance of all work under this Contract, it shall be the Contractor's responsibility to ascertain and comply with all applicable NATO security regulations as implemented by the local Headquarters' Security Officer.

16 PRICE BASIS

16.1 This is a Firm Fixed Price contract.

16.2 The Priced Schedule of Supplies and Services of the present contract, divided by major Contract Line Items (CLINs) shall list all services and/or deliverables, their due date, the place of delivery and their firm fixed price contract line item price.

16.3 The Firm Fixed Price of this contract includes all travel and accommodation, between NATO Locations and the Contractor’s own premises, wherever he

executes the contract, that the Contractor considers necessary to execute his tasking, or that is required for the execution of the contract shall be included in the total contract price and per diem costs associated with the Contractor's performance of the Statement of Work.

16.4 If the Purchaser requests a change of scope to the services or deliverables to be provided under the present contract, the price to be established shall be fair and reasonable and subject to agreement at the time when the change is ordered. These fair and reasonable prices shall be established on the basis of the Clause 7 – "Firm Fixed Price Contract" of the Contract General Provisions and all pricing elements e.g. daily rates, overheads etc, already established in the Schedule of Supplies and Services. Prices may be established in the Contractor's own currency or in Euro. Prices may also be stated in any currency of the participating NATO countries provided that, and only to the extent that, the Contractor has expenses in the currency directly related to the current contract.

16.5 Option Price: The rates given in Part I – Schedule of Supplies and Services, Options, are fixed for the duration of the Contract.

17 SCHEDULE OF PAYMENTS

17.1 The Contractor shall submit to the Purchaser an invoice prepared in accordance with Clause 25 – "Invoices and Payment" of the Contract General Provisions upon achievement of the Project Milestones listed below. The invoice shall be calculated on the basis of the total price of the Basic Contract excluding the exercise of any options.

17.2 Payment shall be made in the currency specified following purchaser acceptance of the supplies and services to be furnished. The price to be charged is the total firm fixed price stated in the Contract Schedule of Supplies and Services. The total firm fixed price is an overall price including expenses. No payment shall be made with respect to undelivered supplies, works not performed and/or services not rendered.

17.3 Invoice shall be prepared for each Milestone in accordance with the Milestones Payment Schedule as indicated below. Therefore an invoice shall correspond to the successful completion of a Milestone, and shall contain the required documented evidence of the successful completion of each Item of that Milestone, including all required testing and acceptance documents for all the Item of that milestone.

17.4 Payment will be made by the Purchaser to the Contractor's financial institution as indicated on the invoice within sixty (60) calendar days of receipt of a properly prepared invoice. Invoices shall be submitted in quadruplicate.

17.5 Payment milestones are as follows:

Milestone Number	Description	Payment
1	Upon successful Purchaser confirmed Critical Design Review (CDR)	10% of Total Contract Value
2	Upon successful Purchaser confirmed Test Readiness Review (TRR)	15% of Total Contract Value
3	Upon successful Purchaser confirmed Deployment Readiness Review (DRR)	25% of Total Contract Value
4	Upon successful Purchaser confirmed Initial Operational Capability (IOC) achievement	20% of Total Contract Value
5	Upon successful Purchaser confirmed Final System Acceptance (FSA)	20% of Total Contract Value
6	Upon End of Warranty	10% of Total Contract Value

17.6 The payment milestones for optional CLINs 8 to 10 will be agreed upon exercise of the options.

18 INDEPENDENT CONTRACTOR

18.1 The Personnel provided by the Contractor are at all times employees of the Contractor and not the Purchaser. In no case shall Contractor personnel act on behalf of or as an agent for NATO or any of its bodies. In no way shall the Contractor personnel claim directly or indirectly to represent NATO in an official capacity or claim themselves to be NATO employees.

18.2 The Purchaser shall not be responsible for securing work permits, lodging, leases nor tax declarations, driving permits, etc., with national or local authorities. Consultants employed under this Contract are not eligible for any diplomatic privileges or NATO employee benefits

19 RESPONSIBILITY OF THE CONTRACTOR TO INFORM EMPLOYEES OF WORK ENVIRONMENT

19.1 The Contractor shall inform his employees under this Contract of the terms of the Contract and the conditions of the working environment.

19.2 Specifically, personnel shall be made aware of all risks associated with the performance under this Contract, the conditions of site in which the performance is to take place and living conditions while performing within the boundaries of the Contract. The selection of adequate personnel shall remain sole responsibility of the Contractor.

20 LIQUIDATED DAMAGES

20.1 This Article replaces Clause 38 of the Contract General Provisions.

20.2 If the Contractor fails to meet the delivery/performance at the times specified in the Schedule of Supplies and Services (SSS), or any agreed extension thereto, the actual damage to the Purchaser for the delay will be difficult or impossible to determine. Therefore, in lieu of actual damages the Contractor shall pay to the Purchaser liquidated damages of ten hundreds of one per cent (0.1%) of the value of the associated payment milestone in the payment schedule set forth in Article 17 of the Contract Special Provisions per day of delinquent delivery/performance.

20.3 Alternatively, the Purchaser may terminate this Contract in whole or in part, as provided in paragraph 39.1 of Clause 39 – “Termination for Default” of the Contract General Provisions and in that event the Contractor shall be liable to pay the excess costs provided in paragraph 39.5.

20.4 The Contractor shall not be charged with liquidated damages when the delay arises out of causes beyond the control and without the fault or negligence of the Contractor as defined in paragraph 39.6 of Clause 39 – “Termination for Default” of the Contract General Provisions. In such event, subject to the Disputes and Arbitration Clause, the Purchaser shall ascertain the facts and extent of the delay and shall extend the time for performance of the Contract when in his judgement the findings of fact justify an extension.

20.5 Liquidated damages shall be payable to the Purchaser from first day of delinquency in achieving the specified Major Performance Milestones and shall accrue at the rate specified in paragraph 20.2 to a maximum of Fifteen Per Cent (15%) of the applicable payment for the milestone.

20.6 The amount of Liquidated Damages due by the Contractor shall be recovered by the Purchaser in the following order of priority:
- By deducting such damages from the amounts due to the Contractor against the Contractor's invoices.
- By proceeding against any surety.
- By reclaiming such damages through appropriate legal remedies.

21 INSPECTION AND ACCEPTANCE

21.1 Inspection and Acceptance of the items delivered under this Contract will be made according to Clause 21 - "Inspection and Acceptance of Work" and Clause 22 – “Inspection and Acceptance of Documentation” of the Contract General Provisions and the Statement of Work.

21.2 All documents and data shall be prepared by the Contractor and approved by the Purchaser.

21.3 Acceptance will be made in writing by the Purchaser.

22 SYSTEMS WARRANTY

22.1 This Article augments Clauses 27 and 31 of the Contract General Provisions.

23.2 The Contractor shall provide warranty for the supplies and services delivered under this Contract in accordance with the terms and conditions stipulated in Part IV - Statement of Work, Section 6.11 and Clauses 27 and 31 of the Contract General Provisions.

23.3 In the event of any inconsistency in language, terms or conditions with regards to warranty, the terms or conditions stipulated in Part IV - Statement of Work, Section 6.11 shall have precedence over Clauses 27 and 31 of the Contract General Provisions.

23 COTS TECHNOLOGY

23.1 As changes in technology occur, the Contractor may propose substitution of new products/items for inclusion in this Contract. The proposed items should provide at least equivalent performance with lower prices and/or life-cycle support costs, or enhanced performance without a price or cost increase.

23.2 The Contractor will provide price and performance data to support an improvement in performance and/or a reduction in price and/or life-cycle support costs. If necessary for evaluation by the Purchaser, the Contractor shall provide a demonstration of the proposed items. Should the Purchaser decide that the proposed item(s) should be included in the contract, an equitable price adjustment will be negotiated and the proposed item(s) shall be added to the contract by bilateral modification under the authority of this Article.

24 PLACE AND TERMS OF DELIVERY

24.1 This Article replaces Clause 20.1 of the Contract General Provisions.

24.2 All deliverables under this Contract shall be delivered DDP (“Delivered Duty Paid”) as defined by the INCOTERMS published by the International Chamber of Commerce (Publication No. 560) to the places and at such times as stipulated in the Schedule of Supplies and Services. The Contractor shall note that the Purchaser is exempt from customs duties and Value Added Tax as per Clause 26 – “Taxes and Duties” of the Contract General Conditions.

25 SUPPLEMENTAL AGREEMENT(S), DOCUMENTS AND PERMISSIONS

25.1 The Contractor has submitted all relevant draft supplemental agreement(s), documents and permissions prior to contract award, the execution of which by the Purchaser is/are required by national law or regulation. If any supplemental agreements, documents and permissions are introduced after contract award, and it is determined that the Contractor failed to disclose the requirement for the execution of such agreement from the Purchaser prior to contract signature, the Purchaser may terminate this contract for default in accordance with Clause 29 – "Termination for Default" of the Contract General Conditions.

25.2 Supplemental agreement(s), documents and permissions, the execution of which by the Purchaser is/are required by national law or regulation and that have been identified by the Contractor prior to the signature of this contract, but have not yet been finalised and issued by the appropriate governmental authority, are subject to review by the Purchaser. If such supplemental agreement(s), documents and permissions are contrary to cardinal conditions of the signed contract between the Parties, and the Purchaser and the appropriate governmental authority cannot reach a mutual satisfactory resolution of the contradictions, the Purchaser reserves the right to terminate this contract and the Parties agree that in such case the Parties mutually release each other from claim for damages and costs of any kind, and any payments received by the Contractor from the Purchaser will be refunded to the Purchaser by the Contractor.

26 SOFTWARE

26.1 The Purchaser reserves the right to exclude from the awarded Contract the purchase of software licenses for which NATO has established centralized Contracts. In this case, the contract terms, schedule and prices will be modified accordingly, and the software licenses will be provided to the Contractor in the form of "Purchaser Furnished Equipment".

27 COMPREHENSION OF CONTRACT AND SPECIFICATIONS

27.1 The Contractor warrants that he has read, understood and agreed to each and all terms, clauses, specifications (including drawings) and conditions specified in the Contract and that this signature of the Contract is an acceptance, without reservations, of the said Contract terms within their normal and common meaning.

27.2 The specifications set forth the performance requirements for the Contractor's proposed work as called for under this Contract. Accordingly, notwithstanding any conflict or inconsistency which hereafter may be found between achievement of the aforesaid performance requirements and adherence to the Contractor's proposed design for the work, the Contractor hereby warrants that the work to be delivered will meet or exceed the performance requirements of the said specifications.

27.3 The Contractor hereby acknowledges that he has no right to assert against the Purchaser, its officers, agents or employees, any claims or demands with respect to the aforesaid specifications as are in effect on the date of award of this Contract

27.3.1 based upon impossibility of performance, defective, inaccurate, impracticable, insufficient or invalid specifications, implied warranties of suitability of such specifications, or

27.3.2 otherwise derived from the aforesaid specifications, and hereby waives any claims or demands so based or derived as might otherwise arise.

27.4 Notwithstanding the “Changes” Clause or any other Clause of the Contract, the Contractor hereby agrees that no changes to the aforesaid specifications which may be necessary to permit achievement of the performance requirements specified herein for the Contractor’s proposed work shall entitle the Contractor either to any increase in the fixed price as set forth in this Contract or to any extension of the delivery times for the work beyond the period of performance in the Schedule of Supplies and Services.

28 OBSOLESCENCE

28.1 It is the responsibility of the Contractor to ensure that adequate supplies of replacement parts and equipment are available to perform the services for the duration of the Period of Performance. It is recognised that in some cases, the end of production of certain items of hardware and/or the end of support for certain software and software tools may occur suddenly and/or with limited or no warning. In the case where limited or no warning has been provided or where the acquisition of logistics stocks is not an adequate response, the Contractor shall notify the Purchaser of the event in writing as early as practicable after the Contractor has first knowledge. The notification shall provide a brief description of the nature of the event and the potential impact of the event on the ability of the Contractor to meet the performance requirements of the SOW. The Contractor shall further provide recommendations in the form of one or more Engineering Change Proposals (ECPs) as to the solution(s) to the potential impacts. These recommendations shall provide a full life cycle cost of implementation and support as well as the technical risks and impacts involved if the solution(s) or each of the solutions were implemented (trade off analysis).

28.2 ECPs issued pursuant to this Clause may also include proposals for Optimisation as set forth in Article 29 below.

28.3 After review and analysis, the Purchaser will inform the Contractor of the acceptance of one or more ECP(s) and the changes and the agreed adjustment to the price of the Contract which will be incorporated into the Contract by formal Amendment. Such adjustment shall cover the Contractor’s cost associated to the in depth obsolescence study when applicable. The Purchaser may also decide to take no action and accept the impact on system performance/supportability as detailed by the Contractor. In such a case, an

Amendment to the Contract will be executed changing the aspects of the SOW as required to reflect the impact of not taking any action, and the recovery of the cost associated to the in depth obsolescence study if applicable.

29 OPTIMISATION

29.1 The Contractor is encouraged to examine methods and technology that may increase efficient operation and management of the system(s) on which the required services are provided to the Purchaser, thus reducing operating and manpower costs and the overall cost to the Purchaser

29.2 The Contractor may, at any time during the Period of Performance, introduce Engineering Change Proposals (ECPs) offering innovations and/or technology insertion with a view towards reducing the overall cost to the Purchaser.

29.3 Any such ECP submitted shall cite this Clause as the basis of submission and provide the following information:

29.3.1 A detailed description of the technical changes proposed, the advantages, both long and short term, and an analysis of the risks of implementation;

29.3.2 A full analysis of the prospective savings to be achieved in both equipment and manpower, including, as appropriate, utility and fuel consumption and NATO manpower, travel, etc.;

29.3.3 A full impact statement of changes that the Purchaser would be required to make, if any, to its operational structure and management procedures;

29.3.4 A fully detailed proposal of any capital investment necessary to achieve the savings;

29.3.5 A schedule of how the changes would be implemented with minimal negative impact to on-going performance and operations.

NATO Communications and Information Agency
Agence OTAN d'information et de communication

IFB-CO-14091-EWFS

PROVIDE FUNCTIONAL SERVICES FOR ELECTRONIC WARFARE – INCREMENT 1

NATO Emitter Database Next Generation (NEDB-NG)

BOOK II - PART III

CONTRACT GENERAL PROVISIONS

INDEX OF CLAUSES

1. ORDER OF PRECEDENCE

In the event of any inconsistency in language, terms or conditions of the various parts of this Contract, precedence will be given in the following order:

1.1. The Signature Page;

1.2. The Contract Schedules, Part I;

1.3. The Contract Special Provisions, Part II;

1.4. The Contract General Provisions, Part III;

1.5. The Statement of Work, Part IV of the Contract;

1.6. The Annexes to the Statement of Work.

2. DEFINITIONS OF TERMS AND ACRONYMS

2.1. Assembly

An item forming a portion of equipment that can be provisioned and replaced as an entity and which normally incorporates replaceable parts or groups of parts.

2.2. Acceptance

Acceptance is the act by which the Contracting Authority recognises in writing that the delivered Work meets the Contract requirements.

2.3. Claims

A written demand or written assertion by one of the Parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of Contract terms, or other relief arising under or in relation to this Contract.

2.4. Clause

A provision of the Special or General Provisions of this Contract.

2.5. Codification Authority

The National Codification Bureau (NCB) or authorised agency of the country in which the Work is produced.

2.6. Commercial Off-the-Shelf Items (COTS)

The term “Commercially Off-the-Shelf Item (COTS)” means any item that:

- is a commercial item, customarily used by the general public, that has been sold, leased, or licensed to the general public or has been offered for sale, lease or license to the general public;
- is sold in substantial quantities in the commercial marketplace; and
- is offered to the Purchaser, under a contract or subcontract at any tier, without modification, in the same form in which it is sold in the commercial marketplace.

2.7. Component

A part or combination of parts, having a specific function, which can be installed or replaced only as an entity.

2.8. Contractor Background IPR

Any IPR owned by the Contractor or licensed by a third party to the Contractor which is not created in relation to or as the result of work undertaken for any purpose contemplated by the Contract and which is needed for the performance of the Contract or for the exploitation of Foreground IPR.

2.9. Correction

Elimination of a Defect.

2.10. Contract

The agreement concluded between the Purchaser and Contractor, duly signed by both contracting parties. The Contract includes the documents referred to in Clause 1 (Order of Preference).

2.11. Contracting Authority

The General Manager of the NCI Agency, the Director of Acquisition, the Chief of Contracts of the NCI Agency or the authorised representatives of the Chief of Contracts of the NCI Agency.

2.12. Contractor

The person or legal entity from a Participating Country which has signed this Contract and is a Party thereto.

2.13. Day

A calendar day

2.14. Defect

Any condition or characteristic in any Work furnished by the Contractor under the Contract that is not in compliance with the requirements of the Contract.

2.15. Deliverable

Any and all goods (including movable and immovable goods) to be delivered pursuant to the terms of this Contract including, without limitation, building, raw materials, components, intermediate Assemblies, Parts, end products, equipment, documentation, data, software.

2.16. Design Defect

Defect attributable to incompatibility, unsuitability or erroneous application of theory, drawings or formulae.

2.17. Effective Date of Contract (or "EDC")

The date upon which this Contract is deemed to start. Unless otherwise specified, a Contract enters into force on the date of the last signature of the Contract by the Parties.

2.18. Failed Component

A part or combination of parts, having a specific function, which can be installed or replaced only as an entity which ceases to perform in a manner consistent with its intended use and specifications of the Contract.

2.19. Foreground IPR

Any IPR created by the Contractor or any subcontractor of the Contractor in the course of or as the result of work undertaken for any purpose contemplated by the Contract.

2.20. IPR

Any intellectual property rights of any qualification irrespective of their stage of development or finalisation, including but not limited to patents, trademarks (registered of not), designs and models (registered or not) and applications for the same, copyright (including on computer software), rights in databases, know-how, confidential information and rights in records (whether or not stored on computer) which includes technical and other data and documents.

2.21. Manufacturing Defect

Defect attributable to improper manufacturing processes, testing or quality control procedures.

2.22. NATO

The North Atlantic Treaty Organisation. For the purpose of this contract, the term NATO includes NATO bodies, agencies, NATO nations and non-NATO nations to the extent that non-NATO nations are engaged in NATO Purposes.

2.23. NCI AGENCY (NCIA)

The NATO Communications and Information Agency. The NCIA is part of the NCIO. The General Manager of the Agency is authorised to enter into contracts on behalf of the NCI Organisation.

2.24. NATO COMMUNICATIONS AND INFORMATION ORGANISATION (NCIO)

The NATO Communications and Information Organisation. The NCI Organisation constitutes an integral part of the North Atlantic Treaty Organisation (NATO) The NCI Organisation is the legal personality from whence flows the authority of its agent, the NCI Agency, to enter into contracts.

2.25. NATO Purposes

Activities conducted by or on behalf of NATO to promote the common defence and common interests of NATO, such as, among others, NATO operations, NATO procurement, NATO training and NATO maintenance.

2.26. Part

An item of an assembly or sub-assembly, which is not normally further broken down.

2.27. Participating Country

A NATO member country that participates in financing the effort.

2.28. Parties

The Contracting Parties to this Contract, i.e., the Purchaser and the Contractor.

2.29. Purchaser

The NCI Organisation, as represented by the General Manager, NCI

Agency. The Purchaser is the legal entity who awards and administers the Contract on behalf of NATO and stands as one of the Contracting Parties.

2.30. Purchaser Background IPR

Any IPR owned by the Purchaser as of the Effective Date of Contract and which has been developed by, assigned to or licensed to the Purchaser prior to the Effective Date of Contract.

2.31. Purchaser Furnished Property

Any item of equipment, material, document, technical data, information and Software or any other item of property furnished by the Purchaser to the Contractor required or useful for the performance of the Contract. The Purchaser Furnished Property, if any, shall be detailed in the Contract.

2.32. Software (Computer Software)

A computer program comprising a series of instructions, rules, routines regardless of the media in which it is recorded, that allows or cause a computer to perform a specific operation or a series of operations.

2.33. Software Defect

Any condition or characteristic of Software that does not conform with the requirements of the Contract.

2.34. Sub-Assembly

A portion of an Assembly consisting of two or more parts that can be provisioned and replaced as an entity. The definition purposely excludes Components and/or Parts.

2.35. Sub-contract

Any agreement made by the Contractor with any third party in order to fulfil any part of the obligations under this Contract. Sub-contracts may be in any legal binding form, *e.g.*, contract, purchase order, etc.

2.36. Sub-contractor

Any person or legal entity directly or indirectly under Sub-contract to the Contractor in performance of this Contract.

2.37. Third Party IPR

Any IPR owned by a third party not being the Purchaser or the Contractor or its Subcontractor, which is needed for the performance of the Contract or for the exploitation of Foreground IPR. This includes, for example, third party

software, including open source software.

2.38. Work

Any deliverable, project design, labour or any service or any other activity to be performed by the Contractor under the terms of this Contract.

3. AUTHORITY

3.1. All binding contractual instruments and changes, including amendments, additions or deletions, as well as interpretation of and instructions issued pursuant to this Contract shall be valid only when issued in writing by the Purchaser and signed by the Contracting Authority only.

3.2. No direction which may be received from any person employed by the Purchaser or a third party shall be considered as grounds for deviation from any of the terms, conditions, specifications or requirements of this Contract except as such direction may be contained in an authorised amendment to this Contract or instruction duly issued and executed by the Contracting Authority. Constructive change may not be invoked by the Contractor as a basis for Claims under this Contract.

3.3. The entire agreement between the Parties is contained in this Contract and is not affected by any oral understanding or representation, whether made previously to or subsequently to this Contract.

3.4. Personal notes, signed minutes of meetings, comments to delivered documentation and letters, e-mails and informal messages from project or other Purchaser staff which may indicate the intent and willingness to make changes to the Contract, do not implement the change to the Contract and shall not be used as a basis for claiming change to the Contract by the Contractor.

4. APPROVAL AND ACCEPTANCE OF CONTRACT TERMS

4.1. By his signature of the Contract, the Contractor certifies that he has read and unreservedly accepts and approves of all terms and conditions, specifications, plans, drawings and other documents which form part of and/or are relevant to the Contract. The Contractor further agrees that the terms of the Contract take precedence over any proposals or prior commitments made by the Contractor in order to secure the Contract. Contractor also hereby waives any and all rights to invoke any of the Contractor's general and special terms and conditions of sales and/or supply.

5. LANGUAGE

5.1. All written correspondence, reports, documentation and text of drawings delivered to the Purchaser by the Contractor shall be in the English language.

6. AUTHORISATION TO PERFORM/CONFORMANCE TO NATIONAL LAWS AND REGULATIONS

6.1. The Contractor warrants that he and his Sub-contractors are duly authorised to operate and do business in the country or countries in which this Contract is to be performed and that he and his Sub-contractors have obtained or will obtain all necessary licences and permits required in connection with the Contract. No claim for additional monies with respect to any costs or delay to obtain the authorisations to perform shall be made by the Contractor.

6.2. The Contractor acknowledges that he and his Sub-contractors are responsible during the performance of this Contract for ascertaining and complying with all applicable laws and regulations, including without limitation: labour standards, environmental laws, health and safety regulations and export controls laws and regulations in effect at the time of Contract signature or scheduled to go into effect during Contract performance. Failure to fully ascertain and comply with such laws, regulations or standards shall not be the basis for claims for change to the specifications, terms, conditions or monetary value of this Contract.

7. FIRM FIXED PRICE CONTRACT

7.1. This is a Firm Fixed Price Contract. The Firm Fixed Price of this Contract is as stated on the signature page of the Contract or any amendments thereto. The Purchaser assumes no liability for costs incurred by the Contractor in excess of the stated Firm Fixed Price except as may be authorised under certain provisions of this Contract.

8. PERFORMANCE GUARANTEE

8.1. As a guarantee of performance under the Contract, the Contractor shall deposit with the Purchaser within thirty (30) calendar days from the Effective Date of Contract a bank guarantee (the “Performance Guarantee”) denominated in the currency of the Contract, to the value of ten per cent (10%) of the total Contract price.

8.2. The Performance Guarantee, the negotiability of which shall not elapse before the expiration of the warranty period, or such other period as may be specified in the Contract, shall be made payable to the Purchaser and shall be in the form of certified cheques or a Standby Letter of Credit subject to the agreement of the Purchaser. In the case of a Standby Letter of Credit, payment shall be made to the Purchaser without question and upon first

demand by the Purchaser against a certificate from the Purchaser's Contracting Authority that the Contractor has not fulfilled its obligations under the Contract. The Contractor shall have no right to enjoin or delay such payment.

8.3. Certified Cheques issued to fulfil the requirements of the Performance Guarantee will be cashed by the Purchaser upon receipt and held in the Purchaser's account until the term of the Performance Guarantee has expired.

8.4. The standby letter of credit shall be subject to Belgian Law and shall be issued by (i) a Belgian bank, (ii) the Belgian subsidiary of a foreign bank licensed to provide financial services in Belgium; or (iii) an insurance company licensed to do business in Belgium and belonging to a Belgian banking institution provided the banking institution guarantees explicitly the demand for payment, unless otherwise specified by the Purchaser.

8.5. The Contractor shall request in writing relief from the Performance Guarantee upon expiration of the warranty period or such other period as may be specified in the Contract and such relief may be granted by the Purchaser.

8.6. The Contractor shall be responsible, as a result of duly authorised adjustments in the total contract price and/or period of performance by the Purchaser, for obtaining a commensurate extension and increase in the Performance Guarantee, the value of which shall not be less than ten per cent (10%) of the total contract price (including all amendments), and for depositing such guarantee with the Purchaser, within thirty (30) calendar days from the effective date of aforesaid duly authorised adjustment.

8.7. The failure of the Contractor to deposit and maintain such Performance Guarantee with the Purchaser within the specified time frame, or any extension thereto granted by the Purchaser's Contracting Authority, is a material breach of the Contract terms and conditions subject to the provisions of the Contract regarding Termination for Default.

8.8. The rights and remedies provided to the Purchaser under the present Clause are in addition to any other rights and remedies provided by law or under this Contract. The certificate described in Clause 8.2 above shall not be regarded as a Termination for Default and this Clause is in addition to and separate from the Clause of the Contract detailing termination for default.

8.9. If the Contractor elects to post the Performance Guarantee by Standby Letter of Credit, the form of the document shall be substantially as follows:

PERFORMANCE GUARANTEE STANDBY LETTER OF CREDIT

Standby Letter of Credit Number: _____

Issue Date: _____

Initial Expiry Date: _____

Final Expiry Date: _____

Beneficiary: NCI Agency, Financial Management,
Boulevard Leopold III, B-1110, Brussels
Belgium

1. We hereby establish in your favour our irrevocable standby letter of credit number {number} by order and for the account of (NAME AND ADDRESS OF CONTRACTOR) in the amount of _____. We are advised this undertaking represents fulfilment by (NAME OF CONTRACTOR) of certain performance requirements under Contract No. _____ dated _____ between the NCI Agency ("NCIA and (NAME OF CONTRACTOR).

2. We hereby engage with you that drafts drawn under and in compliance with the terms of this letter of credit will be duly honoured upon presentation of documents to us on or before the expiration date of this letter of credit.

3. Funds under this letter of credit are available to you without question or delay against presentation of a certificate signed by the NCI Agency Contracting Officer which states:

> "(NAME OF CONTRACTOR) has not fulfilled its obligations under Contract No. _____ dated _____ between NCI Agency and (NAME OF CONTRACTOR) (herein called the "Contract"), and the NCI Agency, as beneficiary, hereby draws on the standby letter of credit number _____ in the amount denominated in the currency of the Contract, Amount up to the maximum available under the LOC), such funds to be transferred to the account of the Beneficiary number _____(to be identified when certificate is presented)."

Such certificate shall be accompanied by the original of this letter of credit.

4. This Letter of Credit is effective the date hereof and shall expire at our office located at ____(Bank Address)_____ on _____. All demands for payment must be made prior to the expiry date.

5. It is a condition of this letter of credit that the expiry date will be automatically extended without amendment for a period of one (1) year from the current or any successive expiry date unless at least 90 (ninety) calendar days prior to the then current expiry date we notify you by registered mail and notify (NAME OF CONTRACTOR) that we elect not to extend this letter of credit for such additional period. However, under no circumstances will the expiry date extend beyond _____ ("Final Expiry Date") without amendment.

6. We may terminate this letter of credit at any time upon 90 (ninety) calendar days notice furnished to both (NAME OF CONTRACTOR) and the NCI Agency by registered mail.

7. In the event we (the issuing bank) notify you that we elect not to extend the expiry date in accordance with paragraph 6 above, or, at any time, to terminate the letter of credit, funds under this credit will be available to you without question or delay against presentation of a certificate signed by the NCI Agency Contracting Officer which states:

> "The NCI Agency has been notified by {issuing bank} of its election not to automatically extend the expiry date of letter of credit number {number} dated {date} pursuant to the automatic renewal clause (or to terminate the letter of credit). As of the date of this certificate, no suitable replacement letter of credit, or equivalent financial guarantee has been received by the NCI Agency from, or on behalf of (NAME OF CONTRACTOR). (NAME OF CONTRACTOR) has, therefore, not fulfilled its obligations under Contract No. _____ dated _____ between NCI Agency and (NAME OF CONTRACTOR), and the NCI Agency, as beneficiary, hereby draws on the standby letter of credit number _____ in the amount of (Amount up to the maximum available under the LOC), such funds to be transferred to the account of the Beneficiary number _____ (to be identified when certificate is presented)."

Such certificate shall be accompanied by the original of this letter of credit and a copy of the letter from the issuing bank that it elects not to automatically extend the standby letter of credit, or terminating the letter of credit.

8. The Beneficiary may not present the certificate described in paragraph 7 above until 20 (twenty) calendar days prior to a) the date of expiration of the letter of credit should {issuing bank} elect not to automatically extend the expiration date of the letter of credit, b) the date of termination of the letter of credit if {issuing bank} notifies the Beneficiary that the letter of credit is to be terminated in accordance with paragraph 6 above.

9. Multiple partial drawings are allowed to the maximum value of the standby letter of credit.

10. This letter of credit sets forth in full the terms of our undertaking, and this undertaking shall not in any way be modified, amended, or amplified by reference to any document, instrument, or agreement referred to herein (except the International Standby Practices (ISP 98) hereinafter defined) or in which this letter of credit is referred to or to which this letter of credit relates, and any such reference shall not be deemed to incorporate herein by reference any document, instrument, or agreement.

11. This Letter of Credit is subject to The International Standby Practices-ISP98

(1998 Publication) International Chamber of Commerce Publication No.590.

9. PARTICIPATING COUNTRIES

9.1. Unless prior written authorisation of the Purchaser has been obtained, none of the Work, shall be performed other than by firms from and within NATO Participating Countries. Unless otherwise specified in the Contract Special Provisions, the Participating Countries are the twenty-eight (28) Member Nations of the North Atlantic Treaty Organisation.

9.2. Unless prior written authorisation of the Purchaser has been obtained, no material or items of equipment down to and including identifiable Sub-Assemblies shall be manufactured or assembled by a firm other than from and within a NATO Participating Country.

9.3. The Contractor shall not place any Sub-contracts outside the NATO Participating Countries without the prior written authorisation of the Purchaser.

9.4. Unless prior written authorisation of the Purchaser has been obtained, the intellectual property rights for all software and documentation incorporated by the Contractor and/or its Sub-contractors into the Work shall vest with persons or legal entities from and within NATO participating nations and no royalties or licence fees for such software and documentation shall be paid by the Contractor to any source that does not reside within a NATO participating nation.

9.5. Any modification in the nationality, ownership and/or change of control of the Contractor and/or its Sub-contractor(s) shall be immediately notified in writing to the Purchaser with all necessary details to allow the Purchaser to determine whether or not the Contractor and/or its Sub-contractors continue to comply with the Clauses above. Non-compliance with the Clauses above, by the Contractor and/or its Subcontractor may constitute ground for termination of this Contract under Clause 39 (Termination for Default).

10. SUB-CONTRACTS

10.1. The Contractor shall place and be responsible for the administration and performance of all Sub-contracts including terms and conditions which he deems necessary to meet the requirements of this Contract in full.

10.2. Prior to the Sub-contractors being given access to any classified information, the Contractor shall ensure that any Sub-contractor that has a need to access classified information for the performance of any part of this Contract has been granted the appropriate facility and personnel security clearances by the Sub-contractor's national authorities and that such clearances are still in effect at the time the information is disclosed and remains in effect throughout the performance of the work to be carried out under the Sub-contract concerned.

10.3. The Contractor shall seek the approval in writing of the Purchaser prior to the placing of any Sub-contract if:

10.3.1. the Sub-contract was not part of the Contractor's original proposal; and

10.3.2. the value of the Sub-contract is known or estimated to exceed 15 per cent of the total Contract value; or

10.3.3. the Sub-contract is one of a number of Sub-contracts with a single Sub-contractor for the same or related Work under this Contract that in the aggregate are known or expected to exceed 15 per cent of the total Contract value.

10.4. The Contractor shall inform the Purchaser of any change in Sub-contractors for Sub-contracts of a value known or estimated to exceed 15 per cent of the total Contract value.

10.5. The Contractor shall submit a copy of any such proposed Sub-contract when seeking approval to the Contracting Authority but such approval by the Contracting Authority shall in no way relieve the Contractor of his responsibilities to fully achieve the contractual and technical requirements of this Contract.

10.6. The Contractor shall, as far as practicable, select Sub-contractors on a competitive basis consistent with the objectives and requirements of the Contract.

11. SECURITY

11.1. The Contractor shall comply with all security measures as are prescribed by the Purchaser and the national security authority or designated security agency of each of the NATO countries in which the Contract is being performed. The Contractor shall be responsible for the safeguarding of classified information, documentation, material and equipment entrusted to him or generated by him in connection with the performance of the Contract.

11.2. In particular the Contractor undertakes to:

11.2.1. appoint an official responsible for supervising and directing security measures in relation to the Contract and communicating details of such measures to the Purchaser on request;

11.2.2. maintain, preferably through the official responsible for security measures, a continuing relationship with the national security authority or designated security agency charged with ensuring that all NATO classified information involved in the Contract is properly safeguarded;

11.2.3. abstain from copying by any means, without the authorisation of the Purchaser, the national security authority or designated security agency, any classified documents, plans, photographs or other classified material entrusted to him;

11.2.4. furnish, on request, information to the national security authority or designated security agency pertaining to all persons who will be required to have access to NATO classified information;

11.2.5. maintain at the work site a current record of his employees at the site who have been cleared for access to NATO classified information. The record should show the date of issue, the date of expiration and the level of clearance;

11.2.6. deny access to NATO classified information to any person other than those persons authorised to have such access by the national security authority or designated security agency;

11.2.7. limit the dissemination of NATO classified information to the smallest number of persons (“need to know basis”) as is consistent with the proper execution of the Contract;

11.2.8. comply with any request from the national security authority or designated security agency that persons entrusted with NATO classified information sign a statement undertaking to safeguard that information and signifying their understanding both of their obligations under national legislation affecting the safeguarding of classified information, and of their comparable obligations under the laws of the other NATO nations in which they may have access to classified information;

11.2.9. report to the national security authority or designated security agency any breaches, suspected breaches of security, suspected sabotage, or other matters of security significance which would include any changes that may occur in the ownership, control or management of the facility or any changes that affect the security arrangements and security status of the facility and to make such other reports as may be required by the national security authority or designated security agency, e.g. reports on the holdings of NATO classified material;

11.2.10. apply to the Purchaser for approval before Sub-contracting any part of the work, if the Sub-contract would involve that the Sub-contractor would have access to NATO classified information, and to place the Sub-contractor under appropriate security obligations no less stringent than those applied to his own contract;

11.2.11. undertake not to utilise, other than for the specific purpose of the Contract, without the prior written permission of the Purchaser or his authorised representative, any NATO classified information furnished

to him, including all reproductions thereof in connection with the Contract, and to return all NATO classified information referred to above as well as that developed in connection with the Contract, unless such information has been destroyed, or its retention has been duly authorised with the approval of the Purchaser. Such NATO classified information will be returned at such time as the Purchaser or his authorised representative may direct;

11.2.12. classify any produced document with the highest classification of the NATO classified information disclosed in that document.

12. RELEASE OF INFORMATION

12.1. Except as otherwise specified elsewhere in the Contract and to the extent that it is demonstratively unavoidable and without prejudice to the Clause 11 (Security), the Contractor and/or his employees shall not, without prior authorisation from the Purchaser, release to third parties any information pertaining to this Contract, its subject matter, performance there under or any other aspect thereof.

12.2. The Contractor shall seek the prior written approval of the Purchaser before publishing any press release or disclosing any other information, orally or in writing, in relation to the Contract. The approval of the Purchaser shall be required for both the opportunity and the content of the information.

12.3. This provision shall remain in effect after the termination of the Contract and shall cease to apply to any particular piece of information once that information becomes public knowledge other than through an act, default or omission of the Contractor or its Sub-contractors.

13. PURCHASER FURNISHED PROPERTY

13.1. The Purchaser shall deliver to the Contractor, for use only in connection with this Contract, the Purchaser Furnished Property at the times and locations stated in the Contract. In the event that Purchaser Furnished Property is not delivered by such time or times stated in the Schedule, or if not so stated, in sufficient time to enable the Contractor to meet such delivery or performance dates the Purchaser shall, upon timely written request made by the Contractor, and if the facts warrant such action, equitably adjust any affected provision of this Contract pursuant to Clause 16 (Changes).

13.2. In the event that Purchaser Furnished Property is received by the Contractor in a condition not suitable for its intended use, the Contractor shall immediately notify the Purchaser. The Purchaser shall within a reasonable time of receipt of such notice replace, re-issue, authorise repair or otherwise issue instructions for the disposal of Purchaser Furnished Property agreed to be unsuitable. The Purchaser shall, upon timely written request of the Contractor, equitably adjust any affected provision of this Contract pursuant to Clause 16 (Changes).

13.3. Title to Purchaser Furnished Property will remain in the Purchaser. The Contractor shall maintain adequate property control records of Purchaser Furnished Property in accordance with sound industrial practice and security regulations.

13.4. Unless otherwise provided in this Contract, the Contractor, upon delivery to him of any Purchaser Furnished Property, assumes the risk of, and shall be responsible for, any loss thereof or damage thereof except for reasonable wear and tear, and except to the extent that Purchaser Furnished Property is consumed in the performance of this Contract.

13.5. Upon completion of this Contract, or at such earlier dates as may be specified by the Purchaser, the Contractor shall submit, in a form acceptable to the Purchaser, inventory schedules covering all items of Purchaser Furnished Property.

13.6. The inventory shall note whether:

13.6.1. The property was consumed or incorporated in fabrication of final deliverable(s);

13.6.2. The property was otherwise destroyed;

13.6.3. The property remains in possession of the Contractor;

13.6.4. The property was previously returned

13.7. The Contractor shall prepare for shipment, deliver DDP at a destination agreed with the Purchaser, or otherwise dispose of Purchaser Furnished Property as may be directed or authorised by the Purchaser. The net proceeds of any such disposal shall be credited to the Contract price or paid to the Purchaser in such other manner as the Purchaser may direct.

13.8. The Contractor shall not modify any Purchaser Furnished Property unless specifically authorised by the Purchaser or directed by the terms of the Contract.

13.9. The Contractor shall indemnify and hold the Purchaser harmless against claims for injury to persons or damages to property of the Contractor or others arising from the Contractor’s possession or use of the Purchaser Furnished Property. The Contractor shall indemnify the Purchaser for damages caused by the Contractor to the Purchaser, its property and staff and arising out of the Contractor’s use of the Purchaser Furnished Property.

14. CONTRACTOR'S PERSONNEL WORKING AT PURCHASER'S FACILITIES

14.1. The term "Purchaser Facilities" as used in this Clause shall be deemed to include sites, property, utilities, ships or vessels and the term "Facility

Representative" shall be deemed to refer to the authority designated by the Purchaser responsible for the site, property, utility, ship or vessel.

14.2. The Facility Representative shall provide such available administrative and technical facilities for Contractor's personnel working at Purchaser's Facilities for the purpose of the Contract as in the opinion of the Facility Representative may be necessary for the effective and economical discharge of Work. The Facility Representative shall also determine whether these facilities will be provided free of charge to the Contractor or determine what charges are payable. The Contractor shall have no claim against the Purchaser for any such additional cost or delay or any additional cost or delay occasioned by the closure for holidays of said facilities, or other reasons, where this is generally published or made known to the Contractor by the Purchaser or his authorised representatives.

14.3. The Contractor shall, except as otherwise provided for in the Contract, make good or, at the option of the Purchaser, pay compensation for all damage occurring to any Purchaser's Facilities occasioned by the Contractor, his servants, agents or Sub-contractors, arising from his or their presence and activities in, and use of, the Purchaser's Facilities; provided that this Condition shall not apply to the extent that the Contractor is able to show that any such damage was not caused or contributed to, by his neglect, or default or the neglect or default of his servants, agents or Sub-contractors, or by any circumstances within his or their control.

14.4. All property of the Contractor while at a Purchaser Facility shall be at the risk of the Contractor, and the Purchaser shall accept no liability for any loss or damage, except to the extent that any loss or damage is the result of a wilful act or gross negligence on the part of the Purchaser's employees or agents.

15. HEALTH, SAFETY AND ACCIDENT PREVENTION

15.1. If the Purchaser notifies the Contractor in writing of any non-compliance in the performance of this Contract with safety and health rules and requirements prescribed on the date of this Contract by applicable national or local laws, ordinances and codes, and the Contractor fails to take immediate corrective action, the Purchaser may order the Contractor to stop all or part of the Work until satisfactory corrective action has been taken. Such an order shall not entitle the Contractor to an adjustment of the Contract price or other reimbursement for resulting increased costs, or to an adjustment of the delivery or performance schedule.

16. CHANGES

16.1. The Purchaser may at any time, by written order of the Contracting Authority designated or indicated to be a change order ("Change Order") make changes within the general scope of this Contract, including, without

limitation, in any one or more of the following:

16.1.1. Specifications (including drawings and designs);

16.1.2. Method and manner of performance of the work, including engineering standards, quality assurance and configuration management procedures;

16.1.3. Marking and method of shipment and packing;

16.1.4. Place of delivery;

16.1.5. Amount, availability and condition of Purchaser Furnished Property.

16.2. The Purchaser shall submit a proposal for Contract amendment describing the change to the Contract.

16.3. If any such Change Order causes an increase in the Contractor's cost of, or the time required for, the performance of any part of the Work under this Contract, whether or not changed by any such order, the Contractor shall submit a written proposal for adjustment to the Purchaser describing the general nature and amount of the proposal for adjustment. The Contractor shall submit this proposal for adjustment within thirty (30) days after receipt of a written Change Order under 16.1 above unless this period is extended by the Purchaser.

16.4. If any such Change Order causes a decrease in the Contractor's cost of, or the time required for, the performance of any part of the Work under this Contract, whether or not changed by any such order, the Purchaser shall submit a proposal for adjustment within thirty (30) days from the issuance of the Change Order by submitting to the Contractor a written statement describing the general nature and amount of the proposal for adjustment.

16.5. Where the cost of property made obsolete or in excess as a result of a change is included in the Contractor's claim for adjustment, the Purchaser shall have the right to prescribe the manner of disposition of such property.

16.6. The Purchaser reserves the right to reject the introduction of the change, after the evaluation of the change proposal, even if the Purchaser initiated such change.

16.7. Failure to agree to any requested adjustment shall be a dispute within the meaning of the Clause 41 (Disputes). However, nothing in this Clause shall excuse the Contractor from proceeding with the Contract as changed.

16.8. No proposal for adjustment by the Contractor for an equitable adjustment shall be allowed if asserted after final payment and acceptance under this Contract.

16.9. Any other written or oral order (which, as used in this paragraph includes direction, instruction, interpretation, or determination) from the Purchaser that causes a change shall be treated as a Change Order under this Clause, provided, that the Contractor gives the Purchaser a written notice within thirty (30) Days after receipt of such order stating (i) the date, circumstances, and source of the order; (ii) that the Contractor regards the order as a Change Order; and (iii) a detailed cost and time analysis of the impact of the change, and that the Order is accepted in writing by the Purchaser as a Change Order. The timely written notice requirement, as detailed above, remains in force in all cases, even where, for example, the Purchaser has positive knowledge of the relevant facts.

16.10. All tasks and activities carried out by the Contractor in relation to the processing of the Change Order or in relation to this Clause shall form part of the Contractor's routine work and cannot be charged as additional work.

17. STOP WORK ORDER

17.1. The Purchaser may, at any time, by written order to the Contractor, require the Contractor to stop all, or any part, of the Work called for by this Contract for a period of ninety (90) days after the order is delivered to the Contractor, and for any further period to which the Parties may agree.

17.2. Any such stop work order shall be specifically identified as a stop work order issued pursuant to this Clause (the "Stop Work Order"). The Stop Work Order may include a description of the Work to be suspended, instructions concerning the Contractor's issuance of further orders for material or services, guidance to the Contractor on actions to be taken on any Sub-contracts and any suggestion to the Contractor for minimizing costs.

17.3. Upon receipt of such a Stop Work Order, the Contractor shall forthwith comply with its terms and take all reasonable steps to minimise costs incurred allocable to the Work covered by the Stop Work Order during the period of work stoppage. Within a period of ninety (90) days after a Stop Work Order is delivered to the Contractor, or within any extension of that period to which the Parties shall have agreed, the Purchaser shall either:

17.3.1. cancel the Stop Work Order; or

17.3.2. terminate the Work covered by such Stop Work Order as provided in Clause 40 (Termination for Convenience of the Purchaser).

17.4. If a Stop Work Order issued under this Clause is cancelled or the period of the Stop Work Order or any extension thereof expires, the Contractor shall resume work.

17.5. An equitable adjustment shall be made in the delivery schedule or Contract price, or both, and the Contract shall be modified in writing accordingly, if:

17.5.1. the Stop Work Order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this Contract, and

17.5.2. the Contractor asserts a Claim for such adjustment within thirty (30) days after the end of the period of work stoppage; provided that, if the Purchaser decides the facts justify such action, he may receive and act upon any such claim asserted at a later date but prior to final payment under this Contract.

17.6. If a Stop Work Order is not cancelled and the Work covered by such Stop Work Order is terminated for the convenience of the Purchaser the reasonable costs resulting from the Stop Work Order shall be allowed in arriving at the termination settlement.

18. CLAIMS

18.1. The Contractor shall specifically identify the Contract Clause(s) under which the Claim(s) is/are based.

18.2. Claims shall be specifically identified as such and submitted:

18.2.1. within the time specified in the Clause under which the Contractor alleges to have a Claim. If no time is specified in the Clause under which the Contractor intends to base his Claim, the time limit shall be sixty (60) days from the date the Contractor has knowledge or should have had knowledge of the facts on which he bases his Claim; and

18.2.2. before final payment, pursuant to and with the exceptions specified in Clause 33 of these General Provisions entitled" Release from Claims".

18.2.3. Section 18.2.2 above shall only apply to those Claims for which the Contractor could not have had earlier knowledge and were not foreseeable.

18.3. The Contractor shall be foreclosed from his Claim unless he presents complete documentary evidence, justification and costs for each of his Claims within ninety (90) calendar days from the assertion date of such Claims. Claims shall be supported by specifically identified evidence (including applicable historical and planned cost and production data from the Contractor's books and records). Opinions, conclusions or judgmental assertions not supported by such evidence will be rejected by the Purchaser.

18.4. An individual breakdown of cost is required for each element of Contractor's Claims at the time of claim submission or for any material revision of the Claim.

18.5. The Contractor shall present, at the time of submission of a Claim, an

attestation as follows:

> I .....the responsible senior company official authorised to commit the ..... with respect to its claims dated ..... being duly sworn, do hereby depose and say that: (i) the facts described in the claim are current, complete and accurate; and (ii) the conclusions in the claim accurately reflect the material damages or contract adjustments for which the Purchaser is allegedly liable.
>
> .....…….
> ……..
>
> SIGNATURE Date

18.6. Failure to comply with any of the above requirements shall result in automatic foreclosure of the Claim. This foreclosure takes effect in all cases and also where, for example, the Claim is based on additional orders, where the facts are known to the Purchaser, where the Claim is based on defective specifications of the Purchaser or an alleged negligence in the pre-contractual stage.

18.7. Claims submitted by the Contractor will be reviewed by the Contracting Authority. The Contracting Authority will respond within sixty (60) days with a preliminary decision, based on an assessment and evaluation of the facts presented by the Parties, as to whether the Contracting Authority considers the Claim to have merit for consideration. If the preliminary decision of the Contracting Authority is that the Claim, as submitted is without merit, the Contractor shall have fourteen (14) days to present a rebuttal to the Contracting Authority and request reconsideration of the Contracting Authority's decision. Within thirty (30) days receipt of the Contractor's request for reconsideration, the Contracting Authority will issue a decision. The time requirements stated herein may be extended by the Contracting Authority in order to accommodate additional preparation efforts and fact finding discussions but the Contracting Authority may not unreasonable extend such a period. A decision that the submitted claim is without merit will be identified as such, will be issued in writing by the Contracting Authority and will be conclusive. A decision may only be challenged by the Contractor through the Disputes provisions described herein.

18.8. A decision by the Purchaser that the claim has merit will result in a Contracting Authority request to enter into negotiations with the Contractor to arrive at a mutually agreed fair and equitable settlement. The Contracting

Authority's decision will contain a target date for the commencement and conclusion of such operations. If the Parties are unable to arrive at an agreement on a fair and reasonable settlement by the target date for conclusion, or any extension thereto made by the Contracting Authority, the latter may declare that negotiations are at an impasse and issue a preliminary decision as to the fair and reasonable settlement and the reasons supporting this decision. The Contractor shall have a period of thirty (30) days to present a rebuttal to the Contracting Authority and request reconsideration of the Contracting Authority's decision. Within sixty (60) days of receipt of the Contractor's request for reconsideration, the Contracting Authority will issue its decision on the request for reconsideration. This timeframe will be respected unless an authorisation is needed from a NATO or other authority, the schedule for which is beyond the Contracting Authority's control. A decision of the Contracting Authority on the reconsideration of the matter will be identified as such, will be issued in writing by the Contracting Authority and will be conclusive. A decision on the reconsideration may only be challenged by the Contractor through the Disputes provisions described herein.

18.9. No Claim arising under this Contract may be assigned by the Contractor without prior approval of the Purchaser.

18.10. The Contractor shall proceed diligently with performance of this Contract, pending final resolution of any request for relief, claim appeal, or action arising under the Contract, and comply with any decision of the Contracting Authority.

19. PRICING OF CHANGES, AMENDMENTS AND CLAIMS

19.1. Contractor's pricing proposals for Changes, amendments and Claims shall be priced in accordance with the Purchaser's Pricing Principles (Annex 1 hereto and the sample spreadsheet and its " Instructions to Complete" at Appendix 1) or the national government pricing rules and regulations for the Contractor's own country, where in force. The Contractor shall provide cost information accompanied by appropriate substantiation as required by the Purchaser in accordance with Purchaser's Pricing Principles, or such other format as may be agreed between the Contractor and the Purchaser.

19.2. With respect to Clause 19.1 above, when the price or price adjustment is based on adequate price competition, established catalogue or market price of commercial items sold in substantial quantities to the general public, or prices set by law or regulation, the Contractor shall be responsible for substantiation of such cases to the satisfaction of the Purchaser.

19.3. For the purposes of verifying that the cost or pricing data submitted in conjunction with Clause 19.1 above are accurate, complete and current, the Purchaser or any Purchaser authorised representative shall have the right of access to the Contractor's facilities to examine, until the expiration of three (3) years from the date of final payment of all sums due under the

Contract:

19.3.1. those books, records, documents and other supporting data which will permit adequate evaluation and verification of the cost or pricing data submitted; and/or

19.3.2. the computations and projections which were available to the Contractor as of the date of the Contractor price proposal.

19.4. The Contractor, subject to the provisions of this Clause, shall require Sub-contractors to provide to the Purchaser, either directly or indirectly:

19.4.1. cost or pricing data;

19.4.2. access to Sub-contractor's facilities and records for the purposes of verification of such cost or pricing data; and

19.4.3. a Certificate of Current Cost or Pricing Data, when required.

19.5. If any price, including profit, negotiated in connection with this Contract was proposed, taking any of the following into account: :

19.5.1. the Contractor furnished cost or pricing data which was not complete, accurate and current as certified in the Contractor's Certificate of Current Cost or Pricing Data provided in accordance with Clause 19.6 below;

19.5.2. a Sub-contractor, pursuant to Clause 19.4 above or any Sub-contract clause therein required, furnished cost or pricing data which was not complete, accurate and current as certified in the Sub-contractor's Certificate of Current Cost or Pricing Data;

19.5.3. a Sub-contractor or prospective Sub-contractor furnished cost or pricing data which was required to be complete, accurate and current and to be submitted to support a Sub-contract cost estimate furnished by the Contractor but which was not complete, accurate and current as of the date certified in the Contractor's Certificate of Current Cost or Pricing Data; or

19.5.4. the Contractor or a Sub-contractor or prospective Sub-contractor furnished any data, not within 19.5.1 through 19.5.3 above, which, as submitted, was not complete, accurate and current;

then the price and/or cost shall be adjusted accordingly and the Contract shall be modified in writing as may be necessary to reflect such.

19.6. At the time of negotiating any price, including profit, which is based upon the submission of cost or pricing data by the Contractor, the Contractor shall be required to submit a certificate of current cost or pricing data (“Certificate”).

19.6.1. Such Certificates will certify that, to the best of the Contractor's knowledge and belief, cost or pricing data submitted to the Purchaser in support of any proposal for a price, price adjustment or

claim, are accurate, complete and current, as per the completion of the negotiations or, in the case of a claim, as per the submission date of the claim.

19.6.2. All such Certificates shall be in the format shown below and shall be dated and signed by a responsible officer of the company:

CERTIFICATE OF CURRENT COST OR PRICING DATA

This is to certify that cost or pricing data as submitted, either actually or by specific identification in writing to the Purchaser or his representative in support of.....*(Claim, Amendment, ECP#, etc.,)* are accurate, complete and current as of .....*(Date).*

By submitting the price proposal, the Contractor/sub-Contractor or prospective sub-Contractor grant the Purchaser or his authorized representative(s) the right to examine those records, data and supporting information, used as a basis for the pricing submitted.

_____
Name of Company

_____
Signature

_____
Printed Name of Signatory

_____
Title of Signatory

_____
Date of Signature

19.6.3. The Contractor shall insert the substance of this Clause 19.7 in each Sub-contract.

19.7. For all additional or follow-up agreements which are made for Work which are furnished to the Purchaser without competition, the Contractor shall offer prices on a “Preferred Customer” basis, that is offer prices which are as favourable as those extended to any Government, Agency, Company, Organisation or individual purchasing or handling like quantities of equipment and/or Parts covered by the Contract under similar conditions. In the event that prior to completing delivery under this Contract the Contractor offers any of such items in substantially similar quantities to any customer at prices lower than those set forth herein, the Contractor shall so notify the Purchaser and the prices of such items shall be correspondingly reduced by a supplement to this Contract. Price in this sense means "Base Price" prior to applying any bonus, export tax reduction, turn-over tax exemptions and other reductions based on National Policies.

20. NOTICE OF SHIPMENT AND DELIVERY

20.1. Except as may be specified in the Special Contract Provisions, delivery of all items under this Contract shall be made by the Contractor on the basis of “Delivery Duty Paid” (DDP) as defined by the INCOTERMS 2000 (International Chamber of Commerce Publication No. 560). It shall be noted, however, that because the Purchaser is exempted from direct taxes and duty as set forth in Clause 26 (Taxes and Duties), there is no duty to be paid by the Contractor.

20.2. "Delivery" of required Work by the Contractor does not constitute "Acceptance" by the Purchaser for purposes of meeting the requirements of the Contract Schedule where Purchaser acceptance is the stated payment or schedule milestone.

20.3. Thirty (30) Days, or such other period as specified in the Contract, prior to the delivery of any shipment of Work, the Contractor shall give prepaid notice of shipment to the Purchaser. The Notice of Shipment shall contain, as appropriate, the request for customs form 302, or equivalent document, which shall enable any carrier to conduct duty free import/export clearance through customs for the Purchaser on behalf of NATO.

20.4. The customs form 302 is an official customs clearance declaration issued in advance of shipment by the Purchaser to provide certified information as to the duty free import, export, or transit of NATO consignments between NATO countries.

20.5. The Notice of Shipment and request for Form 302 or equivalent document shall contain the following information:

20.5.1. Purchaser's Contract number;

20.5.2. Contract item number, designation and quantities;

20.5.3. destination;

20.5.4. number and description of the packages (gross and net weight);

20.5.5. description of the goods and their value (for custom purpose only, not commercial value)

20.5.6. consignor's name and address;

20.5.7. consignee's name and address;

20.5.8. method of shipment (i.e. road, rail, sea, air, etc.);

20.5.9. name and address of freight forwarder.

20.6. Forwarding Agents, Carriers or other responsible organisations shall be informed by the Contractor of the availability of Form 302 or equivalent document and how the form shall be utilised to avoid the payment of custom duties. Form 302 or equivalent document shall be incorporated in all shipping documents provided to the carrier.

20.7. Upon receipt of the Notice of Shipment from the Contractor, the Purchaser may require the Contractor to send copies of the Notice of Shipment to the receiving parties and the Contractor shall comply with this requirement.

21. INSPECTION AND ACCEPTANCE OF WORK

21.1. For the purposes of this Clause, Work does not include documentation which is addressed in Clause 22 (Inspection and Acceptance of Documentation) hereafter.

21.2. Unless otherwise specifically provided for in the Contract, all Work and all Parts and equipment incorporated in the Work are to be new and of the most suitable grade of their respective kinds for the purpose, notwithstanding the requirements for testing, inspection and performance as required under this Contract. All workmanship shall be as specified under the Contract or, if no workmanship standards are specified, best commercial or “state of the art” complying with relevant (National and International) standards.

21.3. All Work may be subject to inspection and test by the Purchaser or his authorised representative(s) to the extent practicable at all times and places prior to Acceptance, including the period of manufacture, or after delivery or as otherwise specified in the Contract. For the purposes of inspection and testing the Purchaser may delegate as his representative the authorised National Quality Assurance Representative (NQAR) in accordance with STANAG 4107.

21.4. No representative or NQAR appointed by the Purchaser for the purpose of determining the Contractor's compliance with the technical requirements of the Contract shall have the authority to change any of the specifications. Such changes may only be made by the Contracting Authority in writing in accordance with Clause 16 (Changes).

21.5. The presence or absence of an NQAR or other Purchaser representative

shall not relieve the Contractor from conforming to the requirements of this Contract.

21.6. Acceptance or rejection of the Work shall be made as promptly as practicable after delivery, except as otherwise provided in the Contract. Failure to timely accept or reject the Work shall neither relieve the Contractor from responsibility for such Work nor impose liability on the Purchaser.

21.7. In the event that any Work, or lots thereof, or services are defective in design, material, workmanship or manufacturing quality, or as a result of undue wear and tear or otherwise not in conformity with the requirements of this Contract, including any characteristic or condition which is or becomes at variance to the performance specifications, to the intended function of the Work or the function to which it could reasonably be expected that the Work would perform, the Purchaser shall have the right either to reject them (with or without instructions as to their disposition) or to require their correction or replacement. Work which has been rejected or required to be corrected or replaced shall, at the expense of the Contractor, be removed, or, if permitted or required by the Contracting Authority, corrected in place by the Contractor promptly after notice, and shall not thereafter be tendered for acceptance by the Contractor unless the former rejection or requirement of correction or replacement is withdrawn. If the Contractor fails promptly to remove, replace or correct such Work the Purchaser may either:

21.7.1. by contract or otherwise return, replace or correct such Work or services and charge to the Contractor the cost incurred by the Purchaser; and/or

21.7.2. terminate this Contract for default as provided in Clause 39 (Termination for Default).

21.8. When NQAR is not applicable based on the scale of the project, the Purchaser reserves the right to perform inspections through his own staff in accordance with the latest ISO standard at the time of inspection.

21.9. Unless the Contractor corrects or replaces such Work within the delivery schedule, the Purchaser may require the delivery of such Work at a reduction in price which is equitable under the circumstances. Failure to agree to such reduction of price shall be a dispute within the meaning of Clause 41 (Disputes).

21.10. If any inspection or test is made by the Purchaser's representatives on the premises of the Contractor or Sub-contractor, the Contractor, without additional charge, shall provide all reasonable facilities and assistance for the safety and convenience of the Purchaser's representatives in the performance of their duties. The NQAR or other Purchaser representatives shall have the right of access to any area of the Contractor's or his Sub-contractor's premises where any part of the contractual work is being performed.

21.11. If Purchaser inspection or test is made at a point other than the premises of

the Contractor or Sub-contractor, it shall be at the expense of the Purchaser except as otherwise provided in this Contract; provided, that in case of rejection the Purchaser shall not be liable for any reduction in value of samples used in connection with such inspection or test.

21.12. All inspections and tests by the Purchaser shall be performed in such a manner as not to unduly delay the Work.

21.13. The Purchaser reserves the right to charge to the Contractor any additional cost of Purchaser inspection and test when Work is not ready at the time such inspection and test is requested by the Contractor or when re-inspection or retest is necessitated by prior rejection.

21.14. Acceptance or rejection of the Work shall be made as promptly as practicable after delivery, except as otherwise provided in this Contract, but failure to inspect and accept or reject Work shall neither relieve the Contractor from responsibility for such Work as are not in accordance with the Contract requirements nor impose liability on the Purchaser thereof.

21.15. The inspection and test by the Purchaser of any Work or lots thereof, or services, does not relieve the Contractor from any responsibility regarding defects or other failures to meet the Contract requirements which may be discovered prior to acceptance.

21.16. Acceptance of Work shall take place when the Contracting Authority confirms acceptance in writing of the Work in accordance with the procedure specified in the Contract, or if none is so specified then the Contracting Authority shall be deemed to have accepted the Work without prejudice to any other remedies, when and as soon as any of the following events have occurred:

21.16.1. the Purchaser has taken the Work into use, except as specifically provided by Clause 23 (Use and Possession Prior to Acceptance);

21.16.2. the Purchaser has not exercised its right of rejection of the Work within any period specified for that purpose in the Contract;

21.16.3. there being no period for exercising the right of rejection specified in the Contract, a reasonable time, all the circumstances having been taken into account, has elapsed since inspection of the Work was effected in accordance with the Contract.

21.17. Except as otherwise provided in this Contract, acceptance shall be conclusive except as regards latent defects, fraud, or such gross mistakes as amount to fraud.

21.18. Unless otherwise specified in this Contract, the Contractor shall have or establish, implement and maintain an effective and economical quality control system necessary to satisfy the Contract requirement. The system shall provide for the early and prompt detection of deficiencies, trends and conditions which could result in unsatisfactory quality and for timely and effective corrective action. Objective evidence that the system is effective

shall be readily available to the Purchaser and its authorised representatives. Records of all inspection and testing work by the Contractor shall be kept complete and available to the Purchaser's representatives during the performance of this Contract and for such longer periods as may be specified elsewhere in this Contract.

22. INSPECTION AND ACCEPTANCE OF DOCUMENTATION

22.1. The Contractor shall provide to the Purchaser a draft version of the required documentation as provided by the Contract Schedule and the Statement of Work. Review of draft documentation under this Contract will be made by the Purchaser upon the delivery of these items by the Contractor. The review will be conducted by the Purchaser through duly authorised representatives.

22.2. Upon delivery of the draft documentation, the Purchaser will have a period of review as provided by the Statement of Work. At the end of the review period or before if deemed practical by the Purchaser, the Purchaser's comments will be presented to the Contractor in writing. The substance of such comments will pertain to items of error, non-conformity, omission and guidance in relation to the requirements of the Statement of Work.

22.3. Purchaser Review of the delivered items will emphasise the conformity with the requirements of the Statement of Work, thoroughness of analysis, logical bases of conclusions and models and coherence and completeness of presentation. The review process will also examine editorial and grammatical correctness and the suitability and accuracy of graphics supporting the text.

22.4. The Contractor shall, after receipt of Purchaser comments, incorporate changes, revisions and corrections required by the Purchaser and present the revised documentation in final form to the Purchaser for inspection in accordance with the delivery date specified in the Schedule.

22.5. During the review process the Contractor is not required to halt efforts on further tasks as identified in the Statement of Work. The Purchaser, however, shall not be held liable for any work carried out by the Contractor which is based on draft documentation yet to be reviewed.

22.6. Upon receipt of the items in final form, the Purchaser will inspect the items for a period not exceeding two weeks (or as otherwise stated in the Statement of Work). At the end of the inspection, the Purchaser will notify the Contractor that:

22.6.1. the items have been accepted;

22.6.2. the acceptance of the items is deferred pending further revision; or

22.6.3. the items are rejected and significantly fail to meet Contract requirements.

22.7. In the case of Clause 22.6.2 above, the Contractor shall only be responsible for those revisions and corrections requested by the Purchaser and the Purchaser may not request additional revisions during inspection after required revisions have been made. However, if the Purchaser determines that a directed revision has not been made or if such directed revision was cause for revision of other portions of content which were not made by the Contractor, the Purchaser may withhold acceptance until such revisions are made by the Contractor.

22.8. The Contractor shall provide to the Purchaser on request supporting technical data, computer software, databases and background analyses in order to validate findings contained in the delivered items.

22.9. Purchaser acceptance shall be made in writing by the Contracting Authority.

23. USE AND POSSESSION PRIOR TO ACCEPTANCE

23.1. Except as otherwise provided in the Special Contract Provisions, the Purchaser shall have the right to take possession of, or use, any completed or partially completed Work under the Contract at any time, when notified by the Contracting Authority, however such possession or use shall not constitute Acceptance by the Purchaser, as defined in the Contract.

23.2. While the Purchaser has such use or is in such possession, the Contractor shall be relieved of the responsibility for loss or damage to the Work concerned other than that resulting from the Contractor's fault, negligence or defect to the Work.

23.3. If such prior possession or use by the Purchaser delays the progress of the Work or causes additional expense to the Contractor, an equitable adjustment in the Contract price or the time of delivery will be made, in accordance with the Clause 16 (Changes), and the Contract shall be modified in writing accordingly.

24. OWNERSHIP AND TITLE

24.1. Except as may be otherwise stated in the Contract Special Provisions and Clause 23 (Use and Possession prior to Acceptance), ownership and title to all Work will pass to the Purchaser only upon Acceptance by the Contracting Authority in writing. Where the Contract provides for Provisional Acceptance and Final Acceptance, ownership and title will pass to the Purchaser upon written notification of Final Acceptance.

25. INVOICES AND PAYMENT

25.1. Unless otherwise specified in the Contract Special Provisions, invoices shall only be submitted after delivery and Acceptance of the Work and for the total prices and currency(ies) as set out under the Schedule of Work.

25.2. Invoices in respect of any Work or services shall be prepared and submitted to the Purchaser and shall contain all of the elements listed below:

25.2.1. Contract number;

25.2.2. Purchaser's Purchase Order number ;

25.2.3. accounting codes (as specified in this Contract);

25.2.4. item number (as defined in the Contract);

25.2.5. Contract description of Work or services, sizes, quantities, unit prices, and extended totals (exclusive of taxes and duties for which relief is available);

25.2.6. Details of Bills of Lading or Freight Warrant numbers and weight of shipment shall be identified on each invoice as appropriate.

25.3. In addition, documentary evidence of Acceptance including copies of certificates of conformity shall be submitted together with each invoice. Invoices shall not be submitted to the Purchaser without Acceptance having been previously made by the Purchaser.

25.4. Each copy of the invoice shall contain the following certificate which shall be signed by a duly authorised company official on the designated original invoice:

"I certify that the above invoice is true and correct, that the delivery of the above described items has been duly carried out and the payment thereof has not been received.

*Order placed for official use. Exemption from VAT Article 42,§3&3*of VAT Code for Belgium or Article 151, §1b of the Council Directive 2006/112/EC dd. 28 November 2006 on intra-community purchases and/or services.".*

25.5. All invoices shall be addressed to the NCIA - Financial Management

Either at the following addresses:

NCIA
Financial Management
Boulevard Léopold III
1110 Brussels
Belgium

OR

shall be addressed to Financial Management at the following electronic address:
"ncia-fmrc-bel_einvoices@ncia.nato.int"

Once the manner of forwarding the invoice is chosen, the Contractor shall keep this manner throughout the Contract.

25.6. Invoices will be settled by the Purchaser within sixty (60) days of receipt of a properly prepared and submitted invoice.

25.7. The Purchaser shall not bear any cost relating to financial guarantees which the Contractor is required to provide under this contract. The Purchaser is released from any interest resulting from any reason whatsoever.

26. TAXES AND DUTIES

26.1. The Purchaser, by virtue of his status under the terms of Article IX and X of the Ottawa Agreement, is exempt from all direct taxes (incl. VAT) and all customs duties on merchandise imported or exported. The Contractor, therefore, certifies that the prices stipulated in this Contract do not include amounts to cover such direct taxes or customs duties.

26.2. The Contractor shall be responsible for ensuring that his respective Sub-contractors are aware that the Purchaser is exempt from taxes and customs duties. The Contractor (and his respective Sub-contractors) shall be responsible for complying with all applicable national and local legal and administrative procedures to ensure that authorities do not attempt to assess taxes and customs duties on goods and property imported or exported through NATO member nation frontiers under this Contract nor assess direct taxation (VAT) on goods sold to the NCIA under this Contract.

26.3. The Purchaser shall give reasonable assistance in providing evidence/documents which might be required by the Contractor to ensure that NCIA receives tax exemption by virtue of its status under the Ottawa Agreement.

26.4. If, after complying with all national and local legal and administrative procedures, the authorities persist in attempting to impose taxes or duties on goods provided under this Contract, the Contractor shall inform the Contracting Authority providing the particulars of the situation, the procedures which have been followed and the point of contact at the national authority which is attempting to impose taxation or duty. The Contracting Authority will examine the situation and attempt to clarify the legal and administrative basis of the difficulty. If the Contracting Authority so directs, the Contractor shall pay the required taxes and duties and file for reimbursement or rebate from the national authorities in accordance with

national legislative and administrative procedures.

26.5. In the event that the petition for reimbursement or rebate is denied by the national authorities concerned and providing that the Contractor and/or his Sub-contractor have complied with the national legislative and administrative procedures, the Purchaser shall reimburse the full amount of the payment(s) upon receipt of the Contractor's invoice indicating such tax or duty as a separate item of cost and fully identified by reference to any governmental law, regulation and/or instruction pursuant to which such tax or duty is enforced. The Contractor shall offer assistance and execute any such document that may be useful or required to ensure that Purchaser obtains the reimbursement of any tax or duty retained by a national authority.

26.6. In the event of the Contractor and/or Sub-contractor not complying with national legislative or administrative procedures, taxes and duties paid by the Contractor and/or Sub-contractors shall not be reimbursed by the Purchaser.

26.7. Following payment by the Purchaser of the taxes and/or duties pursuant to Clause 26.4 above, should the Contractor subsequently receive a rebate of any amount paid by the Purchaser, the Contractor shall immediately notify the Purchaser and the amount of such rebate shall be credited or reimbursed to the Purchaser, as directed. The Contractor shall be responsible for taking any and all action that could reasonably be required in order to obtain such rebate.

26.8. The Contractor shall be liable for all other taxes, assessments, fees, licences, administrative charges or other Government assessments or charges which are applicable to the performance of this Contract. It is the Contractor's responsibility to inform himself of his liability in each country where such liability may arise.

27. WARRANTY OF WORK (exclusive of Software)

27.1. For the purpose of this Clause:

27.1.1. “Acceptance” shall mean the act of an authorised representative of the Purchaser by which the Purchaser assumes title and ownership of delivered Work rendered as partial or complete performance of the Contract. “Acceptance” in this regard, unless specifically provided otherwise in the Contract Special Provisions, means final Acceptance where the Contract provides for Provisional or Partial Acceptance;

27.1.2. “Correction” shall mean the elimination of a defect;

27.1.3. “Work” shall not include software.

27.2. The Contractor shall not be responsible under this Clause for the Correction of Defects in Purchaser Furnished Property, except for Defects in

Contractor performed installation, unless the Contractor performs, or is obligated to perform, any modifications or other work on Purchaser Furnished Property. In that event, the Contractor shall be responsible for Correction of Defects that result from the modifications or other Work.

27.3. Unless another period of time is indicated in the Contract Special Provisions, the duration of the warranty provided by the Contractor and its Subcontractors shall be twelve (12) months from the date of Acceptance under this Contract as notified in writing by the Contracting Authority.

27.4. Any Work or parts thereof corrected or furnished in replacement and any services re-performed shall also be subject to the conditions of this Clause 27 to the same extent as Work initially accepted. The warranty, with respect to these Work, or parts thereof shall be equal in duration to that set forth in Clause 27.3, and shall run from the date of delivery of the corrected or replaced Work.

27.5. If the Contractor becomes aware at any time before Acceptance by the Purchaser (whether before or after tender to the Purchaser) or at a later time, that a Defect exists in any Work, the Contractor shall either promptly correct the Defect or promptly notify the Purchaser, in writing, of the Defect, using the same procedures prescribed in Clause 27.8.

27.6. The Purchaser will notify in writing the Contractor of the existence of a Failed Component and return to the Contractor the Failed Component within thirty (30) Days of the discovery of such failure. The transport of the Failed Component shall be at the expense of the Purchaser. The notification of the failure will include as much information as practicable about the circumstances and operating environment at the time of the failure. Upon receipt of such notification by the Purchaser (which may precede receipt of the Failed Component), the Contractor shall ship to the location of the Failed Component an identical component for installation by Purchaser personnel. The Contractor shall ship such replacement component(s) Delivery Duty Paid. Such transportation and replenishment charges are included in the cost of line item of the Contract identified as the warranty.

27.7. In such rare cases where the Failed Component is either too large to be easily transported or the Failed Component cannot be readily identified and isolated within the larger entity, the Contractor shall be notified by the Purchaser of the failure immediately by telephone, fax or e-mail. The Contractor shall provide technical support to the Purchaser personnel in identifying the Failed Component so as to afford the Purchaser the opportunity to return the Failed Component. In such a case where the Failed Component cannot be identified or is not cost effective or practical to ship to the Contractor’s facility, the Contractor may elect to send field service personnel to the site of the failure and repair such equipment on location. In this event, such field service personnel shall be dispatched to the site of the failure within forty-eight (48) hours of initial notification. The expense of the technical support and field service shall be borne by the Contractor.

27.8. The Contractor shall conduct analysis of all Failed Components which are returned to him by the Purchaser or repaired in the field by Contractor field service personnel to determine the cause of the failure. The Contractor shall issue a report to the Purchaser within thirty (30) days of receipt of a returned item or field repair which contains the results of the analysis. The report shall contain the conclusion of the Contractor as to whether the cause of the failure was due to a Manufacturing Defect or a Design Defect and declare what course of remedial action the Contractor shall implement to prevent further failures of a similar nature. Repetitive failures of the same component may be grounds for a de facto determination by the Purchaser that a Design Defect exists.

27.9. If the Purchaser determines that a Design Defect exists in any of the Work accepted by the Purchaser under this Contract, the Purchaser shall promptly notify the Contractor of the Defect, in writing, within ninety (90) days after discovery of the Defect. Upon timely notification of the existence of a Defect, or if the Contractor independently discovers a Design Defect or Manufacturing Defect in accepted Work, the Contractor shall submit to the Purchaser, in writing within thirty (30) days, a recommendation for corrective actions, together with supporting information in sufficient detail for the Purchaser to determine what corrective action, if any, shall be undertaken.

27.10. The Contractor shall also prepare and furnish to the Purchaser data and reports applicable to any Correction required under this Clause (including revision and updating of all other affected data and already accepted documentation called for under this Contract) at no increase in the Contract price.

27.11. In the event of timely notice of a decision not to correct or only to partially correct, the Contractor shall submit a technical and cost proposal within forty-five (45) days to amend the Contract to permit Acceptance of the affected Work in accordance with the revised requirement, and an equitable reduction in the Contract price shall promptly be negotiated by the Parties and be reflected in a supplemental agreement to this Contract.

27.12. Within thirty (30) days after receipt of the Contractor's recommendations for corrective action and adequate supporting information in accordance with Clause 27.9, the Purchaser using sole discretion, shall give the Contractor written notice not to correct any Defect, or to correct or partially correct any Defect within a reasonable time.

27.13. The Contractor shall promptly comply with any timely written direction from the Purchaser to correct or partially correct a manufacturing or Design Defect, at no increase in the Contract price.

27.14. The Purchaser shall give the Contractor a written notice specifying any failure or refusal of the Contractor to:

27.14.1. conduct analyses of Failed components and implement a course of remedial action as required by Clauses 27.7 and 27.8;

27.14.2. provide replacement components, technical support or on-

location field repair service in accordance with Clauses 27.6 and 27.7; or

27.14.3. prepare and furnish data and reports as required by Clause 27.10.

27.15. The notice referred to in Clause 27.14 shall specify a period of time following receipt of the notice by the Contractor in which the Contractor must remedy the failure or refusal specified in the notice.

27.16. If the Contractor does not comply with the Purchaser's written notice in Clause 27.14, the Purchaser may by Contract or otherwise:

27.16.1. Obtain detailed recommendations for corrective action from its own resources or third parties and either:

27.16.1.1. correct the Work;

27.16.1.2. replace the Work, and if the Contractor fails to furnish timely disposition instructions, the Purchaser may dispose of the non-confirming Work for the Purchaser's account in a reasonable manner, in which case the Purchaser is entitled to reimbursement from the Contractor, or from the proceeds, for the reasonable expenses of care and disposition, as well as for excess costs incurred or to be incurred;

27.16.1.3. obtain applicable data and reports; and/or

27.16.1.4. charge the Contractor for the costs incurred by the Purchaser.

27.17. In no event shall the Purchaser be responsible for any extension or delays in the scheduled deliveries or periods of performance under this Contract as a result of the Contractor's obligations to correct Defects, nor shall there be any adjustment of the delivery schedule or period of performance as a result of the Correction of Defects unless provided by a supplemental agreement with adequate consideration.

27.18. The rights and remedies of the Purchaser provided in this Clause shall not be affected in any way by any terms or conditions of this Contract concerning the conclusiveness of inspection and Acceptance and are in addition to, and do not limit, any rights afforded to the Purchaser by any other Clause of this Contract or applicable law.

28. RIGHT OF ACCESS, EXAMINATION OF RECORDS

28.1. The Contractor shall give to the Purchaser and/or his representative(s) full and free access to his premises as and when required for the purpose of

this Contract and shall ensure the same right of access to the premises of his Sub-contractors, by the inclusion in any such Sub-contracts of a provision substantially as set forth in this Clause.

28.2. The Purchaser and/or his representative(s) shall continue to have such right of access and examination of records as set forth in Clause 28.1 above until final payment under the Contract or the end of the warranty provisions under the Contract, whichever occurs later.

28.3. The expiration of the Purchaser's rights as set forth in Clause 28.2 is further subject to the provisions of Clause 19 (Pricing of Changes, Amendments and Claims), where a three (3) year right is established following the agreement of contractual amendments or the settlement of claims based upon the submission of cost and pricing data.

28.4. The period of access and examination described in Clause 28.1 above for records not related to cost aspects of a dispute or claim but which relate to issues of fact arising under either proceedings under Clause 41 (Disputes) or Clause 42 (Arbitration), or the settlement of claims made by either Party pursuant to the performance of this Contract, shall continue until such appeals, litigation or claims have been disposed of.

29. PATENT AND COPYRIGHT INDEMNITY

29.1. The Contractor shall assume all liability against any and all third party claims that the services, Work and/or parts thereof, in whole or in part, infringe(s) an IPR in force in any countries, arising out of the manufacture, import, export, performance of the services or delivery of Work and/or out of the use or disposal by, or for the account of, the Purchaser of such Services and/or Work. The Contractor shall reimburse and/or indemnify the Purchaser, its officers, agents, employees and/or consultants: (i) for all costs, fees, damages, awards, settlement amounts and any other expenses awarded to the third party right holder against Purchaser and/or the final beneficiaries of the Work in relation to said third party claim; and (ii) for the costs and expenses incurred by the Purchaser in relation to said third party claims, including attorney fees. The Contractor shall be responsible for obtaining any licences necessary for the performance of this Contract and for making all other arrangements required to indemnify the Purchaser from any liability for IPR infringement in said countries.

29.2. Each Party shall immediately notify the other of any intellectual property infringement claims of which he has knowledge and which pertain to the Work under this Contract.

29.3. This indemnity shall not apply under the following circumstances:

29.3.1. Patents or copyright which may be withheld from issue by order of the applicable government whether due to security regulations or otherwise;

29.3.2. An infringement resulting from specific written instructions from the Purchaser under this Contract;

29.3.3. An infringement resulting from changes made to the Work by the Purchaser without the Contractor prior written consent, or;

29.3.4. An infringement resulting from changes or additions to the Work subsequent to final delivery and Acceptance under this Contract

30. INTELLECTUAL PROPERTY

30.1. Purchaser Background IPR

30.1.1. The Contractor is licensed to use, non-exclusively and royalty-free any Purchaser Background IPR that is or will be made available for the sole purpose of carrying out the Work.

30.1.2. The Contractor shall not use any Purchaser Background IPR other than for the purpose of carrying out the Work without the prior written agreement of the Purchaser. Any such agreement shall include the terms relating to such use.

30.1.3. The Purchaser gives no warranty as to the validity of any Purchaser Background IPR. The Contractor shall not do anything or act in any way which is inconsistent with or prejudicial to the ownership by the Purchaser of any Purchaser Background IPR.

30.2. Contractor Background IPR

30.2.1. Any use of Contractor Background IPR for the purpose of carrying out the Work pursuant to the Contract shall be free of any charge to Purchaser. The Contractor hereby grants to NATO a non-exclusive, royalty-free and irrevocable licence to use and authorise others to use any Contractor Background IPR for the purpose of exploiting or otherwise using the Foreground IPR.

30.2.2. Any use of Contractor Background IPR is not limited to the number of users or the number of licenses required by the Contract for the use of system. The Purchaser reserves the right to use the Contractor Background IPR for any number of users and number of licenses as required, at no additional cost to the Purchaser.

30.3. Foreground IPR

30.3.1. All Foreground IPR is the property of the Purchaser on behalf of NATO. Consequently, no statement shall be made restricting the rights of the Purchaser in the Foreground IPR.

30.3.2. The Contractor shall ensure that suitable arrangements are in place

between its employees, agents, consultants and itself regarding Foreground IPR generated by said employees, agents, Subcontractors and consultants to allow the Contractor to fulfil its obligations under Clause 30.3.1 above.

30.3.3. The Contractor shall be entitled to use Foreground IPR on a non-exclusive, royalty free basis solely for the purpose of carrying out the Work.

30.3.4. The Contractor shall not use any Foreground IPR other than for the purpose of carrying out the Work without the Purchaser's prior written agreement. Any such agreement shall include terms relating to such use.

30.3.5. The Contractor shall provide the Purchaser, at the latest upon delivery of the Work and thereafter for the duration of the warranty and any purchased CLS agreement period, with full documented records of information in relation to the Work, including but not limited to, all drawings, specifications and other data that is necessary or useful to further develop, maintain and operate the Work.

30.3.6. The Contractor shall:

30.3.6.1. do all things necessary and sign all necessary or useful documents to enable the Purchaser to obtain the registration of the Foreground IPR as the Purchaser may require and select; and

30.3.6.2. to execute any formal assignment or other documents as may be necessary or useful to vest title to any Foreground IPR in the Purchaser.

30.3.7. The Contractor undertakes:

30.3.7.1. to notify the Purchaser promptly of any invention or improvement to an invention or any design conceived or made by the Contractor; and

30.3.7.2. to provide the Purchaser with such information as the Purchaser may reasonably request in order to: (i) determine the patentability of such invention or improvement; (ii) assess the need for registering such invention or improvement; and (iii) evaluate the potential value to the Purchaser of such a patent or registration if issued.

30.3.8. If the Purchaser determines that it wishes to apply for one or more

patents for the disclosed invention or improvement or for a registration for the disclosed design, it will prosecute such application(s) at its own expense. The Contractor undertakes to provide the Purchaser, at the Purchaser's expense, with such information and assistance as the Purchaser shall reasonably require prosecuting such application(s).

30.4. Third Party IPR

30.4.1. Any use of Third Party IPR for the purpose of carrying out the Work pursuant to the Contract shall be free of any charge to the Purchaser. The Contractor hereby grants to NATO a non-exclusive, royalty-free and irrevocable licence to use and authorise others to use any Third Party IPR for the purpose of exploiting or otherwise using the Foreground IPR.

30.4.2. With the exception of COTS items, any use of Third Party IPR is not limited to the number of users of the number of licences required by the Contract for the use of system. With the exception of COTS items, the Purchaser reserves the right to use the Third Party IPR for any number of users and number of licences as required, at no additional cost to the Purchaser.

30.4.3. For COTS items, the Contractor shall be responsible for obtaining licences from the Third Party in line with requirements of the Statement of Work (including number and locations of licences).

30.4.4. Where Third Party IPR is the subject of a licence or other agreement between the third party and the Purchaser or the Contractor, the Contractor shall not use any Third Party IPR for the purposes of carrying out work pursuant to the Contract without the prior written approval of the Purchaser. Contractor shall inform Purchaser in advance of any restrictions on the Purchaser’s use.

30.4.5. If, after the award of the Contract, the Contractor becomes aware of the existence of any Third Party IPR which the Contractor is using or believes is needed for the performance of the Contract, the Contractor shall immediately give the Purchaser a written report identifying such IPR and if they are compliant with the other provisions in the Contract. Any Third Party IPR under this clause is subject to the prior written approval by the Purchaser.

30.4.6. The Purchaser may consider open source solutions alongside proprietary ones in developments provided that such solution are fully compliant with the requirements of this Contract. The Contractor shall disclose in advance the open source license associated with the complemented open source solution. The Purchaser reserves

the right to refuse the incorporation of open source solutions that are deemed inadequate for incorporation in a NATO application (e.g. post-back obligations).

30.5. Subcontractor IPR

30.5.1. When placing a Sub-contract which is concerned with or involves the creation of IPR, the Contractor shall ensure that the Sub-contractor enters into the same agreement for the use of the IPR as stipulated in this Contract in such a way that the Purchaser will be entitled to use the IPR as agreed between the Purchaser and the Contractor. The Contractor shall include in the Sub-contract the content of the provisions of this Clause.

31. SOFTWARE WARRANTY

31.1. Statement of the Warranties

31.1.1. The Contractor warrants that each Software delivered under this Contract will conform to all requirements specified in the Contract. This will also include Software design specifications, including software configuration.

31.1.2. Regardless of the Purchaser initiation of or participation in developing Software design or specifications, each Software delivered under this Contract will conform to the essential Performance requirements set forth in this Contract, as those essential Performance requirements measured, tested, and verified by tests and procedures set forth in this Contract.

31.2. Notification Requirement

31.2.1. The Contractor agrees to notify the Purchaser in writing immediately after he first discovers that a defect(s) may exist in Software delivered under this Contract, unless the Purchaser has first notified the Contractor, in writing, of the same defect(s).

31.2.2. The Purchaser shall notify the Contractor upon discovery that a defect(s) may exist in any Software accepted by the Purchaser under this Contract, unless the Contractor has first notified the Purchaser, in writing of the same defect(s).

31.3. Duration of the Warranty

31.3.1. For each Software delivered under this Contract, the Contractor Warranties stated in paragraph 31.1 above shall extend to all defects discovered within 12 months from the date of acceptance of the Software by the Purchaser.

31.4. Purchaser Remedies for Breach

31.4.1. The rights and remedies of the Purchaser under this Software Warranty:

31.4.1.1. Are in addition to any rights and remedies of the Purchaser under any other provision of this Contract, including, but not limited to, the Purchaser's rights in relation to latent defects, fraud, or gross mistakes that amount to fraud; and

31.4.1.2. Shall apply notwithstanding inspection, acceptance, or any other clauses or terms of this Contract;

31.4.2. In the event of any defect as defined herein with respect to a Software delivered under this Contract, the Purchaser, in its sole discretion may:

31.4.2.1. Require the Contractor to take such action as may be necessary to eliminate the defect, at no additional cost to the Purchaser for materials, labour, transportation, or otherwise;

31.4.2.2. Require the Contractor to supply, at no additional cost to the Purchaser, all materials and instructions necessary for the Purchaser to eliminate the defect and to pay costs reasonably incurred by the Purchaser in taking such action as may be necessary to eliminate the defect, or;

31.4.2.3. Equitably reduce the contract price

31.4.3. The Purchaser may elect the remedies provided in paragraph 31.4.2.1 or 31.4.2.2 above notwithstanding any dispute respecting the existence of or responsibility for any alleged defect as defined herein with respect to any Software delivered under this contract, provided that the Contractor will not be required to pay costs incurred by the Purchaser under paragraph 31.4.2.2 until final determination of the defect. In the event that the alleged defect is subsequently determined not to be a defect subject to this warranty but the Contractor has incurred costs under paragraph 31.4.2.1 and 31.4.2.2 as required by the Contract by virtue of this paragraph 31.4.3, the contract price under this contract shall be equitably adjusted.

31.4.4. Election by the Purchaser of the remedy provided under paragraph 31.4.2.1 and 31.4.2.2 above shall not preclude subsequent election of a different remedy under paragraph 31.4.2 if the defect is not successfully eliminated under the prior election with one month of the notification under paragraph 31.2 above.

31.5. Limitations and Exclusions from Warranty Coverage

31.5.1. This Software Warranty shall not apply to alleged defects that the Contractor demonstrates to be in or otherwise attributable to the Purchaser furnished property as determined, tested, and verified by the tests and procedures set forth in this Contract. Notwithstanding this paragraph, a defect is not attributable to Purchaser furnished property if it is the result of installation or modification of Purchaser furnished property by the Contractor or of the integration of Purchaser furnished property into any Software delivered under this Contract.

31.5.2. Any Purchaser Furnished Property needs to be checked and approved by the Contractor. Approval is implied once the Contractor starts using the Purchaser Furnished Property.

31.6. Markings

31.6.1. All Deliverables under this Contract will identify the owner of the Deliverable and if applicable will prominently include, notice of the existence of this warranty, its substance, its duration, and instructions to notify the Purchaser promptly if the Software is found to be defective. The markings should also be included in the operating and/or maintenance manuals or instructions accompanying such Software.

31.6.2. All Deliverables regardless of the media they are delivered onto and which are subject to export control restrictions shall be clearly marked indicating the type and nature of restriction as well as the national law imposing such restrictions. Nothing in this provision is intended to invalidate, void or otherwise limit the rights of the Purchaser under this Contract.

32. NATO CODIFICATION

32.1. For the purposes of this Clause "Technical Data" means the drawings, specifications and technical documentation of those items designated by the Purchaser to support the equipment covered by the Contract, and required to fully identify the items and, if applicable, draft item identifications to the extent and in the form to be agreed between the Codification Authority and the Contractor.

32.2. In order to ensure the orderly identification of equipment, the Contractor shall furnish at the request of the Codification Authority the Technical Data required for the identification of the items of supply to the NATO codification system in the time scale stated in this Contract.

32.3. A recommended spare parts list or a similar data carrier prepared in accordance with instructions provided by the Purchaser as the basis for codification shall be supplied by the Contractor by the date established in

this Contract.

32.4. The Contractor shall supply or require his Sub-contractor(s)/supplier(s) to supply on request for the period of time specified in the Contract the relevant Technical Data for all items and sub-contracted items to the Codification Authority and the Purchaser. The Contractor shall require that each Sub-contractor/supplier shall include identical conditions in any subsequent order which he may place.

32.5. The drawings, specifications, related documentation and, if applicable, draft item identifications, prepared when possible by the true manufacturer of the item, shall be supplied by the Contractor or his Sub-contractor(s)/supplier(s) direct to the Codification Authority and, if required, to the Purchaser as and when they become available or, at the latest within the time limits specified in the Contract. The Contractor shall inform the Codification Authority and Purchaser within twenty-one (21) Days of receipt of the request if the required Technical Data are not immediately available, and shall impose a similar obligation upon his Sub-contractor(s)/supplier(s)

32.6. Except as hereinafter provided, the Contractor shall require the Sub-contractor(s)/supplier(s) to furnish on request the information direct to the Codification Authority in the Sub-contractor(s)/supplier(s)' country, but the Contractor shall remain responsible for ensuring that the information is so furnished. In the event of a Sub-contract order being placed with a manufacturer in a non-NATO country, the Contractor shall be responsible for obtaining Technical Data from the Sub-contractor/supplier and furnishing it to the Purchaser.

32.7. Technical Data relating to any Sub-contractor's/supplier's items shall include but not be limited to the name and address of the true manufacturer(s), his/their true reference number(s), drawing or item Part number(s) and applicable data in addition to any Part or reference number(s) allocated by the Contractor, plus draft item identification(s) if required by the Codification Authority.

32.8. The Contractor shall provide the Technical Data required for codification of those items ordered with this Contract and also for the pertaining support items ordered with future contracts, including updating information regarding all agreed modifications, design or drawing changes made to the equipment or detailed Parts.

32.9. If the Contractor has previously supplied Technical Data (for the purpose stated in Clause 31.2), the Contractor is to state this fact and indicate to whom they were supplied and the Contractor shall not under normal circumstances be required to make a further supply of the Technical Data already provided. The Technical Data furnished by the Contractor and Sub-contractor(s)/supplier(s) are to be presented in accordance with the requirements for the preparation of item identification(s) as outlined in the Guide for Industry provided by the Codification Authority.

32.10. The Contractor should contact the Codification Authority for any information concerning the NATO codification system. This information is to be found at:

"http://www.nato.int/structur/ac/135/ncs_guide/e_guide.htm"

33. RELEASE FROM CLAIMS

33.1. Prior to final payment under this Contract, the Contractor and each assignee under this Contract shall execute and deliver a release discharging the Purchaser, its officers, agents and employees from all liabilities, obligations and claims arising out of or under this Contract subject only to the following exceptions:

33.1.1. specified claims in stated amounts or in estimated amounts where the amounts are not susceptible to exact statement by the Contractor;

33.1.2. claims for reimbursement of costs (other than expenses of the Contractor by reason of his indemnification of the Purchaser against patent liability) including reasonable expenses incidental thereto, incurred by the Contractor under the provisions of this Contract relating to patents.

33.1.3. a patent infringement resulting from specific written instructions from the Purchaser under this Contract.

33.1.4. a patent infringement resulting from changes or additions to the goods and services subsequent to final delivery and acceptance under this Contract.

34. ASSIGNMENT OF CONTRACT

34.1. The Purchaser reserves the right to assign this Contract, in whole or in part, to another NATO body, agency or representative within NATO or NATO Nations. In such a case, the Purchaser shall notify the Contractor accordingly in writing.

34.2. NATO shall remain responsible for its obligations under the Contract and for the actions of the body, agency or representative to which this Contract may be assigned.

35. TRANSFER AND SUB-LETTING

35.1. The Contractor shall not give, bargain, sell, assign, sub-let or otherwise dispose of the Contract or any part thereof or the benefit or advantage of the Contract or any part thereof without the prior written consent of the Purchaser.

36. PURCHASER DELAY OF WORK

36.1. If the performance of all or any part of the Work is delayed or interrupted by an act of the Purchaser in the administration of this Contract, which act is not expressly or implicitly authorised by this Contract, or by the Purchaser's failure to act within the time specified in this Contract (or within a reasonable time if no time is specified), an adjustment shall be made for any increase in the cost of performance of this Contract caused by such delay or interruption and the Contract modified in writing accordingly.

36.2. Adjustment shall be made also in the delivery or performance dates and any other contractual provision affected by such delay or interruption. However, no adjustment shall be made under this Clause for any delay or interruption:

36.2.1. to the extent that performance would have been delayed or interrupted by any other cause, including the fault or negligence of the Contractor; or

36.2.2. for which an adjustment is provided or excluded under any other provision of this Contract.

36.3. No claim under this Clause shall be allowed:

36.3.1. if the Contractor has failed to notify the Purchaser in writing of the act or failure to act, indicating that this act or failure to act will result in a delay or increased costs;

36.3.2. for any costs incurred more than twenty (20) Days before the Contractor shall have notified the Purchaser in writing of the act or failure to act involved; and

36.3.3. unless the monetary claim, in an amount stated, is asserted in writing as soon as practicable after the termination of such delay or interruption, but not later than the date of final payment under the Contract.

37. CONTRACTOR NOTICE OF DELAY

37.1. In the event that the Contractor encounters difficulty in complying with the Contract schedule date(s) for whatever reason, including actual or potential labour disputes, the Contractor shall immediately notify the Contracting Authority in writing, giving pertinent details. This data shall be deemed to be informational in character and shall not be construed as a waiver by the Purchaser of any schedule or date, or of any rights or remedies provided by law or under this Contract.

37.2. Notwithstanding the above the Contractor shall be deemed to be in delay without notice from the Purchaser and only by simple expiry of the due date.

38. LIQUIDATED DAMAGES

38.1. If the Contractor:

38.1.1. fails to meet the delivery schedule of the Work or any performance milestones specified in the Schedule of Work to this Contract, or any extension thereof, or

38.1.2. fails to obtain acceptance of the delivered Work as specified in the Contract, or, if no time for acceptance is specified in the contract within a reasonable time after work is delivered,

the actual damage to the Purchaser for the delay will be difficult or impossible to determine. Therefore, in lieu of actual damages the Contractor shall pay to the Purchaser, for each day of delinquency in achieving the deadline or milestone, fixed and agreed liquidated damages of 1.0% (one per cent) per day of the associated payment set forth in the Schedule of Payments provided in the Special Contract Provisions. If no Schedule of Payments is specifically set forth in the Special Contract Provisions, the liquidated damages will be assessed against the price of the applicable contract line item (CLIN) of the Schedule of Supplies, Services and Prices.

38.2. In addition to the liquidated damages referred to above, the Purchaser shall have the possibility of terminating this Contract in whole or in part, as provided in Clause 39 (Termination for Default). In the event of such termination, the Contractor shall be liable to pay the excess costs provided in Clause 38.5.

38.3. The Contractor shall not be charged with liquidated damages when the delay arises out of causes beyond the control and without the fault or negligence of the Contractor as defined in Clause 39.6 (Termination for Default). In such event, subject to the provisions of Clause 41 (Disputes), the Purchaser shall ascertain the facts and extent of the delay and shall extend the time for performance of the Contract when in his judgement the findings of the fact justify an extension.

38.4. Liquidated damages shall be payable to the Purchaser from the first day of delinquency and shall accrue at the rate specified in Clause 38.1 to 20% of the value of each line item individually and an aggregate sum of all delinquent items not to exceed 15% of the value of the total Contract. These liquidated damages shall accrue automatically and without any further notice being required.

38.5. The rights and remedies of the Purchaser under this clause are in addition to any other rights and remedies provided by law or under this Contract.

39. TERMINATION FOR DEFAULT

39.1. The Purchaser may, subject to Clause 39.6 below, by written notice of default to the Contractor, terminate the whole or any part of this Contract if the

Contractor, inclusive but not limited to:

39.1.1. fails to make delivery of all or part of the Work within the time specified in the contract or any agreed extension thereof;

39.1.2. fails to make progress as to endanger performance of this Contract in accordance with its terms;

39.1.3. fails to meet the technical requirements or the Specifications of the Contract;

39.1.4. fails to comply with Clause 11 (Security);

39.1.5. transfer this Contract without the Purchaser's prior written consent;

39.1.6. breaches any provision of this Contract; or

39.2. In the case of any of the circumstances set forth in Clause 39.1 above, the Purchaser shall issue a letter to the Contractor stating that an actual or potential default exists and requiring a response from the Contractor within ten (10) Days that identifies:

39.2.1. in the case of late delivery of Work, when the Contractor shall deliver the Work and what circumstances exist which may be considered excusable delays under Clause 39.6.

39.2.2. in the case of the other circumstances identified in Clause 39.1 above, what steps the Contractor is taking to cure such failure(s) within a period of ten Days (or such longer period as the Purchaser may authorise in writing) after receipt of notice in writing from the Purchaser specifying such failure and identifying any circumstances which exist which may be considered excusable under Clause 39.6.

39.3. The Purchaser shall evaluate the response provided by the Contractor or, in the absence of a reply within the time period mentioned in Clause 39.2, all relevant elements of the case, and make a written determination within a reasonable period of time that:

39.3.1. sufficient grounds exist to terminate the Contract in whole or in part in accordance with this Clause and that the Contract is so terminated;

39.3.2. there are mitigating circumstances and the Contract should be amended accordingly; or

39.3.3. the Purchaser will enter a period of forbearance in which the Contractor must show progress, make deliveries, or comply with the

Contract provisions as specified by the Purchaser. The Purchaser may apply other remedial actions as provided by this Contract during such period of forbearance. This period of forbearance shall in no event constitute a waiver of Purchaser's rights to terminate the Contract for default.

39.4. At the end of the period of forbearance, which may be extended at the Purchaser's discretion, the Purchaser may terminate this Contract in whole or in part as provided in Clause 39.1 if the Contractor has not made adequate progress, deliveries or compliance with the Contract provisions which were the terms of the period of forbearance.

39.5. In the event the Purchaser terminates this Contract in whole or in part, as provided in Clause 39.1, the Purchaser may procure, upon such terms and in such manner as the Purchaser may deem appropriate, Work similar to those so terminated, and the Contractor shall be liable to the Purchaser for any excess costs for such similar Work; however, the Contractor shall continue the performance of this Contract to the extent not terminated under the provisions of this clause.

39.6. Except with respect to the default of Sub-contractors, the Contractor shall not be held liable for a termination of the Contract for default if the failure to perform the Contract arises out of causes beyond the control and without the fault or negligence of the Contractor.

39.6.1. Such causes may include, but are not restricted to, acts of God, acts of the public enemy, acts of the Purchaser in its contractual capacity, acts of sovereign governments which the Contractor could not reasonably have anticipated, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; but in every case the failure to perform must be beyond the control and without the fault or negligence of the Contractor.

39.6.2. If the failure to perform is caused by the default of a Sub-contractor, and if such default arises out of causes beyond the control of both the Contractor and Sub-contractor, without the fault or negligence of either of them, the Contractor shall not be held liable for a termination for default for failure to perform unless the Work to be furnished by the Sub-contractor were obtainable from other sources in sufficient time to permit the Contractor to meet the required delivery schedule.

39.7. If this Contract is terminated as provided in Clause 39.1, the Purchaser, in addition to any other rights provided in this Clause and the Contract, may require the Contractor to transfer title and deliver to the Purchaser, in the manner and to the extent directed by the Purchaser:

39.7.1. any completed Work with associated rights ;

39.7.2. such partially completed Work, materials, Parts, tools, dies, jigs, fixtures, plans, drawings, information, and Contract rights

(hereinafter called "Manufacturing materials") with associated rights as the Contractor has specifically produced or specifically acquired for the performance of such part of this Contract as has been terminated;

39.8. In addition to Clause 39.7, the Contractor shall, upon direction of the Purchaser, protect and preserve property in the possession of the Contractor in which the Purchaser has an interest.

39.9. Payment for completed Work delivered to and accepted by the Purchaser shall be at the Contract price.

39.10. Payment for manufacturing materials delivered to and accepted by the Purchaser and for the protection and preservation of property shall be in an amount agreed upon by the Contractor and Purchaser, failure to agree to such amount shall be a dispute within the meaning of Clause 41 (Disputes).

39.11. The Purchaser may withhold from amounts otherwise due to the Contractor for such completed Work or manufacturing materials such sum as the Purchaser determines to be necessary to protect the Purchaser against loss because of outstanding liens or claims of former lien holders.

39.12. If, after notice of termination of this Contract under the provisions of this Clause, it is determined for any reason that the Contractor was not in default under the provisions of this Clause, or that the default was excusable under the provisions of this Clause, the rights and obligations of the Parties shall be the same as if the notice of termination had been issued pursuant to Clause 40 (Termination for the Convenience of the Purchaser).

39.13. If after such notice of termination of this Contract under the provisions of this Clause, it is determined for any reason that the Contractor was not in default under the provisions of this Clause and that the Parties agree that the Contract should be continued, the Contract shall be equitably adjusted to compensate for such termination and the Contract modified accordingly. Failure to agree to any such adjustment shall be a dispute within the meaning of Clause 41 (Disputes).

39.14. The rights and remedies of the Purchaser provided in this Clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Contract.

40. TERMINATION FOR THE CONVENIENCE OF THE PURCHASER

40.1. The performance of Work under this Contract may be terminated by the Purchaser in accordance with this Clause in whole, or from time to time in part, whenever the Purchaser shall determine that such termination is in the best interest of the Purchaser.

40.2. Any such termination shall be effected by delivery to the Contractor of a written notice of termination, signed by the Contracting Authority, specifying

the extent to which performance of Work under the Contract is terminated, and the date upon which such termination becomes effective.

40.3. After receipt of a Notice of Termination and except as otherwise directed by the Contracting Authority, the Contractor shall:

40.3.1. stop the Work on the date and to the extent specified in the notice of termination;

40.3.2. place no further orders or Sub-contracts for Work, Parts, materials, services or facilities, except as may be necessary for completion of such portion of the Work under the Contract as is not terminated;

40.3.3. terminate all orders and Sub-contracts to the extent that they relate to the performance of Work terminated by the Notice of Termination;

40.3.4. assign to the Purchaser, in the manner, at the times and to the extent directed by the Purchaser, all of the right, title and interest of the Contractor under the orders and Sub-contracts so terminated, in which case the Purchaser shall have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and Sub-contracts;

40.3.5. settle all outstanding liabilities and all claims arising out of such termination of orders and Sub-contracts, with the approval or ratification of the Purchaser to the extent he may require, which approval or ratification shall be final for all the purposes of this Clause;

40.3.6. transfer title and deliver to the Purchaser in the manner, at the times, and to the extent, if any, directed by the Contracting Authority of:

40.3.6.1. the fabricated parts, work in process, completed work, Work, and other material produced as a part of, or acquired in connection with the performance of the Work terminated by the notice of termination, and

40.3.6.2. the completed or partially completed plans, drawings, information, and other property which, if the Contract had been completed, would have been required to be furnished to the Purchaser;

40.3.7. use his best efforts to sell, in the manner, at the times, to the extent, and at the price or prices directed or authorised by the Contracting Authority, any property of the types referred to in Clause 40.3.6 above. However, the Contractor:

40.3.7.1. shall not be required to extend credit to any Buyer; and

40.3.7.2. may acquire any such property under the conditions prescribed by and at a price or prices approved by the Purchaser; and provided further that the proceeds of any such transfer or disposition shall be applied in reduction of any payments to be made by the Purchaser to the Contractor under this Contract or shall otherwise be credited to the price or cost of the Work or paid in such manner as the Contracting Authority may direct;

40.3.8. complete performance of such part of the Work as shall not have been terminated by the Notice of Termination; and

40.3.9. take such action as may be necessary, or as the Purchaser may direct, for the protection and preservation of the property related to this Contract which is in the possession of the Contractor and in which the Purchaser has or may acquire an interest.

40.4. The Contractor may submit to the Purchaser a list, certified as to quantity and quality, of any or all items of termination inventory not previously disposed of, exclusive of items the disposition of which has been directed or authorised by the Purchaser, and may request the Purchaser to remove such items or enter into a storage agreement covering the same; provided that the list submitted shall be subject to verification by the Purchaser upon removal of the items, or if the items are stored, within forty-five (45) Days from the date of submission of the list, and any necessary adjustment to correct the list as submitted shall be made prior to final settlement.

40.5. After receipt of a notice of termination, the Contractor shall submit to the Purchaser his termination Claim for the Work covered by the notice of termination, in the form and with certification prescribed by the Purchaser. Such claim shall be submitted promptly but in no event later than six (6) months from the effective date of termination, unless one or more extensions are granted in writing by the Purchaser, upon request of the Contractor made in writing within such six-month period or authorised extension thereof. However, if the Purchaser determines that the facts justify such action, the Purchaser may receive and act upon any such termination claim at any time after such six-month period or any extension thereof. Upon failure of the Contractor to submit his termination claim within the time allowed, the Purchaser may determine on the basis of information available to him, the amount, if any, due to the Contractor by reason of the termination and shall thereupon pay to the Contractor the amount so determined.

40.6. Subject to the provisions of Clause 40.5, the Contractor and the Purchaser may agree upon the whole or any part of the amount or amounts to be paid to the Contractor by reason of the total or partial termination of Work pursuant to this Clause, which amount or amounts may include a reasonable allowance for profit on work done; provided that such agreed amount or

amounts exclusive of settlement costs shall not exceed total Contract price as reduced by the amount of payments otherwise made and as further reduced by the Contract price of the Work not terminated. The Contract shall be amended accordingly and the Contractor shall be paid the amount agreed.

40.7. In the event of the failure of the Contractor and the Purchaser to agree as provided in Clause 40.6 upon the whole amount to be paid to the Contractor by reason of the termination of Work pursuant to Clause 40, the Purchaser shall pay to the Contractor the amounts determined by the Purchaser as follows, but without duplication of any amounts agreed upon in accordance with Clause 40.6 the total of:

40.7.1. for completed Work accepted by the Purchaser (or sold or acquired as provided in Clause 40.3 above) and not therefore paid for, a sum equivalent to the aggregate price for such Work computed in accordance with the price or prices specified in the Contract, appropriately adjusted for any saving of freight or other charges;

40.7.2. the costs incurred in the performance of the Work terminated including initial costs and preparatory expense allocable thereto, but exclusive of any costs attributable to Work paid or to be paid for under Clause 40.7.1;

40.7.3. the cost of settling and paying claims arising out of the termination of work under Sub-contracts or orders, as provided in Clause 40.3.5, which are properly chargeable to the terminated portion of the Contract, exclusive of amounts paid or payable on account of Work or materials delivered or services furnished by Sub-contractors or vendors prior to the effective date of the notice of termination, which amounts shall be included in the costs payable under Clause 40.7.2; and

40.7.4. a sum, as profit on Clause 40.7.1 above, determined by the Purchaser to be fair and reasonable; provided, however, that if it appears that the Contractor would have sustained a loss on the entire Contract, had it been completed, no profit shall be included or allowed and an appropriate adjustment shall be made reducing the amount of the settlement to reflect the indicated rate of loss; and

40.7.5. the reasonable costs of settlement, including accounting, legal, clerical and other expenses reasonably necessary for the preparation of settlement claims and supporting data with respect to the terminated portion of the Contract and for the termination and settlement of Sub-contracts there under, together with reasonable storage, transportation, and other costs incurred in connection with the protection, or disposition of property allocable to this Contract.

40.8. The total sum to be paid to the Contractor under Clause 40.7 shall not exceed the total Contract price as reduced by the amount of payments otherwise made and as further reduced by the Contract price of Work not terminated.

40.9. Except for normal spoilage, and except to the extent that the Purchaser shall have otherwise expressly assumed the risk of loss, there shall be excluded from the amounts payable to the Contractor, as provided in Clause 40.7 above, the fair value, as determined by the Purchaser, of property which is destroyed, lost, stolen, or damaged so as to become undeliverable to the Purchaser, or to a buyer pursuant to Clause 40.3.7 above.

40.10. The Contractor shall have the right to dispute, under the Clause 41 (Disputes), any determination made by the Purchaser under Clauses 40.5 and 40.7, except that if the Contractor has failed to submit his claim within the time provided in Clause 40.5 and has failed to request extension of such time, the Contractor shall be foreclosed from his right to dispute said determination. In any case where the Purchaser has made a determination of the amount due under Clauses 40.5 and 40.7, the Purchaser shall pay the Contractor the following:

40.10.1. if there is no right of appeal hereunder or if no timely appeal has been taken, the amount so determined by the Purchaser, or

40.10.2. if an appeal has been taken, the amount finally determined on such appeal.

40.11. In arriving at the amount due to the Contractor under this Clause there shall be deducted:

40.11.1. all unliquidated advance or other payments on account theretofore made to the Contractor, applicable to the terminated portion of this Contract;

40.11.2. any claim which the Purchaser may have against the Contractor in connection with this Contract; and

40.11.3. the agreed price for, or the proceeds of the sale of, any materials, Work, or other things acquired by the Contractor or sold, pursuant to the provisions of this Clause, and not otherwise recovered by or credited to the Purchaser.

40.12. If the termination hereunder is partial, prior to the settlement of the terminated portion of this Contract, the Contractor may file with the Purchaser, in accordance with Clause 16 (Changes), a request in writing for an equitable adjustment of the price or prices relating to the continued portion of the Contract (the portion not terminated by the notice of termination), and such equitable adjustment as may be agreed upon shall be

made in such price or prices.

40.13. The Purchaser may from time to time, under such terms and conditions as it may prescribe, make partial payments and payments on account against costs incurred by the Contractor in connection with the terminated portion of this Contract whenever in the opinion of the Purchaser the aggregate of such payments shall be within the amount to which the Contractor will be entitled hereunder. If the total of such payment is in excess of the amount finally agreed or determined to be due under this Clause, such excess shall be payable by the Contractor to the Purchaser upon demand, together with interest calculated using the average of the official base rate(s) per annum of the deposit facility rate as notified by the European Central Bank or such other official source as may be determined by the Purchaser, for the period from the date the excess is received by the Contractor to the date such excess is repaid to the Purchaser, provided, however, that no interest shall be charged with respect to any such excess payment attributed to a reduction in the Contractor's claim by reason of retention or other disposition of termination inventory until ten days after the date of such retention or disposition or such later date as determined by the Purchaser by reason of the circumstances.

40.14. Unless otherwise provided for in this Contract, the Contractor, from the effective date of termination and for a period of three years after final settlement under this Contract, shall preserve and make available to the Purchaser at all reasonable times at the office of the Contractor, but without direct charge to the Purchaser, all his books, records, documents, computer files and other evidence bearing on the costs and expenses of the Contractor under this Contract and relating to the work terminated hereunder, or, to the extent approved by the Purchaser, photographs, micro-photographs, or other authentic reproductions thereof.

41. DISPUTES

41.1. Except to the extent to which special provision is made elsewhere in the Contract, all disputes, differences or questions which are not disposed of by agreement between the Parties to the Contract with respect to any matter arising out of or relating to the Contract, other than a matter as to which the decision of the Contracting Authority under the Contract is said to be final and conclusive, shall be decided by the Contracting Authority. The Contracting Authority shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor.

41.2. The Contracting Authority shall not proceed with the evaluation and decision in respect of any claim until and unless the Contractor has submitted the attestation as foreseen in Clause 18 (Claims), as well as the complete proof and evidence of the claim (either by submission or by identification of the relevant documentation).

41.3. The Contracting Authority's decision shall be final and conclusive unless, within 30 Days from the date of receipt of such copy, the Contractor mails or otherwise furnishes to the Contracting Authority his decision to open arbitration proceedings in accordance with the Clause 42 (Arbitration). The burden of proof for both receipt and delivery of such documentation shall be by signed and dated registered mail receipt or by hand receipt as acknowledged and signed by the Contracting Authority.

41.4. Pending final decision of a dispute, the Contractor shall proceed diligently with the performance of the Contract, unless otherwise instructed by the Contracting Authority.

42. ARBITRATION

42.1. Within a period of thirty days from the date of receipt of the notification referred to in Clause 41.3 above, the Parties shall jointly appoint an arbitrator. In the event of failure to appoint an arbitrator, the dispute or disputes shall be submitted to an Arbitration Tribunal consisting of three arbitrators, one being appointed by the Purchaser, another by the other contracting party and the third, who shall act as President of the Tribunal, by these two arbitrators. Should one of the Parties fail to appoint an arbitrator during the fifteen days following the expiration of the first period of thirty days, or should the two arbitrators be unable to agree on the choice of the third member of the Arbitration Tribunal within thirty days following the expiration of the said first period, the appointment shall be made, within twenty-one days, at the request of the Party instituting the proceedings, by the Secretary General of the Permanent Court of Arbitration at The Hague.

42.2. Regardless of the procedure concerning the appointment of this Arbitration Tribunal, the third arbitrator will have to be of a nationality different from the nationality of the other two members of the Tribunal.

42.3. Any arbitrator must be of the nationality of any one of the member states of NATO and shall be bound by the rules of security in force within NATO.

42.4. Any person appearing before the Arbitration Tribunal in the capacity of an expert witness shall, if he is of the nationality of one of the member states of NATO, be bound by the rules of security in force within NATO. If he is of another nationality, no NATO classified documents or information shall be communicated to him.

42.5. An arbitrator, who, for any reason whatsoever, ceases to act as an arbitrator, shall be replaced under the procedure laid down in Clause 42.1 above.

42.6. The Contractor agrees to submit to the Arbitration Tribunal only such issues, facts, evidence and proof which the Contractor had beforehand identified and submitted to the Contracting Authority for decision in accordance with Clause 41 (Disputes). The jurisdictional authority of the Arbitration Tribunal

shall be restricted to consider only those identical issues, facts, evidence and proof so identified and submitted to the Contracting Authority.

42.7. The Purchaser likewise agrees to restrict its submissions only to the information on which the Contracting Authority based its decision and not to introduce new information and arguments which cannot reasonably be deduced or inferred from the written decision of the Contracting Authority in response to the original dispute.

42.8. The Arbitration Tribunal will take its decisions by a majority vote. It shall decide where it will meet and, unless it decides otherwise, shall follow the arbitration procedures of the International Chamber of Commerce in force at the date of signature of the present Contract.

42.9. The awards of the arbitrator or of the Arbitration Tribunal shall be final and there shall be no right of appeal or recourse of any kind. These awards shall determine the apportionment of the arbitration expenses.

42.10. Pending final decision of a dispute, the Contractor shall proceed diligently with the performance of the Contract, unless otherwise instructed by the Contracting Authority.

43. SEVERABILITY

43.1. If one or more of the provisions of this Contract is declared to be invalid, illegal or unenforceable in any respect under any applicable law, the validity, legality and enforceability of the remaining provisions shall not be affected. Each of the Parties shall use its best efforts to immediately and in good faith negotiate a legally valid replacement provision.

44. APPLICABLE LAW

44.1. This Contract shall be governed, interpreted and construed in accordance with the private contract law of the Kingdom of Belgium.

* *

ANNEX 1 TO GENERAL PROVISONS

PURCHASER'S PRICING PRINCIPLES

A. General

1. With regard to all actions included in Clause 19, 'Pricing of Changes, Amendments and Claims', the Purchaser will honour the accounting standards and pricing principles to which the Contractor is required to conform by the national defence authority (or other governing national authority, as applicable) in the country of origin of the Contractor. Where such accounting standards are non-existent or incomplete, or where the Contractor is not required to conform to such standards and principles, the Parties agree that the Purchaser's Pricing Principles contained herein shall govern.

2. As may be requested by the Purchaser, the Contractor shall provide documentation that the standards or principles employed in the submission of cost or pricing data are in conformance with governing national policies and regulation. The Contractor, when submitting a price proposal based upon national standards and regulations, shall provide a point of contact within the national body governing such standards and regulations in order to allow Purchaser verification and audit.

3. Where such conformance cannot be demonstrated to the satisfaction of the Purchaser, the Purchaser's Pricing Principles will govern.

4. The Contractor shall clearly state whether national standards and rules or the Purchaser's Pricing Principles and formats are the basis for the price proposal.

5. Whether national standards or Purchaser pricing principles are applied, all cost and pricing data shall be verifiable, factual and include information reasonably required to explain the estimating process.

6. The Contractor shall also incorporate provisions corresponding to those mentioned herein in all sub-contracts, and shall require price and cost analysis provisions be included therein.

B. Purchaser's Pricing Principles

1. Allowable cost

A cost is allowable for consideration by the Purchaser if the following conditions are fulfilled:

(a) it is incurred specifically for the Contract or benefits both the Contract and other work or is necessary to the overall operation of the business although a direct relationship to any particular product or service cannot be established and is allocated to them in respective proportion according to the benefit received;

i. Direct Costs
A direct cost is any cost which can be identified specifically with a particular cost objective as generally accepted. Direct costs are not limited to items which are incorporated in the end product as material or labour.

ii. Indirect Costs
An indirect cost is one which is not readily subject to treatment as a direct cost. When presented these costs shall be accumulated in logical cost groupings in accordance with sound accounting principles and the Contractor's established practices. An indirect cost may be allocated to more than one final cost objective. An indirect cost shall not be allocated to a final cost objective if other costs incurred for the same purpose, in like circumstances, have been included as a direct cost of that or any other final cost objective. Such costs shall be presented as overhead rates and be applied to each related direct cost grouping as presented in sub-paragraph 5 hereafter.

(b) The Contractor shall specify the allocation of costs to either of the cost groupings. The method by which costs are accumulated and distributed as part of direct or indirect costs cannot be modified during the duration of the Contract.

(c) it is reasonable and expedient in its nature and amount and does not exceed that which would be incurred by an ordinary prudent person in the conduct of competitive business;

(d) it is not liable to any limitations or exclusion as to types or amounts of cost items as set forth herein.

(e) The Purchaser will review other costs presented against the contract and will determine if they would be allowable.

2. Unallowable Costs

In general all costs which cannot be shown by the contractor to be directly or indirectly of benefit to the Contract are totally unallowable. Examples of such costs are, among others:

(a) Advertising costs

(b) Costs of remuneration, having the nature of profit sharing.

(c) Costs of maintaining, repairing and housing idle and excess facilities.

(d) Fines and penalties as well as legal and administrative expenses resulting from a violation of laws and regulations.

(e) Losses on other contracts or on expected follow-on contracts

(f) Costs incurred for the creation of reserves for general contingencies or other reserves (e.g. for bad debts, including losses).

(g) Losses on bad debts, including legal expenses and collection costs in connection with bad debts.

(h) Costs incurred to raise capital.

(i) Gains and losses of any nature arising from the sale or exchange of capital assets other than depreciable property.

(j) Taxes on profits.

(k) Contractual penalties incurred.

(l) Commissions and gratuities.

(m) Interest on borrowings.

3. Rates and Factors

(a) The Contractor shall inform the Purchaser of his rates and factors the basis upon which they were computed.

(b) If the Contractor's rates and factors for similar contracts placed with national or international public services have not been established or approved by a government agency or an agency accepted by his

government, the Contractor shall provide the necessary data to support the proposed rates.

(c) The term "provisional " used in the title of a rate or factor means a tentative rate established for interim billing purposes pending negotiation and agreement to the final rate or factor.

(d) A rate or factor is pre-determined if it is fixed before or during a certain period and based on (estimated) costs to be incurred during this period. A rate or factor is post-determined if it is fixed after a certain period and based on costs actually incurred during this period. Pre-determined rates or factors shall be agreed upon as final rates whenever possible; otherwise the provisions of paragraph 3c above shall apply pending agreement to post-determined rates or factors.

(e) Such rates or factors shall be determined on the basis of Contractor's properly supported actual cost experience.

(f) If the rates or factors of the Contractor for similar contracts placed by national or international public services have been established or approved by a government agency or an agency accepted by his government and the Contractor proposes the application of these rates, he shall state the name and address of the agency which has accepted or approved the rates and the period for which they were established. If he proposes rates which vary from the rates mentioned above, he shall furthermore provide a justification for the difference.

4. Profit/Benefit

(a) Over the entire life cycle of a given acquisition, Profit and/or Benefit may be subject to negotiation.

(b) Subcontracting profit/benefit amounts are dependent upon the size, nature and oversight needs of the subcontract(s) the prime contractor will use for work performance period.

(c) Profit/benefit is considered by the Purchaser to be directly related to the anticipated risk of the Contractor during the performance of the Contract.

NATO Communications and Information Agency
Agence OTAN d'information et de communication

IFB-CO-14091-EWFS

PROVIDE FUNCTIONAL SERVICES FOR ELECTRONIC WARFARE – INCREMENT 1

NATO Emitter Database Next Generation (NEDB-NG)

BOOK II – PART IV

STATEMENT OF WORK

DOCUMENT CONTROL PAGE

VERSION HISTORY

Version	Author	Date	Reason for Change	Superseded Document

Table of Contents

1. INTRODUCTION

1.1. Purpose

1.1.1. This Statement of Work (SOW) describes the responsibilities and efforts to be performed by the Contractor in satisfying the requirements of the NATO Emitter Database Next Generation (NEDB-NG) capability.

1.1.2. The NATO Commands, Joint EW Core Staff (JEWCS), and NATO nations currently use the NATO Emitter Database (NEDB) which only partially meet the current operational requirements.

1.1.3. The current NEDB is a reference database and used as the primary source for non-communications parametric data input. To improve situational awareness newer technologies emitters, like Electro-Optical laser signals, and Communication emitter information are required to be included in the Electronic Order of Battle (EOB).

1.1.4. The purpose of this project is the realization of an enhanced NATO Emitter Database-Next Generation (NEDB-NG) which will allow the NATO-wide exchange and distribution of Radar and EO/IR parametric and other data on NATO and non-NATO systems including newer technologies emitters and Communication emitters in near real time.

1.1.5. The scope of the SOW encompasses the delivery of the NEDB-NG capability to NATO Commands, JEWCS and NATO-Nations.

1.2. General

1.2.1. The Contractor shall provide all necessary resources including services, personnel, utilities and documentation needed to fully accomplish all the tasks described in this SOW, to meet the requirements of the System Requirements Specification (SRS), and to fulfil all other contract provisions.

1.2.2. The Contractor shall execute the system engineering, programme management, quality assurance and configuration management of the Contract.

1.2.3. The Contractor shall deliver the NEDB-NG capability to the specified location(s) and perform testing and handover in accordance with the Contract.

1.2.4. The Contractor shall fully document the design, operation and maintenance of the NEDB-NG System by providing the required manuals, software, support and training required by the Contract.

1.3. Definitions

1.3.1. Whenever requirements are stated herein to “include” a group of items, parameters, or other considerations, “include” means “include but not limited to”.

1.3.2. Whenever reference is made to a section, tasks, or paragraph, the reference includes all subordinate and referenced paragraphs.

1.3.3. The term “Contractor” means the entire Contractor/sub-contractor(s) organisation. All requirements in this SOW which would apply to the Contractor's activities apply equally to sub-contractor activities.

1.3.4. The order of the SOW requirements is not intended to specify the order in which they must be carried out unless explicitly stated.

1.3.5. For purposes of the SOW, the term "the Purchaser" means the NCI Agency or its authorised representatives. Where referenced standards, specifications, etc., refer to the “the Government”, this shall be construed as to mean “the Purchaser”.

1.3.6. In case of inconsistencies, the SOW and Annexes shall have precedence over the Applicable Documents.

1.3.7. The following conventions apply throughout this SOW and its annexes:

- Shall – ‘is required’ mandatory,
- Should – preferred possibility ‘recommended’,
- May – ‘is permitted’ not obligated,
- Can – ‘is able to’ possible not obligated,
- Must – used to describe unavoidable situations (not a substitute for shall),
- Will – statement of fact, not in actual requirement.

1.4. Operational Requirements

1.4.1. The NEDB-NG will be used to publish, manage and co-ordinate Radar, Electro Optics (EO), Comms Externals, Platform, Weapon and Location data with their interrelations. NATO Nations are responsible for their submissions and NEDB staff ensures that the data quality is according to programme settings and manuals.

1.4.2. The NEDB-NG shall allow the NATO nations to do submissions of Radar, EO, Comms Externals, Platform, Weapon and Location data with their interrelations in near real time. Nations will submit data to a centralised database hosted on NATO common infrastructure hardware allowing users more timely access to data additions and updates. This data will directly support ACO. NCI Agency will perform system management and JEWCS will perform data management.

1.4.3. The NATO nations are the owner of their data and responsible for submitting changes, updates and deletion to their data in the NEDB-NG.

1.4.4. The NEDB staff shall ensure the quality of the data before relaying it to NATO and National users. In particular the assignment of a NATO Spot Number to a new emitter is controlled by the NEDB staff.

1.5. Locations

1.5.1. Unless otherwise specified in the text, the definition of the Purchaser’s facility defines the following locations:

1.5.2. NCI Agency in Brussels, Belgium (referred to as NCI Agency Brussels);

1.5.3. NCI Agency in Casteau, Belgium (referred to as NCI Agency Mons);

1.5.4. NCI Agency The Hague, The Netherlands (referred to as NCI Agency The Hague);

1.5.5. The NEDB-NG capability will be implemented across the NATO Command Structure and the NATO nations as a Web based application on the NEDB-NG Web portal.

1.5.6. The NEDB-NG Web portal will be hosted on a NATO Secret network server in the NATO IT infrastructure.

1.5.7. NEDB-NG Web portal shall be accessible at the NATO Command sites listed in the Table below.

NCSS (Static facilities) NEDB-NG Web portal access		
NATO Command	***Address***	***Access***
JEWCS (Training System)	Yeovilton, United Kingdom	Yes
SHAPE	Mons, Belgium	Yes
JFC HQ Brunssum	Brunssum, The Netherlands	Yes
JFC HQ Naples	Naples, Italy	Yes
Air Command	Ramstein, Germany	Yes
Land Command	Izmir, Turkey	Yes
Maritime Command	Northwood, United Kingdom	Yes
Joint Warfare Centre	Stavanger, Norway	Yes
JALLC	Monsanto, Portugal	T.B.D.
Joint Force Training Centre	Bydgoszcz, Poland	T.B.D.
HQ SACT	Norfolk, United States	T.B.D.
NATO School	Oberammergau, Germany	Yes
NCISS	Latina, Italy	T.B.D.
NCI Agency (Reference System)	Mons, Belgium	Yes
NCI Agency (PMIC Test-Bed)	The Hague Netherlands	Yes
Knowledge Centre (at NIFC)	Molesworth, United Kingdom	Yes
CAOC U	Uedem, Germany	Yes
CAOC T	Torrejon, Spain	Yes
DACCC	Poggio Renatico, Italy	Yes
NAEW&C FC	Geilenkirchen, Germany	Yes

Table 1 – NCSS Authorised Access

1.5.8. The following NATO Nations shall have access to the NEDB-NG Web portal:

NATO Nations NEDB-NG Web portal access			
NATION	***Organisation***	***Address***	***Access***
Albania			T.B.D
Belgium	BELGIUM DEFENCE	Kwartier Koningin Elisabeth - BLOCK 5 BIS EVERESTRAAT, 1140 Brussels	Yes
Bulgaria	SIGINT & EW Dept. DIS, MOD	3 Digakon Ignatig, 1000 Sofia	Yes
Canada	CANADIAN FORCES EWC	NATIONAL DEFENCE HQ,Mgen George R,Pearkes Building, Ottowa, K1A 0K2	Yes
Croatia			T.B.D
Czech Rep	CZE MOD ISR&EW Dept	Vitezne namesti 5, 160 01 Prague 6	Yes
Denmark	EWC DNK	Flaedestation flaeden 1, 9900 Frederikshavn	Yes
France	DRM/CFEEE	BA110, Allee du Ltn Choron 60100 Creil	Yes
Estonia	Air Surveillance wing	Amari Vasalemma Harjumaa	Yes
Germany	Strategic Recon Command (SRC)	53501 Geisdorf, Max-Planck-Str.17	Yes
Greece	Hellenic National Defence General Staff A'Branch/OPS Division/EW Section	Papagou Camp STG 1020, Athens	Yes
Hungary	Hungarian Defence Staff	H-1055 Budapest, Balaton St, 7-11, Hungary	Yes
Italy	Italian Defence General Staff, Intelligence and Security Division	VIA LEPANTO 5, 00192 ROME	Yes
Latvia			T.B.D
Lithuania			T.B.D
Netherlands	NLD/CZSK/DOPS/CODAM	Naval Base Den Helder, P.O box 10.000/MPC 10A, 1780CA Den Helder	Yes
Norway	Norwegian EW Centre	Flyplassveien 300, N-1590 Rygge	Yes
Poland	MOD J2 GS	Warsaw, 4A Rakowiecka Str, 00-904 Warsaw	Yes
Portugal	Air force EW Centre	AV.Leite De Vasconcelos, N4 - 2614-506 Alfragide	Yes
Romania	Military Intelligence Directorate	1-3 Izvor street, Sector 5, 70642 Bucharest	Yes
Spain	Joint EW and Sigint HQ	C. Vitrubio 1, 28006 Madrid	Yes
Slovakia			T.B.D
Slovenia			T.B.D
Turkey	Turkish Navy HQ	Ankara Cad. Nu.252 P.K 46 Pendik, Instanbul	Yes

United Kingdom	Defence EW Centre	Thomson building RAF Waddington,LN5 9WA Lincoln	Yes
USA	Joint EW Centre	2 Hall Blvd, STE 117 San Antonio, TX 78243	Yes

Table 2 – NATO Nations Authorised Access

1.5.9. NATO will rationalise and centralise its IT infrastructure, reducing the footprint down to only 2 or 3 Data Centres. There are several projects in CP 9C0150 related to the implementation of this new IT architecture in the Bi-SC AIS and we list here two of these that are relevant:

1.5.9.1. "0IS03091: Exploit New Technology", which is implementing the basic Data Centre concept and the future "NATO Cloud"

1.5.9.2. "0IS03092: Extend, Upgrade and Adapt Fielded Baseline", which is helping upgrade existing infrastructure at sites.

1.5.10. It shall be anticipated that up to 100 users could be accessing the operational NEDB-NG Web portal server.

1.5.11. Due to security constraints for national Electronic Warfare network systems, the NEDB-NG Web-based application shall be capable to be installed outside the NATO Secret network boundary as a stand-alone client-server configuration.

1.5.12. An Operational User viewer application shall be realised to allow the NEDB-NG database to be used in ship-borne, airborne and mobile unit environments.

1.6. Scope of Work

1.6.1. The Contractor shall provide all necessary resources including services, personnel, materials, components, equipment, data and documentation - needed to accomplish the tasks described in the SOW and the Work Packages, to meet the requirements of the SOW and Work Packages, and to fulfil Contract Provisions.

1.6.2. The NEDB-NG capability is expected to be realised via a series of Work Packages.

1.6.3. Work Packages

1.6.3.1. Work Package 1 - Project Management

1.6.3.1.1. The objective of this work package is the management of the Project by the Contractor's Project Management team.

1.6.3.1.2. Deliverables include the Project Management Documentation and Project Review Meetings.

1.6.3.1.3. The Contractor shall apply an industry-standard Project Management methodology (such as PRINCE2) to the planning, delivery and control of services under this Contract.

1.6.3.1.4. Subject to approval of the Purchaser, the Contractor may propose his own project management methodology.

1.6.3.2. Work Package 2 – Requirements analyses and System design

1.6.3.2.1. This work package consists of reviewing the System Requirements Specifications (SRS) with the Contractor to confirm the requirements baseline for NEDB-NG.

1.6.3.2.2. Dedicated Subject Matter Expert support from NCI Agency experts and users is essential during this process to properly transfer knowledge residing within the current NEDB to be industrialised.

1.6.3.2.3. The current NEDB applications will be used by the Contractor for evaluating the existing functions and requirements, to produce the NEDB-NG implementation design including the new functional and non-functional requirements.

1.6.3.2.4. The NEDB-NG implementation design will be formally validated during two major design reviews, one Preliminary Design Review (PDR) and one Critical Design Review (CDR).

1.6.3.3. Work Package 3 – System Development and Integration

1.6.3.3.1. In this work package the Contractor shall implement the functions as defined in the NEDB-NG implementation design through development effort using commercial off-the shelf and uniquely developed software elements.

1.6.3.3.2. The Contractor shall test and verify the required functions for proper operation and also produce (user) documentation and training material during this activity.

1.6.3.3.3. The Contractor shall use the Sprint approach for the System Development and Integration of the NEDB-NG.

1.6.3.3.3.1. The Sprint approach implies that while a subset of NEDB-NG requirements is under development and integration stage, another subset of NEDB-NG requirements, identified in later Sprint, will be under design stage.

1.6.3.3.3.2. The Sprint approach will provide more visibility to the Purchaser on the System Development and Integration Stage and reduce the risk of the System not being accepted by the User.

1.6.3.3.3.3. In each Sprint the Contractor shall implement a new set of requirements, and consolidate it with implementation of the requirements from the previous sprint.

1.6.3.3.3.4. The final Sprint shall include all NEDB-NG requirements approved by the end-user and shall be used for the Purchaser Acceptance Test.

1.6.3.3.4. The Contractor shall demonstrate and document that the off-the-shelf and uniquely developed software elements of the NEDB-NG implementation design have been integrated to meet the specifications of the SRS and the SOW at the Factory Acceptance Testing (FAT).

1.6.3.3.5. The System Development and Integration results will be verified and validated during Joint Technical reviews.

1.6.3.3.6. The Contractor shall resolve major deficiencies that are identified during the Joint Technical review The corrections of the deficiencies will be reviewed at to the next Joint Technical review. It may be possible that retesting is required, prior to proceed to the next development sprint..

1.6.3.4. Work Package 4 – System Integration and Acceptance

1.6.3.4.1. The Contractor shall conduct Integration and Interoperability Test at the NCI Agency in the Project Management Infrastructure Committee (PMIC) facilities to demonstrate compliance with the Bi-SC AIS Fielded Baseline and to ensure the release meets the performance and other non-functional requirements.

1.6.3.4.2. If a release includes the integration of a new Bi-SC AIS Core Service or the implementation of a new interface with another Bi-SC AIS Functional Services, the PMIC will support integration and interoperability testing.

1.6.3.4.3. The NCI Agency will conduct an independent Security Test to obtain the Approved Fielded Product List (AFPL) accreditation on NATO Secret networks for the NEDB-NG.

1.6.3.4.4. The Contractor is responsible for successfully obtaining security accreditations of the NEDB-NG system.

1.6.3.4.5. The Contractor is responsible for successfully obtaining listing on the necessary AFPL. This includes the provision of the required product documentation and actively supporting the product testing

1.6.3.4.6. After the security test phase and the accreditation approval for the AFPL, the NEDB-NG shall be installed on a designated server in the NATO Secret infrastructure to achieve the Initial Operational Capability.

1.6.3.4.7. The Initial Operational Capability (IOC) is achieved when the NEDB-NG has been deployed to the selected sites and User Acceptance Test has been completed.

1.6.3.5. Work Package 5 – Site Survey and Site activation

1.6.3.5.1. In this work package the operational use of the IOC version will be evaluated and user remarks will be considered for implementation updates. The Contractor shall implement the required updates for the Final System Acceptance (FSA).

1.6.3.5.2. The Contractor will perform a Site Survey for all designated sites and plan activities to install the IOC version at the designated sites. Each Site installation will be validated for the availability to the users at their locations.

1.6.3.5.3. The Full Operational Capability (FOC) is achieved when the system implementing all contractual requirements has been installed at all requested sites and is ready to be used for the Final System Acceptance.

1.6.3.6. Work Package 6 – Training Support

1.6.3.6.1. The Contractor shall develop training packages and training courses to be delivered to the sites; this includes training for system administrators as well as end-user training for the different User Roles. In addition, the Contractor will provide an (updated) train-the-trainer package and courses to JEWCS.

1.6.3.6.2. The Contractor shall provide initial training to Adminstrators from the NCI Agency and to database Users from JEWCS and NATO Nations for a maximum of sixty(60) students.

1.6.3.7. Work Package 7 – System Support

1.6.3.7.1. In this work package the contractor shall first demonstrate its ability to perform the required operational and maintenance support, followed by performing the support activities with the purchaser's staff, including test and data migration

1.6.3.7.2. The Contractor shall develop the Support documentation such as the Integrated Logistics Support Plan (ILSP), O&M Manuals, IT-Continuity Plan, and User Manuals and other support documentation if required by this SoW.

1.6.3.7.3. The Contractor shall provide Customer Support from IOC to FSA (1st, 2nd, and 3td Level Support).

1.6.3.7.4. The Contractor shall maintain the NEDB-NG Product baseline from IOC to FSA (1st, 2nd, 3rd, and 4th Level Maintenance).

1.6.3.8. Work Package 8 – Third Level Software Support (Optional)

1.6.3.8.1. After FSA the contractor shall provide 3rd level support for five (5) years.

1.6.3.8.2. The support will comprise of:

1.6.3.8.2.1. Implementation of necessary changes in the software necessary to keep it operational and interoperable;

1.6.3.8.2.2. Upgrades in the underlying COTS and Operating System;

1.6.3.8.2.3. Adaptations in NATO and international standards defining system interfaces.

1.6.3.9. Work Package 9 – COTS Hardware and Software Licenses (Contract Option)

1.6.3.9.1. This Work Package addresses Hardware and Software Licenses provided by the Purchaser. In Annex B an overview is given of the hardware systems and software licenses.

2. Applicable Documents

2.1. Reference documents

2.1.1. NATO Emitter Database documents are listed below:

Reference	Title	Classification
NATO JEWCS	NEDB Manuals Part 1 and 2 (Edition 3)	NR
NATO JEWCS	NEDB Manuals Part 3 and 4 (Edition 3)	NS
NATO JEWCS	NEDB Manual Part 5 (Edition 3)	NC
NATO JEWCS	NEDB-EO Manuals Part 3, 4 and 5 (Edition 3)	NR
STANAG 6009	NATO Emitter Database	NU

2.1.2. The Security documents are listed below:

Reference	Title	Classification
AC/35-D/1014-REV2	“Guidelines for the structure and content of Security Operating Procedures (SecOPs) for ADP Systems and Networks”, 19 October 2006	NU
AC/35-D/1015-REV2	“Guidelines for The development of security Requirement Statements” (SRSs), 29 April 2010	NR

AC/35- D/1021-REV2	"Guidelines for the Security Approval or Security Accreditation of Communication and Information Systems (CIS)", 9 Oct 2003	NU
AC/35- D/2004-REV1	"Primary Directive on INFOSEC",19 Oct 2006	NR
AC/35-D/2005-REV2	INFOSEC Management Directive for CIS, 19 Oct 2006	NR
AC/322(2013)	Confidentiality labelling of NATO information	NU
AC/322-D/0030-REV4	"INFOSEC Technical and Implementation Directive for the Interconnection of Communications and Information Systems (CIS)", 17 Oct 2005	NR
Bi-SC AIS	Bi-SC AIS Community Security Requirement Statement (CSRS) for Secure Automated Information System (AIS), Version 1.0, 11 July 2012	NR
C-M(2002)49-COR6	"Security within the North Atlantic Treaty Organisation (NATO)", 9 Dec 2008	NU
CSRS	"Community Security Requirement Statement for Bi-Strategic Command Communication and Information Systems" Version 1.0, 23 Aug 2005	NR
AC/35 – D/2000 – REV7	Directive on Personnel Security	NU
AC/35 – D/2001 – REV2	Directive on Physical Security	NU
AC/35 – D/2002 – REV4	Directive on Security of Information	NU
AC/35 – D/2003 – REV4	Directive on Industrial Security	NU
AC/35-D/2004-REV3	Primary Directive on CIS Security	NU
AC/322-D(2006)0041-REV1	Directive on the Selection and procurement of NATO Common-Funded Cryptographic Systems, Products and Mechanisms	NU

AC/322-D/0047-REV2 (INV)	INFOSEC Technical & Implementation Directive on Cryptographic Security and Cryptographic Mechanisms	NU
AC/322-D/0048-REV2	INFOSEC Technical & Implementation Directive for Computer and Local Area network (LAN) Security	NR
AC/322-D(2006)0041-REV1	Directive on the Selection and Procurement of NATO Common-Funded Cryptographic Systems, Products and Mechanisms	NU
AC/322-D(2007)0036	INFOSEC Technical & Implementation Directive on Emission Security	NR
AC/35 – D/2005 – REV2	INFOSEC Management Directive for Communication and information Systems (CIS)	NU
AC/35-D/1021-REV3	Guidelines for the Security Approval or Security Accreditation of CIS	NU
AC/35-D/1017 – REV2	Guidelines for Security Risk Assessment and Risk Management of CIS	NU
AC/35-D1015 – REV3	Guidelines for the Development of Security Requirement Statements (SRSs)	NR
AC/35-D/1014-REV3	Guidelines for the Structure and Content of Security Operating Procedures (SecOPs) for CIS	NU
AC/322-D/0030-REV5	INFOSEC Technical & Implementation Directive for the Interconnection of Communication and Information Systems (CIS)	NR
AC/322-D(2005)0040	INFOSEC Technical & Implementation Guidance for the Interconnection of Communication and Information Systems (CIS)	NU
AC/322-D(2004)0030	INFOSEC Technical and Implementation Directive on the requirement for, and the Selection, Approval and Implementation of Security Tools	NR
AC/322-D(2004)0022(INV)	INFOSEC & Technical and Implementation Guidance for Consistent Marking of NATO Information in C3 Systems	NU
AC/322-	INFOSEC Technical and Implementation Guidance for the Protection of CIS from Malicious Software	NU

D(2004)0019(INV)		
AC/322-D(2007)0047	INFOSEC Technical and Implementation Supporting Document on the Use of Shared Peripheral Switches	NR
AC/322-D(2005)0044	INFOSEC Technical and Implementation guidance on Identification and Authentication	NR
AC/322-D(2008)0002	INFOSEC Technical and Implementation Supporting Document on Securing Domain Name System Services	NR
AC/322-D(2014)0010	NATO Core Metadata Specification (NCMS), 18 Dec 2014	NU
AIS-CSRS	Secure Automated Information System (AIS) Community Security Requirements Statement (CSRS)	NU
PBN-CSRS	Protected Business Network Environment (PBN) Community Security Requirements Statement (CSRS)	NU

2.1.3. The Allied Quality Assurance Publications (AQAP) and Allied Reliability and Maintainability Publications (ARMP) are listed below:

Reference	**Title**	**Classification**
AQAP-2009	NATO guidance on the use of the AQAP 2000 series, Edition 2, 2006	NU
AQAP-2110	NATO QA Requirements for Design, Development and Production, Edition 2, 2006	NU
AQAP-2210	NATO Supplementary Software Quality Assurance Requirements to AQAP-2110, Edition 1, 2006	NU
AQAP-2070	NATO Mutual Government Quality Assurance (GQA) Process, Edition 1, 2004	NU
AQAP-150	NATO QA Requirements for Software Development, ed. 2, Sep 1997	NU
AQAP-159	NATO Guidance for the use of AQAP-150, ed.3	NU
AQAP-160	NATO Integrated Quality Requirements for Software throughout the Life Cycle, Edition 1, 2001	NU
AQAP-169	NATO Guidance for the use of AQAP-160, Edition 1	NU

ARMP-1	NATO Requirements for Reliability and Maintainability, ed.4	NU
ARMP-4	Guidance for writing NATO R&M Requirements Documents, ed.4	NU
ARMP-6	Guidance for Managing IN-Service R&M, ed.3	NU
ARMP-7	NATO R&M Terminology applicable to ARMPs, ed.2	NU
ARMP-9	Guide to the Management of Software R&M, ed.1	NU

2.1.4. Other NATO Documents

Reference	**Title**	**Classification**
ACMP-1	NATO Requirements for the Preparation of Configuration Management Plans	NU
ACMP-2	NATO Requirements for Configuration Identification	NU
ACMP-3	NATO Requirements for Configuration Control – Engineering Changes, Deviations and Waivers	NU
ACMP-4	NATO Requirements for Configuration Status Accounting and Configuration Data Management	NU
ACMP-5	NATO Requirements for Configuration Audits	NU
ACMP-6	NATO Configuration Management Terms and Definitions	NU
ACMP-7	NATO Configuration Management – Guidance on the Application of ACMP 1 to 6	NU
AC/322(SC/5) L(2006)0001	NATO Communication and Information Systems Configuration Management Policy, Version 2.2, 2006	NU
AC/322(SC/5) L(2006)0001 Enclosure 2	NATO Communication and Information Systems Configuration Management Directive, Version 1.0, 2006	NU
AC/322(SC/1-WG/1)N(2009) 0005-ADD2	NATO Architecture Framework (NAF) Ver. 3.1	NU

AdatP-34	Allied Data Publication 34(G) Adat-P34 NISP Volume 1	NU
Bi-SC Directive 75-7	"Education & Individual Training (E&IT)", 13 September 2012	NU
NCSA OSLA-14-02	Preparation of NATO CIS Integrated Logistics Support Plans (ILSP), 2nd Revision,	NU
STANAG 4107	Mutual Acceptance of Government Quality Assurance and Usage of the Allied Quality Assurance Publications	NU
STANAG 4174	Allied Reliability and Maintainability Publications (ARMP), Edition 3, 2008	NU
STANAG 4427	Introduction of Allied Configuration Management Publications (ACMP), Edition 2, 2007	NU
STANAG 6001	Language Proficiency Levels Edition 4, 12 October 2010	NU

2.1.5. Non-NATO Documents

Reference	**Title**
IEEE Standard 12207- 2008	IEEE Standard for Information Technology – Software Life Cycle Processes
IEEE Standard 1058	IEEE Standard for Software Project Management Plans
IEEE Standard 1016	IEEE Recommended Practice for Software Design Descriptions
ISO 13407:1999	Human-centred Design Processes for Interactive Systems
UML	Unified Modelling Language (UML) 2.1, Object Modelling Group

ISO/IEC 1007	Quality management systems – Guidelines for Configuration Management, Edition 1, 2003
ISO/IEC 20000-1	Information Technology - Service Management, Part1: Specification, Edition 1, 2005
ISO/IEC 20000-2	Information Technology – Service Management, Part2: Code of Practice, Edition 1, 2005
ISO/IEC 12207	Systems and Software Engineering - Software Life Cycle Processes, Edition 2, 2008
ISO/IEC/IEEE 15288	Systems and Software Engineering - System Life Cycle Processes, Edition 2, 2008
ISO/IEC 14764	Software Engineering - Software Life Cycle Processes – Maintenance, Edition 1, 2006
ASD SX000i	International guide for the use of the S-Series Integrated Logistic Support (ILS) specification, Issue 0.2, 2015
ASD S3000L	International procedures specification for Logistics Support Analysis, Issue No. 1.1, 01 Jul 2014

3. Project Management

3.1. General

3.1.1. The NCI Agency Project Manager (PM), who will act as the Purchaser's technical and programmatic representative, will be the primary interface between the Contractor and the NCI Agency starting from the Effective Date of Contract (EDC).

3.1.2. The NCI Agency Project Manager will be supported by specialists in certain areas who may, from time to time, be delegated to act on the Project Manager's behalf in their area of expertise.

3.1.3. The Project Manager, or any of the specialist support staff, may not make changes to the terms and conditions of the Contract but may only provide the Purchaser's interpretation on technical matters.

3.1.4. The NCI Agency will provide the Contractor with technical descriptions of existing NATO systems as required for the purpose of determining specific interface requirements between the NEDB-NG capability and these systems.

3.1.5. The NCI Agency will make available to the Contractor the facilities necessary to test and demonstrate NEDB-NG compliance with required interfaces to existing NATO systems.

3.1.6. The NCI Agency shall provide the security settings for servers, workstations, and wide area network connections.

3.1.7. The NCI Agency will provide test and integration facilities for the NEDB-NG at its premises in The Hague, Netherlands. The facilities shall be remotely accessible and shall form both a reference facility and a project management centre for the development.

3.1.7.1. As such the facility, currently known as the Programme Management and Integration Capability (PMIC), shall provide reference operating systems/networks having NATO security settings and also NEDB-NG applicable information objects. Further it will provide access to those Core Services on which the NEDB-NG capability is to depend.

3.1.7.2. At the Integration Testbed, the NCI Agency will provide access to those Core Services on which the NEDB-NG capability is to depend.

3.1.7.3. Upon a request, the Contractor will receive remote access via internet VPN to PMIC sub-network, as required to conduct development and testing.

3.1.8. The NCI Agency will provide the facilities, operational links, and interfaces required for installation tests, System Activation tests, and Operational Tests.

3.1.9. The NCI Agency PM will engage IV&V Representative support for the NEDB-NG Project. The main objective of the IV&V activity will be the evaluation of the performance of the main NEDB-NG Contractor and the verification and validation of the work being performed under the related effort, in particular evaluation of Contractor deliverables. The IV&V Representative will also monitor, assess, and report on the NEDB-NG Contract in order to identify, as early as possible, perceived problem areas.

3.1.10. The IV&V Representative may be requested by the NCI Agency PM to monitor Contractor activities at Contractor’s facilities or other sites related to the development, testing and implementation of the NEDB-NG capability. The Contractor shall fully support such activities and in particular:

3.1.10.1. Host inspection visits by IV&V Representative,

3.1.10.2. Make himself available for answering questions and furnishing information related to the project,

3.1.10.3. Allow the IV&V Representative to inspect and monitor testing activities, and

3.1.10.4. Allow the IV&V Representative to inspect and monitor the Contractor’s processes applicable to this project.

3.1.11. The Contractor shall transfer to the IV&V Representative all information deemed necessary to perform the IV&V activities, on his own initiative or on request by the IV&V Representative or the NCI Agency PM.

3.1.11.1. Information that the Contractor shall transfer to the IV&V Representative, shall include, but not limited to, the following: minutes of CCB meetings, planning documents, source code, requirements documents and database, design, test, and other technical documentation.

3.1.12. The NCI Agency PM may engage the IV&V Representative to review any Contract deliverables on behalf of the Purchaser.

3.1.13. The NCI Agency PM will establish an Integrated Project Management Team to coordinate support to this project at the working level. Support from NCI Agency experts and NEDB users is essential during the project to properly transfer knowledge residing within the current NEDB to be industrialised.

3.2. Integrated Project Management Team (IPMT)

3.2.1. The IPMT comprises the key stakeholders in NEDB-NG and serves as the primary mechanism for monitoring project status, resolving issues or conflicts within the project, and advising the NCI Agency Project Manager.

3.2.2. The Purchaser's NEDB-NG Project Manager chairs the NEDB-NG Integrated Project Management Team.

3.2.3. The other members are the designated representatives of NATO JEWCS, technical experts within the NCI Agency and other NATO bodies.

3.2.4. The Contractor shall provide its inputs to the IPMT via the NCI Agency Project Manager.

3.3. Project Management Organization

3.3.1. The Contractor shall organise a Project Management Office (PMO) to perform and manage all efforts and responsibilities under this Contract.

3.3.2. The Contractor shall provide all necessary manpower and resources to conduct and support the management and administration of operations in order to meet the objectives of the project, including taking all reasonable steps to ensure continuity of personnel assigned to work on this project. The personnel identified below as Key Personnel shall be considered in accordance with the Special Provisions of this Contract.

3.3.3. The Contractor shall identify by name and qualifications five leading roles in the Contractor's organization:

3.3.4. Project Manager (Designated Key Personnel),

3.3.5. Technical Lead (Designated Key Personnel),

3.3.6. Test Lead,

3.3.7. Quality Assurance Lead,

3.3.8. Integrated Logistic Support Expert

3.3.9. Security Staff and Document Authors.

3.3.10.

3.3.11. The Contractor shall designate a **Project Manager** (PM), who will direct and co-ordinate the activities of the Contractor's.

3.3.11.1. The Project Manager shall be the Contractor's primary contact for the Purchaser's NEDB-NG Project Manager and shall conduct all major project design, test, and status reviews.

3.3.11.2. The Project Manager shall be prepared at all times to present and discuss the status of Contract activities with the Purchaser's Project Manager, Contracting Officer, or Technical Lead project team.

3.3.11.3. The Project Manager shall assist the Purchaser's Project Manager in assessing of cost, schedule, and performance trade-offs within the scope of this Contract.

3.3.11.4. The Project Manager shall serve as point of contact for the IV&V Contractor.

3.3.11.5. The Project Manager shall meet the qualifications of **Project Manager** as specified in 7.2.1.

3.3.12. The Contractor shall designate a **Technical Lead** for the project.

3.3.12.1. The Technical Lead shall lead the analysis, design, development, integration, and follow-on enhancement efforts of the Contractor.

3.3.12.2. The Technical Lead shall meet the qualifications of a **Senior Engineer** and **Senior Systems Engineer** as specified in Senior Engineer 7.3.1 and 7.3.4, respectively.

3.3.13. The Contractor shall designate a **Test Lead** for all test activities conducted under this Contract.

3.3.13.1. The Test Lead shall meet the qualifications of **Senior Test Engineer** as specified in 7.3.18.

3.3.14. The Contractor shall designate a qualified individual to serve as the **Quality Assurance Lead** for activities under this Contract.

3.3.14.1. The Quality Assurance Lead shall report to a separate manager within the Contractor's organisation at a level equivalent to or higher than the Project Manager.

3.3.14.2. The Quality Assurance Lead shall meet the qualifications of Quality Assurance Manager as specified in 7.4.3.

3.3.14.3. If the Contractor uses Subcontractors in the execution of the project, each Subcontractor should also appoint a Quality Assurance Lead for their deliverables and they should work in coordination of the Prime Contractor's Quality Assurance Lead.

3.3.14.4. The Contractor should designate Quality Engineers to work under the supervision of the Quality Assurance Lead for all Quality actions to be taken during the lifetime of the project.

3.3.15. The Contractor shall designate a qualified individual to serve as the **Integrated Logistics Support (ILS) Expert** for activities under this Contract.

3.3.15.1. The ILS Expert shall report to a separate manager within the Contractor's organisation at a level equivalent to the Purchaser ILS Officer.

3.3.15.2. The ILS Expert shall meet the qualifications of the **Senior ILS Engineer** as specified in 7.7.1.

3.3.16. The Contractor shall manage the project using an industry-standard Project Management methodology (such as PRINCE2) using tools and techniques relevant for the applied methodology.

3.4. The Project Management Plan (PMP)

3.4.1. The Contractor shall prepare and submit a Project Management Plan (PMP) that shall describe how the Contractor will implement the totality of the project, including details of the project control that will be applied.

3.4.2. The Contractor shall define in this plan the details of liaison between the Purchaser, the Contractor and any sub-contractors.

3.4.3. The Contractor’s PMP shall cover all aspects of project implementation including management provisions, facilities, schedules, personnel assignments, external relationships and project control.

3.4.4. The PMP shall be sufficiently detailed to ensure that the Purchaser is able to assess the Contractor plans with insight into the Contractor’s plans, capabilities, and ability to satisfactorily implement the entire project in conformance with the requirements as specified in this SOW.

3.4.5. The PMP shall describe how the various project management processes (CM, RM, QM, etc.) are integrated, either via a tool set and/or internal project management practices.

3.4.6. The PMP shall describe how the Project Website and Collaborative Working Environment will be used to maintain communication between the Purchaser and the Contractor.

3.4.7. The Contractor shall include in the PMP the following sections and provide the major plans required under this Contract:

A. Project Work Break Down Structure

B. Project Master Schedule

C. Work Package Management

D. Product Breakdown Structure

E. Risk Management

F. Quality Management

G. Configuration Management Plan (presented as a separated document to be maintained post FSA)

H. Integrated Logistics Support Plan (ILSP) (presented as a separated document to be maintained post FSA)

I. Transition Plan

J. Transportation Plan

K. Test and Acceptance Plan

L. Documentation

M. Training

N. Personnel

3.4.8. The PMP shall describe the relationship between the PMP and subordinate plans: Project Definition and Implementation, Test and Acceptance, ILSP, Quality Management Program, Documentation and Training.

3.4.9. The Contractor shall ensure that the PMP remains current throughout the duration of the Project to reflect the actual state of the Contractor's organisation and efforts, and maintain a current copy on the Project Website.

3.4.10. The approval of the PMP by the Purchaser signifies only that the Purchaser agrees to the Contractor’s approach in meeting the requirements. This approval in no way relieves the Contractor from its responsibilities to meet the requirements stated in this Contract. The requirements of the Contract supersede any statement in the PMP in case of any conflict, ambiguity or omission.

3.5. Project Work Break Down Structure

3.5.1. The Contractor shall establish and maintain a Project Work Breakdown Structure (PWBS).

3.5.2. The PWBS shall define the major work packages and the relationship between the work packages and the end product.

3.5.3. The PWBS shall describe the work packages to a level that exposes all project risk factors and allows accurate estimate of each work item’s duration, resource requirements, inputs and outputs, and predecessors and successors.

3.5.4. The PWBS shall include a PWBS Dictionary that identifies for each work item its duration, resource requirements, inputs and outputs, predecessors and successors, assumptions, constraints, dependencies, and requirements for Purchaser support.

3.5.5. The Contractor shall plan work contained within the lowest-level PWBS components in the Work Packages (WPs).

3.5.6. The PWBS shall be used as the primary framework for Contract planning and reporting to the Purchaser.

3.5.7. The Contractor shall not change the PWBS or PWBS Dictionary, without the approval of the Purchaser.

3.6. Project Master Schedule

3.6.1. The Contractor shall establish and maintain a Project Master Schedule (PMS) that contains all Contract events and milestones, including Contract-related Purchaser and IV&V activities and events (e.g., Purchaser reviews, provision of specific Purchaser-furnished items). The PMS shall correlate with the PWBS and also be traceable to performance and delivery requirements of this SOW.

3.6.2. Subject to approval of the Purchaser, the Contractor shall use the Microsoft Project 2010 or later versions. The PMS shall be made available on the Project Website.

3.6.3. The PMS shall depict the sequence, duration, and relationship among PWBS, Task orders, work packages and work items, including internal QA events.

3.6.4. The PMS shall identify the start and finish dates, duration, predecessors, successors, and resource requirements for each work item.

3.6.5. The PMS shall include the delivery dates for all management products (e.g., project plans, Project Highlight Reports), including at least the initial version and the final one.

3.6.6. The PMS shall include activity network, activity Gantt, milestone, and critical path views of the project schedule.

3.6.7. The initial version of the PMS shall, upon Purchaser Acceptance, be placed under the NEDB-NG Configuration Control Board (CCB).

3.6.8. Thereafter, the Contractor shall maintain the baseline version of the PMS on the Project Website.

3.6.9. The Purchaser Project Manager without consulting the other NEDB-NG CCB members can approve changes to the PMS that do not affect other baseline documents or incur additional costs.

3.6.10. The Contractor shall provide the Software Requirements Specifications with the requirements baseline for NEDB-NG.

3.7. Work Package Management

3.7.1. The Contractor shall prepare draft Work Packages as requested by the Purchaser.

3.7.2. The Contractor shall ensure that all confirmed Work Packages are reflected in the PMP, PWBS and PMS.

3.7.3. The Contractor defined Work Packages shall be at least at the level of the Work Packages provided in the Annex B of the SOW.

3.7.4. The Contractor defined Work Packages shall describe schedule, and cost and resources of the work to be done.

3.7.5. The Contractor shall provide links between Work Packages, the scope defined in the Project Work Breakdown Structure (PPBS) and Project Master Schedule (PMS).

3.8. Risk Management Program

3.8.1. The Contractor shall establish a risk management program and perform risk management throughout the period of performance of this Contract.

3.8.2. The Contractor shall establish and maintain a Risk Log for the project.

3.8.3. In the Risk Log, the Contractor shall identify any management, technical, schedule, and cost risks.

3.8.4. The Contractor shall rate each risk as High, Medium, or Low, based on its probability of occurrence and its impact on cost, schedule, and quality.

3.8.5. The Contractor shall identify for each risk the measures being taken to mitigate any risk rated as high on any factor and make an assessment of the risk rate in case of implementation of the mitigation measures.

3.8.6. The Contractor shall make the Risk Log available on the Project Website. The Contractor shall include in the Project Highlight Report a chart that lists all active risks rated high on any factor and note any significant forecasted changes in these risks.

3.8.7. The Contractor shall update and brief the Risk Log at all Project Checkpoint Reviews and Formal Reviews.

3.9. Quality Management Program

3.9.1. The Contractor shall establish, execute, and maintain an effective Quality Management program throughout the Contract lifetime.

3.9.2. It shall be based on AQAP-2110 ed. 2, which incorporates by reference ISO 9001 directive, and on AQAP-160 ed.1.

3.9.3. The software development shall follow the process defined in ISO/IEC 12207.

3.9.4. The program shall ensure that procedures are developed, implemented and maintained to adequately control the design, development, production, testing, configuration management, and support of all deliverables.

3.9.5. The Quality Management Program should be documented in a Quality Assurance Plan (QAP), to be delivered with the Project Implementation Plan.

3.9.6. The Contractor shall establish and maintain, as part of the Project Website, a project Quality Log, as specified in PRINCE2, that lists all planned and performed quality checks on Contractor deliverables.

3.9.7. If sub-contracted quality resources are used, the Quality Management Program shall describe the controls and processes in place for monitoring the sub-Contractor's work against agreed timelines and levels of quality.

3.10. Configuration Management Plan

3.10.1. The requirements of the Contract concerning Configuration Management are set forth in Section 5.

3.10.2. The Contractor shall provide the Configuration Management Plan and Configuration Management organisation.

3.10.3. Under the Configuration Management Plan the Contractor shall maintain and update all project CIs as requested by changes within the project or external to the project throughout the duration of the contract.

3.10.4. The Contractor shall adapt the CMP structure to the Project capability scope

3.10.5. The Contractor shall establish and maintain product-based planning which shall include a product description of the final product of the project, a Project Product Breakdown Structure (PPBS), Product Descriptions of each product and a Product Flow Diagram

3.10.6. The Contractor shall present the configuration Management Plan for Purchaser approval not later than the project “PMR” milestone.

3.10.7. The CMP shall assure the establishment and maintenance of configuration item records, configuration item life cycle records, and baselines throughout the duration of the contract and provide assurance that all changes to the baselines are performed through a formal change control process once a baseline has been established and agreed.

3.10.8. The Contractor’s CMP shall be compliant with ACMP-1

3.10.9. The CMP shall be structured as a living document subject to revisions and updates, as required. The Contractor shall place the plan under configuration control prior to its implementation and for the life of the Contract.

3.10.10. The CMP shall identify, document and justify the organisational structure, roles and responsibilities, tasks, milestones and procedures to be used by the Contractor to implement the CMP and fulfil the requirements of this Contract.

3.10.11. The CMP shall be compatible and consistent with all other plans, specifications, standards, documents and schedules.

3.10.12. All Contractor and Purchaser activities and milestones related to CM shall be identified and included in the Project Master Schedule (PMS) of the PMP in the PIP.

3.10.13. The CMP is a Product Lifecycle document that will survive the project post-FSA. As such, this documents are not to be submitted as part of the PIP, but will be part of the Technical Proposal.

3.11. Integrated Logistics Support Plan

3.11.1. The Contractor shall provide and maintain an Integrated Logistic Support Plan, tailored to the Project Program phases. The plan shall be developed in accordance with the requirements described in Section 6 below.

3.11.2. The ILS Plan is a standalone Product Lifecycle documents that will survive the project post-FSA. As such, these documents are not to be submitted as part of the PIP, but will be part of the Technical Proposal.

3.11.3. The Contractor shall present the ILS Plan for Purchaser approval not later than the project “CDR-IOC” milestone.

3.11.4. The contractor shall ensure compatability between the ILS management documentation and the System Management Plan by providing the ILS relevant inputs for the System Management Plan

3.12. Transition Plan

3.12.1. The Contractor shall develop and maintain the NEDB-NG Transition Plan that defines the hand-over of NEDB-NG Product Baseline software and documentation from the Contractor to the Purchaser Implementation Authority (IA), Service Provision Authority (SPA), and Operating Authority (OA).

3.12.2. The Contractor shall present the Transition Plan for Purchaser approval not later than the project “CDR-IOC” milestone.

3.12.3. The Transition Plan shall be inserted into the NEDB-NG ILSP.

3.12.4. The Transition plan shall include and describe, as a minimum, the following resources and processes:

- Schedule and Coordinate transition planning meeting
- Review development project schedule
- Review deliverables list to determine requirements
- Develop matrix of required resources/skills and Conduct skill gap analysis against all staff
- Identify project activities to be completed before transition can start
- Determine timeline and Establish transition milestones
- Determine actual training needed, based on gap analysis
- Determine roles and responsibilities (such as collect, review, accept deliverables, resolve variances,etc.)
- Establish support expectations for IS
- Develop training plans
- Identify necessary training courses
- Schedule classes
- Identify necessary knowledge transfer activities
- Determine measurable tasks to validate that knowledge transfer is acceptable

3.12.5. The Transition Plan shall include the final Handover checklist which shall be approved by the purchaser before the final handover.

3.13. Transportation Plan

3.13.1. The Contractor shall develop and maintain the NEDB-NG Transportation Plan that defines all planned (partial-) shipments, locations, point of contact(s), transportation stages, schedules, and alternative schedules.

3.13.2. The Transportation Plan shall offer alternative schedules with associated impact on the overall cost and schedule.

3.13.3. The Transportation Plan shall describe the end-to-end route, stages, and schedule of the PBL CI transportation from the Contractor's origin to its final operational destination.

3.13.4. The Contractor shall present the Transportation Plan for Purchaser approval not later than the project “CDR-IOC” milestone.

3.13.5. The Transportation Plan shall be inserted into the NEDB-NG ILSP.

3.13.6. Detailed requirements about transportation and PHST are described in Section 6.6 of this SoW

3.14. Training Plan

3.14.1. The Contractor shall develop and maintain the NEDB-NG Training Plan. The Training Plan shall be structured according to the template provided in the SOW (Bi-SC Directive 75-7 Annex-J) and address the results of the Training Needs Analysis.

3.14.2. The contractor shall deliver the training plan in order to define and plan the activities related to the Training.

The training plan shall also identify and address technical and personnel resources to carry out the recurring training throughout the utilization phase.

3.14.3. The Contractor shall produce and maintain the preliminary plan of the training and exercise activities. The plan will contain, as a minimum:

- the definition of training needs;
- the approach to team training;
- the simulation campaign logic.

The plan will present the selected approach for maintaining team proficiency. The training shall be cost effective, with no impact on the ongoing operations, and sustainable in the long term.

3.14.4. The training plan shall include the assessment criteria required for the certification of the operator

3.14.5. The Contractor shall develop and maintain the Training Course Proposal and Justification (POI Document-II) based on the results of the Training Needs Analysis.

3.14.6. The Training Plan shall describe the training documentation.

3.14.7. The Training Plan shall describe the support to be provided by the Purchaser (manpower, services and material).

3.14.8. The Contractor shall adapt the Training Plan structure to the NEDB-NG scope and submit it for Purchaser approval not later than the project “CDR-IOC” milestone.

3.14.9. The Contractor shall prepare the Operations Training Needs Analysis (TNA) document, to process all information relevant for the definition of training requirements, providing:

- Inventory of all operations tasks for which training must be undertaken;
- Staff eligible for training, including the definition of training objectives and schedules;
- Definition of training documentation;
- Tracking of training progress made by the trainees.

3.14.10. For each new facility or upgrade the Contractor shall continuously identify the training needs required for its operations, organise the required training sessions and update the personal Training Records accordingly.

3.14.11. The Training Needs Analysis shall be included, as annex, in the Training plan.

3.15. Personnel

3.15.1. The Contractor shall ensure that all Contractor and Subcontractor personnel that shall work on a NATO site or have access to NATO SECRET information and facilities shall have, at a minimum, a valid NATO SECRET clearance as required by NATO policy.

3.15.2. The Contractor shall provide proof that each team member is in possession of a valid NATO Secret security clearance prior to Contract Award.

3.15.3. The Contractor shall process all Contractor and Subcontractor personnel through NATO security at each site, adhering to their procedures for clearances, to obtain security badges for the duration of the on-site activities.

3.16. Project Website and Collaborative Working Environment

3.16.1. The Contractor shall use an unclassified but managed Project Website and Collaborative Working Environment (Microsoft SharePoint based) on which all relevant unclassified NEDB-NG project documentation and datasets shall be maintained. This shall allow the Purchaser, the Contractor, NEDB-NG project team, and IV&V Contractor to share content, collaborate and work efficiently online as a team.

3.16.2. The Project Website shall allow access to all relevant project information.

3.16.3. The Collaborative Working Environment shall provide tools for co-development of project documents and supporting project communication.

3.16.4. The Collaborative Working Environment shall allow registering and monitoring implementation of the issues identified in the software deployed by the Contractor either on the operational environment or in the testbed.

3.16.5. The Project Website and Collaborative Working Environment shall identify all relevant classified documents by title, unless a title is itself classified.

3.16.6. The Project Website and Collaborative Working Environment shall allow the Purchaser read-only access to the Issue Log, Risk Log, Quality Log, Project Master Schedule, and other datasets and tools required by this SOW.

3.16.7. The Website and Collaborative Working Environment will be provided to the Contractor through the Bi-SC AIS PMIC facility at the NCI Agency The Hague location and will be available remotely for all relevant stakeholders.

3.16.8. The Contractor shall implement an access control mechanism to restrict viewing of any documentation on the Project Website and Collaborative Working Environment to a list of users approved by the Purchaser and administered by the Contractor.

3.17. Project Meetings, Reviews and Reports

3.17.1. General

3.17.1.1. The Project meetings shall be conducted in one of the Purchaser's facilities when a face to face meeting is required between Contrator and Purchaser. Video or telephone conferences may also be accepted when time or travel constraints are involved

3.17.1.2. The Contractor shall send the invitation at least two weeks before a Project meeting.

3.17.1.3. The content of the Project meeting invitation shall include:

Serial	Requirement
1	Purpose
2	Agenda
3	List of participants
4	Date, hour, place, duration

Table 3 – Content of Invitations to Meetings

3.17.1.4. The Contractor shall record Project meeting minutes for Purchaser review and post them on the Project Website within 3 working days after the meeting.

3.17.1.5. The Project meeting minutes shall include:

Serial	Requirement
1	Input documents
2	Time and date of the event
3	Participants
4	Comments raised
5	Decisions/actions taken

Table 4 – Content of Minutes of Meetings

3.17.1.6. The Project meeting minutes shall only be used to record the progress of the project and identify the problems to be resolved. It is not to be used to change the terms, conditions or specifications of the Contract, or the design or configuration of equipment or systems. Such changes shall only be made by, Contract amendment or by authorised mechanisms as set forth in the Contract.

3.17.2. Formal Reviews

3.17.2.1. The Contractor shall plan and execute the following Formal Reviews with the Purchaser's IPMT:

Serial	Requirement
1	Project Management Review (PMR)
2	System Requirements Review (SRR)
3	Preliminary Design Review (PDR)
4	Critical Design Reviews (CDR)
5	Test Readiness Review (TRR)
6	Deployment Readiness Review (DRR)
7	Training Materials Review (TMR)

Table 5 – List of Formal Reviews to be Conducted

3.17.2.2. The Contractor shall send at least two weeks before each Formal Review, the invitation to the Purchaser's IPMT.

3.17.2.3. The content of the Formal Review invitation shall include:

Serial	Requirement
1	Agenda
2	List of participants,
3	Date, hour, location of the Formal Review

3.17.3. Project Management Review

3.17.3.1. The Contractor shall execute the Project Management Review.

3.17.3.2. The purpose of the PMR is to approve the scope and the plan for Contractor activities provided within this Contract.

3.17.3.3. The PMR meeting shall be hosted by the Contractor.

3.17.3.4. The Contractor shall provide the following documents for the PMR:

Serial	Requirement
1	Project Website & Collaboration Environment
2	Project Management Plan (PMP)
3	Configuration Management Plan (CMP)

4	Quality Assurance Plan (QAP)
5	Product Breakdown Structure (PBS)
6	Work Breakdown Structure (WBS)
7	Project Master Schedule (PMS)
8	System Development Plan (SDP)
10	Risk Log
11	Quality log
12	Issue Log

Table 6 – Input to the Project Management Review

3.17.4. Project Checkpoint Reviews

3.17.4.1. The Contractor shall conduct Project Checkpoint Reviews (PCR) at least once a month throughout the Contract period. The PCR allows the Purchaser to monitor the status and the progress of the project.

3.17.4.2. In general the PCRs shall take place in the week after delivery of the Project Highlight Report (PHR). Deviation is allowed when other business is involved.

3.17.4.3. The Contractor shall monitor the progress of the project and record potential risks in the Risk Log.

3.17.4.4. The Contractor shall discuss potential risks with the Purchaser as soon as possible and not delay until the next PCR.

3.17.4.5. The Contractor shall organize the first PCR no later than two months after the Effective Date of Contract (EDC).

3.17.5. Project Highlight Report

3.17.5.1. The Contractor shall provide, no later than the third business day of each month, a Project Highlight Report.

3.17.5.2. The Project Highlight Report shall summarise activities, including:

Serial	Requirement
1	Summary of contract activities during the preceding month, including the status of current and pending Work Packages;
2	Progress of work and schedule status, highlighting any changes since the preceding report;
3	Status of action items
4	Description of any identified problems, anomalies and high risk areas with proposed solutions and corrective actions;
5	Test(s) conducted and results;
6	List and status of Contractual Items submitted to Purchaser’s acceptance;

7	Changes in key Contractor personnel, as approved by the Purchaser;
8	Summary of Change Requests requested, recommended or approved;
9	Summary of any site surveys conducted;
10	Report on maintenance calls by number, type, and actions taken;
11	Plans for activities during the following reporting period.

Table 7 – Content of Project Highlight Report

3.17.5.3. Item 2 “progress of work and schedule status” shall provide information to measure progress and performance, including the actual cost incurred by the Contractor under this Contract

3.17.5.4. The Contractor shall maintain an archive of Project Highlight Reports on the Project Website.

3.17.6. Issue Log

3.17.6.1. The Contractor shall maintain the project Issue Log.

3.17.6.2. The Contractor shall register in the Issue Log all issues communicated with the Purchaser.

3.17.6.3. The issue log shall describe the issues with:

3.17.6.3.1. unique identifier (ID)

3.17.6.3.2. description

3.17.6.3.3. initiation date

3.17.6.3.4. due date

3.17.6.3.5. taken action

3.17.6.3.6. status

3.17.7. Other Meetings

3.17.7.1. NEDB-NG Project Kick-Off Meeting

3.17.7.1.1. The NEDB-NG Project Kick-Off Meeting will take place two weeks after EDC.

3.17.7.1.2. The Contractor shall participate in the NEDB-NG project kick-off meeting with the Purchaser’s Project Manager and members of the NEDB-NG

Integrated Project Management Team (IPMT). This meeting will be held at the Purchaser's facility in Brussels.

3.17.7.1.3. The Contractor shall be prepared to present a draft Project Management Plan and review the organisation of the Project Website.

3.17.7.2. NEDB-NG IPMT and/or CCB meetings

3.17.7.2.1. The Contractor's Project Manager or designated representative shall participate in selected NEDB-NG Integrated Project Management Team (IPMT) and Configuration Control Board (CCB) meetings, as requested by the Purchaser's Project Manager.

3.17.7.2.2. The Contractor shall provide the status of all active change requests at the CCB meeting.

3.17.7.3. NEDB-NG Joint Technical Review meetings

3.17.7.3.1. The Contractor shall organise Joint Technical Review meetings to conduct reviews with NATO subject matter experts as specified in chapter 4.2.7.

3.17.7.3.2. The technical reviews shall be carried out in the formula of the workshops.

3.17.7.4. NEDB Advisory Group (NEDBAG) meetings

3.17.7.4.1. On request of the Purchaser the Contractor will participate in selected sessions of the NEDBAG meeting to support the NEDB User community.

3.18. Other Project Management Work

3.18.1. Other work that the Contractor shall perform as specified under appropriate activities under the Project Management Task Area includes:

3.18.1.1. Project and security risk analysis.

3.18.1.2. Presentations to Purchaser meetings or conferences.

3.18.1.3. Preparation of project information materials such as brochures, white papers, posters and a video presentation.

3.18.1.4. Preparation and maintenance, in coordination with the Purchaser, of a project Lessons Learned Log and project Issue Log.

4. Technical

4.1. General

4.1.1. This section outlines the Technical Task Area of the NEDB-NG Contract.

4.1.2. The Contractor shall design, develop, integrate, test, support accreditation and deliver the NEDB-NG. Furthermore, the Contractor shall provide engineering and support for the NEDB-NG.

4.1.3. The Contractor shall develop the System Design Specification (SDS) based on an analysis and a fine-tuning of the Purchaser's functional and non-functional requirements provided in the SRS; adapt and integrate the components to establish the NEDB-NG; and plan and execute a series of tests to confirm the NEDB-NG meets the functional and non-functional requirements.

4.1.4. The Contractor shall integrate the NEDB-NG with existing NATO systems and interfaces, and implement and prepare it for operation as part of the NATO Communications and Information Systems (CIS).

4.1.5. The Contractor shall install the NEDB-NG software to Purchaser-designated facilities in close coordination with the Purchaser’s staff.

4.1.6. The NEDB-NG capability shall be made available to its users as a webbased application running on the existing NATO Secret Wide Area Network (NSWAN).

4.1.7. NEDB-NG shall consist of a combination of custom-developed and off-the-shelf (whether commercially available or developed for other customers) systems.

4.1.8. NEDB-NG shall be built following a Component-Based Framework approach (CBF) for reusability of components and a Service Oriented Architecture (SOA) to provide for flexibility, scalability and agility, to minimise the impacts of future modifications to accommodate changes in other NATO systems and interfaces, as well as changes in the products and technologies employed in the NEDB-NG capability.

4.1.9. As authorised by the Work Packages, the Contractor shall be responsible for the overall design, development, integration, and system engineering of the NEDB-NG throughout all product baselines delivered under this Contract.

4.2. System development

4.2.1. The Contractor shall develop NEDB-NG in four (4) consecutive System Development and Integration Sprints , using this as a vehicle to consult with the Purchaser/Users to verify the implementation of the requirements.

4.2.2. The Contractor shall provide means, during Joint Technical Reviews for the Purchaser, to access the working development version of the NEDB-NG software to demonstrate implemented functionalities and collect Purchaser’s remarks on the implementated functionalities.

4.2.3. The Contractor shall define and use a Change Management Process to process Engineering Change Proposals as described in section 5.5 of this SoW.

4.2.4. For verification and validation of the implemented requirements, the Contractor shall deliver and install the working development versions of the NEDB-NG software to the Integration Testbed at the Purchaser facility at NCI Agency The Hague.

4.2.5. The working development versions of the NEDB-NG software shall be usable by the Purchaser/Users without assistance from the Contractor (to enable feedback for all review activities).

4.2.6. The Contractor shall organise the following types of meetings using the most recent version of the developed products relevant to the aim of the meeting:

4.2.6.1. Joint Technical Reviews.

4.2.6.2. Formal Reviews (SRR, PDR, CDR, TRR, DRR)

4.2.7. Joint Technical Reviews

4.2.7.1. During the Joint Technical Review the Project Working Group will ensure Sprint requirements and Sprint remarks have been implemented in accordance with the agreed design.

4.2.7.2. The Contractor shall provide the following material to support the Joint Technical Review:

4.2.7.2.1. Release notes including, the version of the software, the list of SRS requirements covered by the Sprint and identified deficiencies.

4.2.7.2.2. The list of previous agreed Sprint Design Review remarks that have been implemented through the present Sprint.

4.2.7.2.3. The list of previous Sprint Review agreed remarks that have been implemented through the Sprint.

4.2.8. Formal Reviews

4.2.8.1. The Contractor shall organize formal reviews involving the IPMT and Contractor engineering personnel.

4.2.9. Project Working Group

4.2.9.1. The Project Working Group shall include the following representation:

4.2.9.1.1. User Subject Matter Experts (SMEs) on Electronic Warfare data

4.2.9.1.2. NCI Agency Project Manager, Technical Lead, System Manager and selected experts

4.2.9.1.3. Contractor’s Project Manager and selected experts

4.2.9.2. The composition of the Project Working Group shall be adjusted before each Joint Technical Review to meet the goals of the review.

4.3. System Development Plan

4.3.1. The Contractor shall provide and maintain a System Development Plan. The SDP shall describe all necessary activities for planning, managing and

controlling the engineering efforts for specifying, designing, developing, testing, installing and supporting NEDB-NG.

4.3.2. The SDP shall describe:

4.3.2.1. Engineering work packages and work items defined in the PWBS Dictionary.

4.3.2.2. The system development strategy including the organisation (by stage), tasks, resources, and methodologies.

4.3.2.3. The technical approach, including the relationship between bespoke (i.e., software specially written to specification) and off-the-shelf products (i.e., existing products that can be integrated with little or no customization).

4.3.2.4. The engineering processes (e.g., development technologies, development practices, design methodologies, unit testing and system integration procedures, risks analysis, control and monitoring mechanisms).

4.3.2.5. The computing system environment including hardware and operating system environment.

4.3.2.6. The development and test methodologies, standards, tools (including OTS products and programming or scripting languages), engineering environment, equipment, facilities, libraries, interfaces, plug-ins/add-ins, glue code and data.

4.3.2.7. Change management of the NEDB-NG System Requirements Specification, System Design Specification, and Test Plan.

4.3.2.8. System development schedule.

4.3.2.9. Purchaser/User participation.

4.3.2.10. Requirements management, to ensure traceability, and alignment with the baseline of requirements within the work packages.

4.3.2.11. The Contractor shall provide (in their Bid) a Functional Roadmap for the Requirements Implementation Schedule, which lists groups of NEDB-NG requirements from SRS and assigns in which System Development and Integration Sprint, the requirement shall be implemented (Available at Bidding Time).

4.3.2.11.1. The Functional Roadmap schedule shall have a tabular format as specified in the Annex B section 4.2.

4.3.2.12. The Contractor shall provide the Roadmap for any COTS components used in the technical solution in the Bid. The Roadmap should contain the list of planned updates to the COTS product and the new functionality that will be included in each release.

4.3.2.13. The Contractor will suggest what will be implemented in the IOC phase based on their concept, technical solution envisioned, availability of COTS components and other factors relevant for the bid.

4.3.2.14. In an annex, (consistent with ISO13407:1999) a Usability Engineering Plan on how the human-centred activities fit into the overall system development process. This annex shall identify:

4.3.2.14.1. The human-centred design process activities (i.e., understanding and identifying context of use and supported user tasks; considering recent military and industry human-computer interaction (HCI) innovations; surveying academic usability research; producing prototypes for user assessment and HCI design refinement; and evaluating designs with users including usability testing and HCI evaluation);

4.3.2.14.2. Procedures for integrating these activities with other system development activities (e.g., analysis, design, testing);

4.3.2.14.3. The individuals and the organization(s) responsible for the humancentred design activities and the range of skills and viewpoints they provide;

4.3.2.14.4. Effective procedures for establishing feedback and communication from users and other Purchaser representatives on human-centred design activities as they affect other design activities, and methods for documenting these activities;

4.3.2.14.5. Appropriate milestones for human-centred activities integrated into the overall design and development process, including events with the users prior to the SRR, PDR, CDR, FAT and TMR.

4.3.2.14.6. Suitable timescales to allow feedback and possible design changes to be incorporated into the project schedule.

4.3.2.15. In an annex, a Security Accreditation Plan which describes the Contractor deliverables and the interaction with the Purchaser in order to achieve timely (before scheduled piloting stage) system security accreditation. The Security Accreditation Plan shall be in accordance with Security Documents (Section 2.1.1.3) in the References (e.g., [AC/35-D/1021], [AC/35-D/2005], [AC/322-D/0030], [Sec Accred Strategy], [AC/35-D/1015], [AC/35-D/1014]).

4.4. Requirements analyses

4.4.1. General

4.4.1.1. The Contractor shall review the NEDB-NG System Requirements Specification (SRS) and all other applicable documents; inspect Purchaser provided NEDB prototype software artefacts; liaise with NATO subject matter experts as necessary; and prepare its recommendations in terms of proposed changes to the SRS. The Contractor may propose changes to the SRS, in

order to resolve inconsistencies and/or make improvements. After the formal Systems Requirements Review Meeting, such proposals shall be considered by the Purchaser through the CCB process.

4.4.1.2. The Contractor shall justify in the Engineering Change Proposal (ECP) any proposed changes to the requirements by the expected system cost or non-cost, schedule, performance, and supportability impacts.

4.4.1.3. The Contractor shall also identify any requirements that are in conflict (e.g., with design constraints).

4.4.1.4. The Contractor shall identify requirements initially satisfied by the COTS proposed by the Contractor.

4.4.1.5. The Contractor shall use the Requirements Management Database for management of the SRS and project requirements.

4.4.1.6. The Contractor shall ensure compliance with IEEE 12207 (section 5.3.2) for requirements analysis activities.

4.4.1.7. The contractor shall analyse, evaluate and demonstrate both the functional and not functional requirements.

4.4.2. Requirements Identification, Elaboration and Validation Support

4.4.2.1. During the process of software requirements Identification and Elaboration, the Contractor shall decompose single system requirements, provided in the SRS, into multiple software requirements to the level of detail resolving any ambiguities that could lead to misunderstanding of the implementation proposed by the Contractor.

4.4.2.1.1. Elicit, analyse, and support validation of stakeholder needs, expectations, constraints, and interfaces to specify customer requirements that constitute an understanding of what will satisfy stakeholders.

4.4.2.1.2. Develop the lifecycle requirements of the product (e.g., development, maintenance, transition to operations, evolution).

4.4.2.1.3. Review operational concepts and scenarios to refine and discover requirements.

4.4.2.1.4. Analyse needs and requirements (for each product lifecycle phase), the operational environment, and factors that reflect overall customer and end-user needs and expectations for attributes such as safety, security, portability, maintainability, performance, interoperability and affordability.

4.4.2.1.5. Define the environment in which the product will operate, including boundaries and constraints.

4.4.2.1.6. Analyse stakeholder needs, expectations, constraints, and external interfaces to remove conflicts and to organize into related subjects.

4.4.2.1.7. Analyse requirements to determine whether they satisfy higher level requirements.

4.4.2.1.8. Analyse requirements to ensure that they are complete, feasible, realizable, and verifiable.

4.4.2.1.9. Identify key requirements that have a strong influence on cost, schedule, functionality, risk, quality, or acceptance.

4.4.2.1.10. Identify technical performance measures to be tracked during the implementation.

4.4.2.1.11. Analyse the requirements to determine the risk that the resulting product will not perform appropriately in its intended-use environment.

4.4.2.1.12. Define constraints for verification and validation.

4.4.2.1.13. Establish and maintain relationships among the requirements under consideration during change management and requirements allocation.

4.4.2.1.14. Apply requirements elicitation, documentation, and verification and validation methods based on sound engineering principles.

4.4.3. Security Risk Assessment and Requirements Analysis

4.4.3.1. The Contractors shall support security accreditation of the NEDB-NG following the NATO accreditation process defined in AC/35-D/1021 Rev2, Guidelines for the Security Approval or Accreditation of CIS.

4.4.3.2. The Security Risk Assesment (SRA) shall identify any changes to the SRS required to achieve the desired system accreditation.

4.4.3.3. The Contractor shall provide a report documenting the findings of its SRA.

4.4.3.4. The Contractor shall prepare the System-Specific Security Requirements Statement (SSRS), defining all security measures required to counter the risks identified in the SRA, as a change to the SRS.

4.4.3.5. The Contractor shall prepare a System Interconnection Security Requirements Statement (SISRS) for each interface between NEDB-NG and any NATO classified domain.

4.4.3.6. The Contractor shall develop and provide system documentation as required by the NCI Agency in order to support the security penetration test and screening activities and to include NEDB-NG in the Approved Fielded

Products List (AFPL). The security settings and related testing documentation will be provided as part of PFE.

4.4.3.7. A high level description of the NEDB-NG security accreditation process, including the list of security related deliverables, is presented in the following.

4.4.3.7.1. All security accreditation decisions shall be based on the underlying security risk management foundation.

4.4.3.7.2. The actual Communications and Information System (CIS) Security Accreditation process consists of 5 differentiate steps. The goal of each step is:

1. To address the proper categorization of a new systems / new capability regarding its accreditation needs. Here, the respective Security Accreditation Authority (SAA) answers the question if (and to what extend) an accreditation is needed based on an initial system description.
2. To establish the required Security Accreditation Plan for this system, as well as the security requirements based on the security risk assessment.
3. To address the security testing requirements and their execution for a system, including an approval for testing (if required) and an interim security accreditation.
4. To focus on the administrative and physical aspects of this systems, and ensure, among other things, that the required Site Security Compliance are in place.
5. To join all aspects of the system accreditation perspective back together and achieve the actual Security Accreditation

4.4.3.7.3. The following sequence of deliverables in form of documentation is required when a full Security Accreditation is necessary.

1. Generation of a “detailed CIS Description”.
2. Generation of the Security Accreditation Plan (SAP).
3. A formal and structured Security Risk Assessment (SRA) needs to be carried out. The SRA normally addresses the environments which are relevant to Security in terms of the Global Security Environment (GSE) and the Local Security Environment (LSE), as well the Electronic Security Environment (ESE).
4. A System-specific Security Requirements Statement (SSRS) will be produced, based on the results from the SRA.
5. A Security Operating Procedures (SecOPs) will be produced for General User and/or System and CIS Security staffs.
6. A Security Test and Verification Plan (STVP) will be generated, based on the SSRS.

7. Potentially, a Vulnerability Assessment (VA) needs to be carried out.
8. The Global Security Environment (GSE) and the Local Security Environment (LSE), where a CIS is (to be) operated in, need to conform to NATO security policy/directives requirements or their NATO Nations' equivalent(s). This conformance is established through the generation of Site Security Compliance (SSCs) Statements.
9. As most of the CIS are operated in a networked environment, their interconnection requires also to achieve a security accreditation. This activity is based on the completed System Interconnection Security Requirement Statement (SISRS).

4.4.3.7.4. Tasks where the Contractor is involved during the Security Accreditation Process are listed inTable 8. The Purchaser also participates in the process, and performs activities that do not involve the Contractor; as a result of this, the table only contains the steps and tasks of the Accreditation Process where the Contractor will provide inputs or outputs.

#	Contractor responsibility **(the Contractor shall)**	Purchaser responsibility **(the Purchaser will)**	Deliverables
1	• Complete the CIS description • Address Purchaser and SAA comments.	• Provide template to the Contractor • Provide guidance to the Contractor • Provide input to NATO-specific sections (e.g. authorities) • Review input provided by the Contractor • Coordinate with SAA regarding CIS description review and endorsement (by the SAA) • Provide SAA comments to the Contractor • Approve or Reject the CIS System Description.	CIS System Description *Scope: NEDB*

#	Contractor responsibility **(the Contractor shall)**	Purchaser responsibility **(the Purchaser will)**	Deliverables
2	• Conduct SRA in cooperation with the Purchaser • Develop SRA report in accordance with provided template and guidance • Address Purchaser and SAA comments to the SRA • Address additional technical security requirements if recommended by the SRA and not already included in CIS design documented in the CIS Description above.	• Provide SRA template to the Contractor • Provide NATO PILAR user guide to the Contractor (optional) • Provide NATO version of PILAR tool (optional) • Provide support to the Contractor during the conduct of SRA • Coordination with the SAA regarding SRA approval • Provide SAA comments to the Contractor • Approve or Reject the SRA.	Security Risk Assessment (SRA) *Scope: NEDB*
3	• Develop SSRS and address only the details relevant to the NEDB subsystem concerned • Address Purchaser and SAA comments to SSRS sections mentioned above.	• Provide SSRS template to the Contractor • Provide guidance to the Contractor • Provide input to NATO-specific sections (e.g. authorities, security directives, minimum NATO standards) • Review input provided by the Contractor • Coordination with the SAA regarding SSRS approval • Provide SAA comments to the Contractor • Approve or Reject the SSRS.	System Specific Security Requirement Statement (SSRS) *Scope: NEDB*
4	• Develop subsystem-specific input to SecOPS • Address Purchaser and SAA comments to SecOPs.	• Provide SecOPs template to the Contractor • Provide guidance to the Contractor • Review input provided by the Contractor • Coordination with the SAA regarding SecOPs approval • Provide SAA comments to the Contractor • Approve or Reject Security Operating Procedures (SecOps)	Security Operating procedures (SecOPS) *Scope: NEDB*

#	Contractor responsibility **(the Contractor shall)**	Purchaser responsibility **(the Purchaser will)**	Deliverables
5	• Develop STVP • Address Purchaser and SAA comments.	• Provide guidance to the Contractor • Review STVP • Coordination with the SAA regarding STVP approval • Provide SAA comments to the Contractor • Approve or Reject the Security Test and Verification Plan (STVP).	Security Test and Verification Plan (STVP) *Scope: NEDB*
6	• Conduct/participate in security testing in accordance with STVP (conductor or participant role depending on the test) • Provide support to the Purchaser during the conduct of Vulnerability Assessment and Penetration Testing • Develop Action Plan for fixing issues detected during the execution of the STVP or the Vulnerability Assessment and Penetration Testing, if any • Prepare Test Report	• Provide guidance to the Contractor • Participate in testing • Conduct Vulnerability Assessment and Penetration Testing • Review Action Plan • Review Test Report • Coordination with SAA • Approve or Reject Test Report (TR)	Test Report (TR) *Scope: NEDB*
7	• Develop SISRS	• Provide SISRS template to the Contractor • Provide guidance to the Contractor •	System Interconnection Security Requirement Statement (SISRS) *Scope: NEDB*

Table 8 – Tasks where the Contractor is involved during the Security Accreditation Process

4.4.4. System Requirements Review

4.4.4.1. The Contractor shall organize and conduct a Preliminary System Requirements Review (PSRR) to review the set of requirements as documented in the SRS with the Purchaser and Project Working Group (PWG).

4.4.4.2. The Contractor shall organize and conduct System Requirements Review (SRR) to present its proposed changes to the Functional Baseline for the design and integration of the NEDB-NG.

4.4.4.3. The proposed changes to the SRS shall be delivered prior to the SRR.

4.4.4.4. The occurrence of System Requirements Review corresponds to the SRR milestone.

4.4.4.5. The SRS to be used for the review shall be the Purchaser provided SRS with approved changes and, as required, extended with additional details supporting the approved scope.

4.4.4.6. The Contractor shall provide the following documents for the SRR:

Serial	Requirement
1	Software Requirements Specification (SWRS)
2	User Interface Specification
3	Security Risk Assesment (SRA) report
4	System-Specific Security Requirements Statement (SSRS)
5	Change Request (CR)

Table 9 – Input for the System Requirements Review

4.4.4.7. SRR shall be considered completed when the Purchaser and the Contractor have agreed to all necessary changes to the SRS such that the SRS is sufficient to begin with the NEDB-NG system design and implementation work.

4.4.5. Requirements Change Request

4.4.5.1. The Contractor shall propose and manage changes to NEDB-NG requirements through Engineering Change Proposals (ECPs) as described in section 5.5.

4.4.5.2. Any changes to project level-requirements shall be authorised by the Purchaser during the formal review process or by project Change Control Board.

4.4.5.3. Any changes to contract-level requirements shall be endorsed and authorised by the project Change Control Board and formally approved by the Purchaser as contract amendment.

4.4.5.4. The Contractor shall identify all proposed changes to System Requirements Specification in the form of one or more Change Requests.

4.4.5.5. The Contractor shall prepare Change Requests following the guidelines of the Contract configuration management requirements as stated in Configuration Management.

4.4.5.6. The Contractor shall justify any proposed change to the SRS with the expected system cost, schedule, performance, and supportability impacts.

4.4.5.7. The Contractor shall identify any proposed change to the SRS that is in conflict with e.g. design constraints.

4.4.5.8. The CR impact description shall include a statement of compliance with the authorised scope of the project and any trade-offs that shall be considered.

4.4.5.9. The Contractor shall update the baseline SRS to reflect the decision of the NEDB-NG CCB on these Change Requests, provided approval of the Purchaser's Contracting Authority.

4.5. System Design

4.5.1. The Contractor shall perform system design activities in accordance with the processes defined in IEEE 12207.

4.5.2. System Design Reviews

4.5.2.1. The Contractor shall organize and conduct system design reviews to present its design of the initial NEDB-NG and any subsequent maintenance and major releases at the preliminary and critical design stages.

4.5.2.2. The Contractor shall conduct the Preliminary Design Review (PDR) and present its proposed System Design Specification (SDS) for approval as the Allocated Baseline for the Contractor's Detailed Design activities. The PDR shall be considered completed when the Purchaser agrees to the initial SDS which shall include mock-ups or prototypes for system HMI.

4.5.2.3. The Contractor shall conduct the Critical Design Review (CDR) to present its detailed design of the NEDB-NG. The CDR shall be considered completed when the Purchaser agrees to the final SDS (constituting the Developmental Baseline) which shall include final user interface prototypes which have been refined based on usability tests with operational users and Subject Matter Experts (SMEs).

4.5.2.4. The Contractor shall provide the following documents for the PDR and CDR:

Serial	Requirement
1	System Architecture Description (SAD)

2	Software Design Specification (SDS)
3	System Security Design Specification
4	Requirements Traceability Matrix
5	Interface Control Document (ICD)
5	Change Request

Table 10 – Input for the Design Reviews

4.5.2.5. The scope of the SDS to be provided for PDR may be limited to highlevel design information, and is not required to present implementation details.

4.5.2.6. The Contractor shall deliver updated design documents at each Sprint as minor revisions within the development framework that replaces earlier versions of the documents the Functional Baseline. The reviews shall be carried out within the framework of the Critical Design Reviews.

4.5.2.7. The Contractor shall deliver the design documents two weeks prior to the each Sprint review, unless specified differently in the Work Package.

4.5.3. System Architecture Description

4.5.3.1. Unless otherwise directed in an appropriate Work Package, the Contractor shall include the following areas in its System Architecture Description:

4.5.3.1.1. NEDB-NG overall system, subsystem and interactions

4.5.3.1.2. NEDB-NG Services breakdown, Services, componentization and interactions

4.5.3.1.3. NEDB-NG Human-Machine Interaction and Human Factors justifications

4.5.3.1.4. CSCI-level (Computer Software Configuration Item-level) functionality, design, and interfaces

4.5.3.1.5. NEDB-NG System-level and Service-level interfaces, including external Services interfaces.

4.5.3.1.6. NEDB-NG test stub associated with the service-level interfaces that will be externally accessible.

4.5.3.1.7. Core Service integration (at Service-level and host environment-level)

4.5.3.1.8. Design of NEDB-NG Information Objects

4.5.3.1.9. System security, including Services access-control mechanisms, data protection, backup and recovery, audit, interconnection, and information exchange security in context of the Services breakdown.

4.5.3.1.10. For off-the-shelf products, the intended product and version, and note if any modifications, adaptations, or additional elements (such as macros or plug-ins) are required. Open Source Software (OSS) are to be disclosed (for review of OSS conditions by the NCI Agency).

4.5.3.1.11. For any elements that require development: design, development, documentation, unit testing, and integration approach.

4.5.3.1.12. Sequence and scope of system tests of the initial or updated Developmental Baseline and any requirements for Purchaser support and participation.

4.5.3.1.13. Steps to mitigate risks identified in the Risk Log

4.5.4. Software Design Specification

4.5.4.1. The Contractor shall establish, provide, and maintain the NEDB-NG Software Design Specification (SDS) based on the approved SRS specifying the Functional Baseline.

4.5.4.2. The SDS shall describe the NEDB-NG to a level of detail that is sufficient for the Purchaser to be able to understand how the NEDB-NG will be implemented, operated, and managed.

4.5.4.3. The development of the SDS shall be in accordance with the processes defined in sections 5.3.3 through 5.3.5 of IEEE 12207, IEEE 1016 (IEEE Recommended Practice for Software Design Descriptions) and the specifications below.

4.5.4.4. After having an approved initial SDS (constituting the Allocated Baseline) at the Preliminary design Review (PDR) meeting, the Contractor shall develop the final SDS in accordance with the processes defined in section 5.3.6 through 5.3.9 of IEEE 12207.

4.5.4.5. The SDS shall identify the proposed Configuration Items and their design, functionality, interfaces, and data structures. For each CI, the SDS shall:

4.5.4.5.1. Identify the functions and algorithms used by a component;

4.5.4.5.2. Identify the functional requirements that are realized by a component;

4.5.4.5.3. Identify any constraints imposed upon it.

4.5.4.5.4. Identify any off-the-shelf and government furnished equipment (GFE) components necessary to build, deploy, or execute this computer software component.

4.5.4.5.5. Identify configuration and development work needed to implement, in relation to the PWBS.

4.5.4.6. The SDS shall identify any Service, Interface or Application Programming Interface (API) required to document and control the interface between the NEDB-NG system and external systems, services, or applications in the Interface Control Document (ICD).

4.5.4.7. The SDS shall identify all necessary customization (by parameterization or new software development) of the off-the-shelf packages that has to be performed.

4.5.4.8. The SDS shall be compliant with the RAM requirements as described in this SoW and in the SRS

4.5.4.9. The SDS shall include the information as required in the architectural views listed in the SRS Annex A.2 “NEDB-NG required architecture views and minimum content”, based on the NATO Architectural Framework, Version 3.1.

4.5.4.10. The SDS shall provide both the high-level and detailed design information as an integrated set of model files using structured dataset format containing all the required data and relationships according to the SRS specifications

4.5.4.11. The Contractor shall use UML as a notation (used in this SOW for referencing work).

4.5.4.12. The Contractor shall propose the most appropriate notation and representation to represent the underlying data in the SDS to be validated by the Purchaser at PDR.

4.5.4.13. The Contractor shall provide the SDS high level-design information in the form of an NEDB-NG logical model.

4.5.4.14. The NEDB-NG logical model shall include at minimum the following UML diagram types: Use Case diagram, Class diagram, Object diagram, Activity diagram and State Machine diagram.

4.5.4.15. The Contractor shall provide the SDS detailed design information in the form of an NEDB-NG implementation model.

4.5.4.16. The NEDB-NG SDS implementation model shall include UML diagram types such as: Activity diagram, Class diagram, Object Diagram, Component diagram, Deployment diagram, Sequence diagram, State Machine diagram and Communication diagram.

4.5.4.17. UML class diagrams shall be used to identify and describe the computer software units and their interdependencies. Class diagrams shall portray attributes (data), methods (functions, interface), and dependency relationships (e.g. inheritance, dependencies, associations).

4.5.4.18. The Contractor shall produce the required information within NSV-1 and NSV-5 for these logical models.

4.5.4.19. The content and dependencies between both models of the SDS shall be updated and managed by the Contractor during the complete project lifecycle.

4.5.4.20. This design information shall be available using the standard output and viewing capabilities of the Enterprise Architect, as well as to compatible web browsers using the web publishing capabilities.

4.5.4.21. The Contractor shall provide licenses for the tool needed to view and edit the diagrams on the Reference System and the Testbed System.

4.5.4.22. The High Level Design information shall be provided with an accompanying template to facilitate well-structured hard copy output.

4.5.4.23. The SDS shall include the NEDBG-NG database schema represented using UML data modelling standards. This information shall include Logical and Physical Data Models.

4.5.4.24. In addition to document-based versions of the schema, the NEDB-NG database schema shall be provided in the native format of the database design tool specified in the SRS. The provided data model with the database design tool shall support automated generation of Data Definition Language scripts to create target database structures for the chosen database management system.

4.5.4.25. The SDS shall provide a data dictionary describing all data elements within the NEDB-NG database, with views and outputs consistent with UML modelling standards. The information in the data dictionary shall be captured in the database design tool specified in the SRS.

4.5.5. System Security Design Specification

4.5.5.1. The SDS shall include a System Security Design Specification to support accreditation of the NEDB-NG for use in the NATO SECRET Wide Area Network (NS WAN). This annex to the SDS shall include:

4.5.5.1.1. System access control, data protection, and information exchange requirements and design features.

4.5.5.1.2. Backup, recovery, availability, and security requirements and design features.

4.5.5.1.3. System configuration and administration requirements and design features.

4.5.5.1.4. Security impacts, including any required adjustments and configuration changes to workstation baselines and network elements such as firewalls and routers.

4.5.5.1.5. The security features of any off-the-shelf products included in the system.

4.5.5.1.6. For each security measure included in the SRS, the SDS shall either identify the matching security design feature or operational procedure.

4.5.5.1.7. The System Security Design Specification shall be capable of being read and understood as a stand-alone document from the SDS.

4.5.5.1.8. The SDS shall identify the minimum hardware and software specifications required to support the proposed system baseline, including the baseline design, maintenance, and test elements to be installed.

4.5.5.1.9. The SDS shall provide a detailed list of the OTS components (software) proposed to be supplied as part of the Contract. The product name, manufacturer name, and manufacturer's part number, version, or release number shall be stated, as appropriate.

4.5.5.1.10. The SDS shall provide a detailed specification sheet for each item of OTS equipment proposed to be supplied as part of the Contract.

4.5.6. Requirements Traceability Matrix

4.5.6.1. As an appendix to the SDS, the Contractor shall provide and maintain a Requirements Traceability Matrix that guarantees the two way link between requirements (SRS), technical specifications (SDS), test scripts and test. The Contractor shall extend this matrix to the Developmental Baseline, Product Baseline, and the Test Plan to ensure the Purchaser can verify compliance throughout the project.

4.5.7. Interface Control Document (ICD)

4.5.7.1. The Contractor shall produce the NEDB-NG Interface Control Document, describing all external NEDB-NG interfaces to be developed or updated within this contract. The ICD shall refer other ICDs where applicable.

4.5.7.2. The Contractor shall link the services and the interfaces that will be used to invoke the service operations, registering the needed standards, data models and protocols to establish each interface.

4.5.7.3. The Contractor shall include an updated set of all the above design artefacts as part of the delivered Product Baseline.

4.5.7.4. Review and acceptance of design documentation provided by the Contractor to the Purchaser shall not imply Purchaser acceptance of the NEDB-NG

design. It remains the sole responsibility of the Contractor to prove the design through the regime of testing set forth in the Contract and it shall be the sole responsibility of the Contractor in the event that the system proves deficient in meeting the SRS.

4.6. System Development and Integration

4.6.1. The Contractor shall develop and integrate the components identified in the SDS.

4.6.2. The Contractor shall perform system development and integration activities in compliance with the processes defined in sections 5.3.8 through 5.3.13 of IEEE 12207 and IEEE 1016 (IEEE Recommended Practice for Software Design Descriptions).

4.6.3. For such custom adaptation as identified at PDR or CDR and agreed to as part of the SDS, the Contractor shall adapt, integrate, document, and test software applications and scripts.

4.6.4. The Contractor shall document the design, models, algorithms, data structures, and source code for all CIs it develops or adapts. This documentation shall be managed as part of the Contractor's Developmental and Product Baselines.

4.6.5. Purchaser Access during Development

4.6.5.1. The Purchaser, case-by-case by use of the IV&V team, reserves the right to monitor the Contractor's activities, including code inspections, to ensure that sound engineering practices are followed and that the requirements of the SRS are met.

4.6.5.2. During the process of development, the Contractor shall provide the Purchaser with Internet access to a version of the Developmental Baseline.

4.6.5.3. The Contractor shall implement an access control mechanism to restrict viewing of the version of the Developmental Baseline to a list of users approved by the Purchaser and administered by the Contractor.

4.6.5.4. The Contractor shall permit Purchaser personnel or designees to inspect the Developmental Baseline.

4.6.5.5. The Purchaser will notify the Contractor at least three working days before an inspection visit.

4.6.5.6. The Contractor shall deliver the source code and the software development environment required to allow future maintenance by the Purchaser.

4.6.5.7. The Purchaser shall retain ownership of the source code for any such developmental software throughout its lifecycle.

4.6.5.8. The Contractor shall integrate the source code as meant in Annex A, the requirements, the links from the requirements to test cases in the test plan,

the automated build and the test plan (with the test cases) into the Configuration Management Repository of the Purchaser.

4.6.5.9. The Contractor shall deliver all test documentation, test data, and test suites to allow a full or partial retest after maintenance operations by the Purchaser.

4.7. Testing

4.7.1. The Contractor shall define and develop test programs, plans, and procedures, conduct testing, and evaluate and document results.

4.7.1.1. The Purchaser reserves the right to develop additional test procedures and conduct independent testing.

4.7.2. The Contractor shall have the overall responsibility for meeting NEDB-NG testing requirements, and shall provide the manpower required to integrate the NEDB-NG into the Purchaser testbed systems and to perform all tests.

4.7.3. The Purchaser or its designees (e.g., IV&V) will review/approve the Contractor's test plans and procedures for correctness and completeness, and will monitor and inspect the Contractor's test activities to ensure compliance.

4.7.4. The Contractor shall ensure that the software, test equipment, instrumentation, supplies, facilities, and personnel are available and in place to conduct or support each scheduled test.

4.7.5. The Contractor shall provide a compatibility matrix to record against which software platform the different application components have been tested, so that in the case of software upgrades, it can easily be identified for which components additional testing is required.

4.7.6. The Contractor shall provide test data to support developmental, acceptance, and operational testing activities.

4.7.7. The test data shall provide the quantities; the varieties of object types, object sizes and attribute values; the exceptional values; and the update frequency appropriate to the type of testing and sufficient to verify that all system requirements are met.

4.7.8. For acceptance and operational testing, the test data shall also include, as a minimum, the anticipated operational quantities and sizes of information objects identified in the SRS.

4.7.9. Test Stub

4.7.9.1. The Contractor shall develop Test Stubs that will provide NCI Agency with:

4.7.9.1.1. A certified implementation and limited information source/sink of a protocol/standard, so that it can be used by the contractor to test or develop their side of the interface.

4.7.9.1.2. An implementation example to help development activities, as a supplement to ICD's and other engineering documentation.

4.7.9.1.3. Provide the Architecture and Integration with a toolset to help develop future interface specifications or support integration with other systems.

4.7.9.1.4. Provide the Integration and Test with a toolset to help the Bi-SC AIS perform active Acceptance test activities.

4.7.9.2. Test Stubs can be developed as a Proof of Concept:

4.7.9.2.1. As small footprint executable components with two modes of operation, Standalone and Integrated.

4.7.9.2.2. Including prepackaged messages and flow rules to implement one test scenario with a number of independent test cases.

4.7.9.2.3. Handled and tracked in the Interoperability Profile, as many Test Stubs as needed to comply with the Scenario.

4.7.9.2.4. Each Test Stub shall satisfy Information Exchange Requirements allocated to the project.

4.7.9.2.5. To identify and confirm the state of interfaces and services with which the project's expected capability will need to act.

4.7.9.2.6. Support the development of Interface Control Documents.

4.7.9.2.7. Create an initial service mock-up for new services proposed to be implemented.

4.7.9.2.8. A service mock-up is a very simple application that simulates the service states and information exchanges of Bi-SC AIS services that have not yet been fully implemented and accepted.

4.7.9.3. The contractor shall Develop, from Web Services Description Language (WSDL) descriptions of new services, scriptable service mock-ups for use in the integration testbed.

4.7.10. Test Plan

4.7.10.1. The Contractor shall provide and maintain a Test Plan (TP) outlining the tests and supporting tasks to meet the requirements of this SOW and the SRS.

4.7.10.2. The TP shall describe how the Contractor intends to meet the following objectives:

4.7.10.2.1. Verification that the design produces the required capability;

4.7.10.2.2. Confidence that system defects are detected early and tracked through to correction by using a test management tool and logged in a file;

4.7.10.2.3. Compliance with the requirements of the SRS, including quality attributes and their test case coverage and with external system interfaces as defined in the ICDs, including any plug-ins/add-ins and glue code;

4.7.10.2.4. Compatibility among internal system components (with reference to the NEDB-NG SDS implementation design model);

4.7.10.2.5. Operational readiness and suitability of all configurations;

4.7.10.2.6. Verification by the operational users that the system is usable and acceptable;

4.7.10.2.7. Verification that the system can be efficiently supported and maintained

4.7.10.2.8. Verification of RAM figures, via a maintainability demonstration;

4.7.10.2.9. System characterisation to establish the system's performance benchmarks;

4.7.10.2.10. Documentation and code verification;

4.7.10.2.11. Implementation of the Reference System and the Testbed System.

4.7.10.3. The TP shall describe the Contractor's test organisation and its relationship with the Contractor's Project Management Office and QA functions.

4.7.10.4. The TP shall provide a flow diagram that identifies the overall sequence of tests, the location, and Contractor and Purchaser equipment and personnel involved in each test, and the relationship of test events to project milestones.

4.7.10.5. The TP shall identify the test documentation associated with each test, including the scenario, procedures, test data, test results, and test reports.

4.7.10.6. The TP shall identify how defects are tracked through to correction by using a test management tool or defect management tool respectively.

4.7.10.7. The TP shall identify the support to be provided by the Purchaser in terms of manpower, services and material, including Purchaser witnessing and approval activities.

4.7.10.8. The TP shall identify any specialised or long-lead items required for testing.

4.7.10.9. The TP shall define the test needed to demonstrate the RAM figures

4.7.10.10. The TP shall identify all NEDB-NG Configuration Items (CIs) that are subject to the test program and shall indicate by which method the items will be evaluated.

4.7.10.11. The TP shall include a description of how the Requirements Traceability Matrix shows how test tasks demonstrate that the tested system fulfils specific SRS requirements and implements specific SDS features.

4.7.10.12. Security Test and Verification Plan

4.7.10.12.1. The Contractor shall provide and maintain, as an annex to the TP, which can be addressed as a separate document, a Security Test and Verification Plan (STVP) that details the tests by which it will demonstrate compliance with the security requirements of the SRS. This test should demonstrate that the Contractor has mitigated the security risks that are identified in the Security Risk Assessment. The report of this test shall be delivered to the INFOSEC accreditation authority as a step to achieve INFOSEC accreditation. The Contractor shall derive a generic ST&E Plan from the original ST&E Plan which can be used by local nodes to produce their specific ST&E Plan.

4.7.11. Test Management Tool

4.7.11.1. The Contractor shall perform Test Quality Management by introducing a Test Management Tool and Test Automation Tool. Subject to approval of the Purchaser under the Technology Substitution clause, Contractor shall interface with the latest commercial version of Test Management and Test Automation Tools identified in the SRS.

4.7.11.2. The Test Management Tool shall:

4.7.11.2.1. Link requirements in the SRS to test cases, procedures, and results.

4.7.11.2.2. Support Test Preparation, Test execution, Test evaluation and Test optimisation, as well as the logging of errors.

4.7.11.2.3. Support the establishment of version-controlled test baselines associated with the Functional, Development and Product Baselines.

4.7.11.2.4. Provide all Test Case references to the associated SRS and SOW requirement(s).

4.7.11.2.5. Provide all Test Case references to the associated functional area(s) in the logical model of NEDB-NG SDS.

4.7.11.2.6. Provide detailed Test Case description, including:

Serial	Requirement
1	Unique Indentifier;
2	Objective;

3	Aceptance criteria;
4	Input data;
5	Preconditions;
6	Execution procedures;
7	Output data;
8	Post conditions;
9	Exception handling including test break-off criteria

Table 11 – Fields in the Test Case description

4.7.11.2.7. Provide overall and individual Test Case dependencies.

4.7.11.2.8. Provide overall procedures for sequences of tests, such as those for the Factory Acceptance Test.

4.7.11.2.9. Provide individual and summary test results.

4.7.11.2.10. Provide a Test Log of all tests run, including:

Serial	Requirement
1	Date;
2	Test-ID;
3	Tester;
4	Test conditions;
5	Test results;
6	Test witness;
7	Release number

Table 12 – Fields of the Test Log

4.7.11.3. Support change management, including data on test errors, affected Test Cases, associated deficiency reports, and change history.

4.7.11.4. The Contractor shall make the contents of the Test Management Tool information accessible on a read-only basis via the Project Website.

4.7.12. Test Procedures

4.7.12.1. The Contractor shall develop and maintain procedures for each test task supporting the NEDB-NG tests.

4.7.12.2. The Contractor shall identify any conditions which shall be satisfied prior to application of the test with, if applicable, a block diagram showing the proposed method of meeting the test requirements.

4.7.12.3. The Contractor shall state for each test the following items:

Serial	Requirement
1	Test objective;
2	NEDB-NG elements, facilities and test equipment involved;
3	Configuration parameter resets (i.e. to allow recording of relevant intial parameter settings);
4	Test to be taken to achiev the test outcome;
5	Data to be collected;
6	Expected outcome

Table 13 – Fields for NEDB-NG Test description

4.7.12.4. The Contractor shall include a subset of the Requirements Traceability Matrix to show how test tasks are linked to and demonstrate specific SRS and SOW requirements.

4.7.12.5. The Contractor shall identify the means of measurement or assessment for each test.

4.7.12.6. The Contractor shall forward the test procedures for review and acceptance to the Purchaser and PWG at least three (3) weeks prior to test execution, unless specified differently in the Work Package.

4.7.13. Test Reports

4.7.13.1. The Contractor shall record the results for each test called for in the test plan in a test report, using test results sheets incorporated in the relevant test procedure.Follow-on Engineering, Integration and Test Support.

4.7.13.2. Where the Purchaser has witnessed the testing, the witness shall annotate each page of the test results. Such annotation shall only confirm the accuracy of the test results and shall not be considered as an acceptance of the testing.

4.7.13.3. Any failure to complete a test successfully shall be recorded by the Contractor, logged as a Deficiency Report, and noted in the test report.

4.7.13.4. The original report (electronic and hard-copy) plus one copy shall be distributed to the Purchaser for acceptance within two weeks after the completion of the test, unless specified differently in the Work Package.

4.7.14. Test Failures

4.7.14.1. Classification of Failures

4.7.14.1.1. Should a failure occur during testing, the Contractor shall submit a failure report (individually identified to ensure traceability) and carry out a preliminary investigation to classify the failure as one of the following:

4.7.14.1.1.1. Class “A”: there is evidence that the cause was an external or transient condition;

4.7.14.1.1.2. Class “B”: there is mutual agreement between the Contractor and Purchaser that the cause was an inherent design or manufacturing deficiency in the unit under test; or

4.7.14.1.1.3. Class “C”: When the specific nature of the cause cannot be immediately determined and a more detailed investigation is required before a conclusion can be drawn.

4.7.14.2. Class "A" Failures

4.7.14.2.1. In the event that a preliminary investigation results in the classification of a failure as described above, the Contractor shall repeat the test at least three successive times in order to confirm the failure.

4.7.14.2.2. If the re-test is successful, the Purchaser will close the observation and testing shall be resumed from the point immediately after that where the failure occurred.

4.7.14.2.3. If the re-test fails, the Contractor shall change the failure category to class "B" or "C", as described above.

4.7.14.3. Class "B" Failures

4.7.14.3.1. If a failure is classified as a Class "B" from above, the Contractor shall suspend all testing until the Contractor determines the specific cause of the failure and proposes appropriate remedial action acceptable to the Purchaser.

4.7.14.3.2. If the Contractor determines that the cause of the failure or the effect of the proposed remedial action will have no influence whatsoever on other areas of scheduled testing, it may propose to the Purchaser to continue testing in the other areas prior to the rectification of the cause of the failure.

4.7.14.3.3. The Purchaser shall have the right to require repetition of any or all tests performed in these circumstances after the rectification of the cause of the failure and the subsequent re-tests, to prove they have been successfully completed.

4.7.14.3.4. The Contractor shall be responsible for the rectification of deficiencies or failures and subsequent re-testing caused by the design or production of the deliverables identified during the verification and/or testing cycles.

4.7.14.3.5. The Contractor shall provide full details describing the cause of the failure and the recommended remedial actions to be taken by the Contractor.

4.7.14.3.6. After the Contractor has taken remedial action, the test may be resumed at the step during which the deficiency or failure was identified; however, the Purchaser shall have the right to require that retesting includes all of the tests related to the verification of that particular specification requirement.

4.7.14.4. Class "C" Failures

4.7.14.4.1. If a failure is classified as a Class "C" from above, the Contractor shall immediately suspend testing and conduct a detailed investigation into its causes.

4.7.14.4.2. The Contractor shall report its findings and recommendations on the cause and remedial action required and advise if the failure should be re-classified as either a Class “A” or “B.” The actions previously described relating to these classifications shall then be commenced.

4.7.14.4.3. If the Contractor determines that the test failure was due to a component failure and not attributable to a deficiency in design, then the defective component may be replaced and the failure re-classified as a Class "A" failure.

4.7.14.5. Tracking of Failures

4.7.14.5.1. If a failure occurs during testing, the Contractor shall record the event and log the subsequent actions taken to resolve the failure.

4.7.15. Test Waivers

4.7.15.1. If the Contractor has previously successfully completed qualification testing to national or international standards for assemblies, subassemblies, components or parts, the Contractor may submit documentation that substantiates the particular test requirement.

4.7.15.2. The Purchaser reserves the right to review and approve the test documentation for acceptance and waiver of any test requirement.

4.7.15.3. The Contractor shall produce the following to justify a test waiver:

4.7.15.3.1. The nationally or internationally certified test results;

4.7.15.3.2. The test standards, procedures and methods employed on the testing; and

4.7.15.3.3. The test environment specifications that show that the previous testing matches the requirements of this Contract.

4.7.15.3.3.1. The Contractor shall certify that the environment to be implemented is identical to that which was originally tested and certified, or advise the Purchaser of design/construction changes which affect form, fit or function.

4.7.15.3.3.2. The Purchaser, after review of such changes and their impact, reserves the right to require test and certification of the modified equipment at no cost.

4.7.15.4. The Contractor shall record and log all waiver requests along with their resolution.

4.7.16. Tests

4.7.16.1. Factory Acceptance Test (FAT)

4.7.16.1.1. The purpose of the Factory Acceptance Test is to demonstrate that the Product Baseline complies with the Functional Baseline and that the off-the- shelf and uniquely developed elements of the NEDB-NG capability have been integrated to meet the requirements of the SRS and the SOW.

4.7.16.1.2. The testing environment for FAT shall reflect the target implementation environment including configuration and security settings. The tests shall cover both functional testing and security testing.

4.7.16.1.3. The FAT is conducted by the Contractor and observed by the Purchaser. The Contractor shall allow the Purchaser to perform specific tests after demonstration of that test by the Contractor.

4.7.16.1.4. The FAT shall be conducted on the basis of tests scripts. These tests shall be developed by the Contractor. The test scripts shall be based on test data and description of test outcomes developed/produced by the Operational community (the final users) if available.

4.7.16.1.5. The Contractor shall facilitate and support up to five days of ad hoc testing by Purchaser personnel. The Contractor shall support the ad hoc testing and shall provide space and up to five NEDB-NG enabled workstations for

Purchaser personnel. The Contractor shall record and assess for Contract relevance any discrepancies identified during ad hoc testing.

4.7.16.1.6. Test Readiness Review (TRR)

4.7.16.1.6.1. Before scheduling the FAT, the Contactor shall host a Test Readiness Review (TRR) to review preparations and readiness for testing of software configuration items, including adequate version identification of software and test procedures.

4.7.16.1.6.2. The Contractor shall provide the following documents before the TRR:

Serial	Requirement
1	Test Plan (TP)
2	Security Test and Verification Plan (STVP)
3	Test Procedures
4	Test Report form (empty)
5	Security Implementation Verification Procedures (SIVP)
6	Security Operating Procedures (SecOps)
7	System Implementation Plan
8	NEDB-NG software (baselined version to be tested)

Table 14 – Input for the Test Readiness Review

4.7.16.2. Security Testing

4.7.16.2.1. The Contractor shall demonstrate compliance of the NEDB-NG capability with security requirements of the SRS, the draft Security Operating Procedures and the Security Implementation Verification Procedures, including compliance with operating system and security configuration settings.

4.7.16.2.2. The purpose of Security Testing is to demonstrate that the NEDB-NG meets its security requirements and can be accredited for use on the NATO SECRET network.

4.7.16.2.3. The Contractor shall perform an Security Test and Verification prior to the TRR and the results of this test shall be used to contribute to the development of the initial version of the NEDB-NG SecOps. The Security

Test and Verification report will be required as part of the submissions for INFOSEC accreditation.

4.7.16.2.4. The Contractor shall support two one-week periods of tests on a Purchaser-specified system (e.g. IT&V testbed at NCI Agency). The Contractor shall record and assess for Contract relevance any discrepancies identified during these testing periods.

4.7.16.2.5. The Purchaser reserves the right to perform three days of ad hoc security testing by Purchaser personnel with support from Contractor personnel. The Contractor shall record and assess for Contract relevance any discrepancies identified during ad hoc testing.

4.7.16.2.6. The Contractor shall provide the initial version of the Security Operating Procedures (SecOps) and the Security Implementation Verification Procedures (SIVP) not later than the Test Readiness Review for the Factory Acceptance Test.

4.7.16.2.7. Security Operating Procedures (SecOps)

4.7.16.2.7.1. The SecOps shall be based on a Purchaser-furnished template and cover the following:

Serial	Requirement
1	Administration and Organisation of Security.
2	Physical Security.
3	Personnel Security.
4	Data Protection.
5	Information Security (INFOSEC).
6	Emergency and Contingency Measures.
7	Configuration Management.
8	General Security Guidance to Users.

Table 15 – Contents of Security Operating Procedures

4.7.16.2.7.2. After approval by the Purchaser, the SecOps shall be provided as part of Product Baseline.

4.7.16.2.8. Security Implementation Verification Procedures (SIVP)

4.7.16.2.9. The Contractor shall develop, provide and maintain the initial and any updated Security Implementation Verification Procedures (SIVP) for each NEDB-NG element as part of Security Tests. These procedures shall consist of a set of software scripts and inspection procedures that shall allow a System Security Officer to verify that the installed systems at a site comply with the SRS and SecOps.

4.7.16.2.10. After approval by the Purchaser, the SIVP shall be provided as part of Product Baseline.

4.7.16.3. System Acceptance Test (SAT)

4.7.16.3.1. The Contractor shall perform System Acceptance Tests in the form of:

4.7.16.3.1.1. – System Integration Test (SIT)

4.7.16.3.1.2. – User Acceptance Test (UAT)

4.7.16.3.1.3. – Interoperability Testing and Verification (IT&V) and Independent Security Testing Support

4.7.16.4. System Integration Test (SIT)

4.7.16.4.1. The purpose of System Integration Testing is to demonstrate that the Product Baseline complies with the Functional Baseline concerning the integration with the Bi-SC AIS Hardware Baseline and the Bi-SC AIS Core Services and other Bi-SC AIS Functional Services.

4.7.16.4.2. The purpose of the SIT is also to demonstrate that the Product Baseline complies with the Interoperability requirements as specified in the SRS. Such as: information exchange and interfaces to other systems, standards and protocols.

4.7.16.4.3. The Contractor shall perform System Integration Testing by installing the Product Baseline on a Purchaser-specified Reference System or Testbed System and performing system integration and interoperability tests, with emphasis on any CIs that have been modified since Factory Acceptance Test.

4.7.16.4.4. The SIT shall be conducted on the basis of test scripts. The Contractor shall develop the initial version of the test scripts. The Purchaser will review, amend and approve the tests scripts prior to execution.

4.7.16.4.5. System Integration Testing shall also include testing of all supporting capabilities, including:

4.7.16.4.5.1. – data migration capabilities, data migration verification and validation

4.7.16.4.5.2. – collaboration capabilities,

4.7.16.4.5.3. – data display and validation

4.7.16.4.6. SIT shall use test data that is realistic in terms of structure, content and size.

4.7.16.4.7. The Purchaser reserves the right to observe the tests and to have the Contractor perform selected testing tasks on the Reference System to confirm compliance.

4.7.16.4.8. The Purchaser reserves the right to perform 5 days of ad hoc testing by Purchaser personnel with support from Contractor personnel. The Contractor shall record and assess for Contract relevance any discrepancies identified during ad hoc testing.

4.7.16.5. User Acceptance Testing

4.7.16.5.1. The Contractor shall develop and carry out tests of the NEDB-NG capability to verify that all SRS and SOW requirements are met and to establish benchmarks for system performance and system reliability, maintainability, availability and usability. This shall be referred to as a User Acceptance Test (UAT).

4.7.16.5.2. The Contractor shall support the UAT on a Purchaser-specified Reference System (e.g. NEDB-NG Reference system).

4.7.16.5.3. The UAT shall be conducted by representatives of the operational community, with support from the Contractor personnel.

4.7.16.5.4. The UAT shall be conducted on the basis of test scripts. The Contractor shall develop an initial version of the test scripts using test data and description of test outcomes developed/produced by the operational community if available. The Purchaser will review, amend with the operational community and approve the UAT tests scripts prior to execution.

4.7.16.5.5. The UAT shall also be conducted on the basis of an operational context in addition to the UAT Test Plan execution. The Purchaser and the operational community will determine which events will provide the context for the additional UAT scope.

4.7.16.5.6. The Contractor shall provide NEDB-NG training to the representatives of the operational community.

4.7.16.5.7. The Purchaser reserves the right to observe the UAT and to have the Contractor perform selected testing tasks to confirm compliance with the requirements

4.7.16.5.8. The Purchaser reserves the right to perform fifteen days of ad hoc testing by Purchaser personnel and the Operational Community with support from Contractor personnel.

4.7.16.5.9. The Contractor shall record and assess for Contract relevance any discrepancies identified during testing.

4.7.16.6. System Support and Maintenance Acceptance Testing (SSMAT)

4.7.16.6.1. The Contractor shall perform a System Support and Maintenance Acceptance Testing (SSMAT). The purpose of the SSMAT is to demonstrate that the Product Baseline complies with the Functional Baseline and provides Purchaser support staff with the capability to modify, test, and implement changes to the Product Baseline after handover to the Purchaser.

4.7.16.6.2. The Contractor shall perform SSMAT by installing the Product Baseline on a Purchaser-specified Reference System and performing system acceptance tests, with emphasis on any CIs that have been modified since Factory Acceptance Testing.

4.7.16.6.3. The SSMAT shall include testing of all supporting capabilities

4.7.16.6.4. The SSMAT shall include Reliability and Maintainability demonstration activities

4.7.16.6.5. The SSMAT shall also include testing of all supporting capabilities, including data migration capabilities, data migration verification and validation shall include use of test data that is realistic in terms of structure, content and size.

4.7.16.6.6. The SSMAT results shall be documented in test reports and all the failures shall be classified and evaluated.

4.7.16.6.7. The Purchaser reserves the right to observe the SSMAT and to have the Contractor perform selected testing tasks to confirm compliance with the requirements

4.7.16.7. Interoperability Testing and Verification (IT&V) and Independent Security Testing Support

4.7.16.7.1. The purpose of Software Accreditation is to demonstrate that NEDB-NG can be accredited for use on NATO SECRET networks within the NCI Agency CIS CCB jurisdiction.

4.7.16.7.2. The NEDB-NG software must be included in the NATO Operational Baseline as described in the Approved Fielded Product List (AFPL). The process of accreditation is divided in two phases:

4.7.16.7.2.1. – Configuration Change Proposal – the SW to be accredited is presented to a Configuration Control Board;

4.7.16.7.2.2. – Software Accreditation Test – the SW itself and the SW documentation is subjected to in-deep technical assessment by the NCI Agency.

4.7.16.7.3. The NCI Agency will plan the Test session schedule and inform the Contractor on the Test schedule. Test sessions will be repeated until successful completion. The Contractor shall be able to support security testing for 2 to 3 weeks.

4.7.16.7.4. The Purchaser will perform IT&V and independent security testing in support of the approval process for changes to the operational Bi-SC AIS configuration. The IT&V and independent security testing will be performed at the Purchaser's IT&V Test Facility at Casteau, BE unless mutually agreed by the Contractor and the Purchaser. Standard Bi-SCAIS components (e.g., operating systems, e-mail servers) will be provided at the IT&V Test Facility

4.7.16.7.5. The Contractor shall support the installation and configuration of the NEDBG-NG (as delivered in the Product Baseline) in support of IT&V and independent security testing. The Contractor shall install all required elements of the NEDB-NG Product Baseline including Purchaser and Contractor-provided COTS components on the equipment in the IT&V Test Facility using the Site Installation and Activation Procedures. The Contractor shall install test databases used to support Acceptance Testing.

4.7.16.7.6. The Contractor shall support IT&V and independent security testing performed by the Purchaser. The Contractor shall provide on-site support for the testing, including supporting the identification and resolution of issues, performance of test procedures to demonstrate system functionality, and participation in pre- and post-test reviews. The Contractor shall record and assess for Contract relevance any discrepancies identified during IT&V and independent security testing.

4.7.16.7.7. The Contractor shall resolve any discrepancies relevant under the Contract and support additional IT&V and independent security testing required to verify these fixes. If the resolution of discrepancies requires changes to the Product Baseline, the Contractor shall deliver a revised version of the NEDB-NG Product Baseline to prior to site installation and additional testing.

4.7.16.7.8. The Contractor shall support Interoperability tests performed between NEDB-NG and other applications as requested by the user. These

applications will be defined in correspondence of the Contractor's submission of NEDB-NG Test Plan.

4.7.16.7.9. The Contractor shall develop and provide system documentation as required by the NCI Agency in order to support the security penetration test and screening activities and to include NEDB-NG in the Approved Fielded Products List (AFPL). The security settings and related testing documentation will be provided as part of PFE.

4.7.16.7.10. The Purchaser reserves the right to perform user produced test scenarios during this test.

4.7.16.8. Site Activation Testing

4.7.16.8.1. The Contractor shall develop tests to demonstrate that the software installed for an individual site is ready for operational use and all supporting capabilities (e.g., data migration, user management) for operation have been successfully performed. These tests shall be used to verify Site Activation.

4.7.16.9. Operational Testing and Evaluation

4.7.16.9.1. The Purchaser will perform an Initial Operational Testing and Evaluation IOT&E) to support of the v.1.0 baseline of the NEDB-NG with support from Contractor personnel. The Contractor shall record and assess for Contract relevance any discrepancies identified during the ad hoc testing and system pilot operation. The Contractor shall produce a report within 2 weeks from the end of the IOT&E stage summarising the results of the IOC operation which shall include a summary of Deficiency Reports (DRs) along with a description of those DRs to be fixed and a recommendation to the Purchaser of minor changes or adaptations to the Product Baseline that should be made prior to the NEDB-NG v.2.0 installation and activation.

4.7.16.9.2. The Purchaser will perform an Operational Testing and Evaluation with support from the Contractor personnel immediately following the installation and activation of the system.

4.7.16.9.3. The Contractor shall record and assess for Contract relevance any discrepancies identified during the ad hoc testing and system operation.

4.7.16.9.4. The Contractor shall produce a Site Operational Test (SOT) report within 2 weeks from the end of the OT&E stage summarising the results of the OT&E period which shall include a summary of Deficiency Reports (DRs) along with a description of those DRs to be fixed and a recommendation to the Purchaser of changes or adaptations to the Product Baseline that should be considered for NEDB-NG.

4.8. Implementation

4.8.1. General

4.8.1.1. The Contractor shall install and activate the NEDB-NG, and provide the related initial operational support. This includes:

4.8.1.1.1. Surveying the site(s) to determine necessary installation, preparation, and support arrangements.

4.8.1.1.2. Assessing the training requirements.

4.8.1.1.3. Preparing implementation plans for the selected site(s).

4.8.1.1.4. Shipping all required supplies to the selected site(s).

4.8.1.1.5. Unpacking and installing the supplies in Purchaser provided facilities.

4.8.1.1.6. Populating the initial NEDB-NG database, including reference data, business rules, workflows, and reports. Initial database population shall also include populating a test database upon which all tests will be conducted and appropriate training data that reflect the developed training programme.

4.8.1.1.7. Adapting the NEDB-NG to local organisational needs. Adaptation is not intended to include changes to the Product Baseline, but shall include, as necessary, establishment of local system interfaces; creation of initial user accounts and privileges; adaptation of workflows; localisation of report templates (e.g., command logos); and changes to mapping values to support data migration.

4.8.1.1.8. Activating and testing the system for operations.

4.8.1.1.9. Conducting initial on-site training for users and system support staff and supporting NEDB-NG Operational Trainers and NEDB-NG Administrator Trainers.

4.8.1.1.10. Providing all required documentation, manuals, and training aids. All documentation, manuals, and training aids shall be delivered in a form that it can be made accessible from the NEDB-NG client workstations.

4.8.1.1.11. Support Documentation. See ILS Section 6. At least one hard copy and one soft copy shall be provided for each hardware and software CI delivered to the NATO site.

4.8.1.1.12. Rolling-out the NEDB-NG at the designated NATO site including the establishment of local system interfaces and the adaptation of business rules, reports, workflows and the assignment of User Roles and authorities.

4.8.1.1.13. Implementation providing NEDB-NG web capability to operational users at the designated NATO sites and NATO Nations MOD and/or EW-Centres.

4.8.1.1.14. Although the Purchaser will provide the facilities in which the NEDB-NG capability will be installed and the external systems to which it will be interfaced, the Contractor shall be responsible for timely and complete delivery and installation of all relevant supplies provided under this Contract.

4.8.1.1.15. The Contractor shall solve all integration and interface problems that may occur during the installation, and the responsibility for the system's operation, support, and performance rests solely with the Contractor until reaching Full Operational Capability (FOC).

4.8.1.1.16. The Purchaser reserves the right to suspend the Contractor's installation or activation work for up to two working days to avoid interfering with or disrupting a critical operational event.

4.8.1.1.17. During the installation activities, if the Contractor receives any indication of a possible requirement for a suspension, this shall be made known immediately to the Purchaser’s Project Manager.

4.8.2. System Implementation Plan

4.8.2.1. The Contractor shall provide and maintain a System Implementation Plan.

4.8.2.2. This plan shall detail the overall schedule for implementation activities, including preparation, activation, data migration, initial training, the Contractor's approach to all implementation tasks, the Contractor organisation and key personnel involved in implementation, a sample of its site survey checklist, initial site inventory, site engineering drawing(s), installation and activation checklist(s).

4.8.2.3. The specific procedures to be executed at the NATO site shall be described in Site Installation and Activation Procedures, being a part of the System Implementation Plan.

4.8.2.4. The System Implementation Plan shall include an agreed process from the use of legacy systems to the use of the NEDB-NG. This process shall be coordinated with the Operational Users.

4.8.2.5. This plan shall contain the NATO Site Point of Contact (POC) and the associated contact data.

4.8.2.6. The System Implementation Plan shall include a generic site survey workbook and checklists, fill-in forms, installation sketches, contact information, installation specifications, and any other documentation required to perform the site survey.

4.8.2.7. The System Implementation Plan shall include planning, describing the procedures, mechanisms and responsibilities to be used in putting the NEDB-NG into operation. The transition plans and procedures shall include:

4.8.2.7.1. – Technical (e.g. installation)

4.8.2.7.2. – Organisational (e.g. user administration, training)

4.8.2.7.3. – Data migration (e.g. data cleansing in the legacy systems, data transfer mappings and tools)

4.8.2.8. The System Implementation Plan shall be structured so that general implementation information is maintained in the body of the plan and site-specific details are kept as annexes.

4.8.2.9. The Contractor shall maintain the plan on the Project Website and update it to reflect changes in the SRS and SOW.

4.8.3. Deployment Readiness Review (DRR)

4.8.3.1. The Contractor shall plan and execute Deployment Readiness Review (DRR) to review preparations and readiness for deployment of system to the operational site.

4.8.3.2. As a precondition to for the Contractor to request the DRR, the version of the NEDB-NG software to be deployed must have been added to the AFPL (passed IV&V Testing) and received (Interim) Security Approval to Operate (ATO).

4.8.3.3. The Contractor shall provide the following documents for the DRR:

Serial	Requirement
1	System Implementation Plan (SIP)
2	Site Survey Report
3	Support Concept
4	Maintenance Concept
5	Transition Plan
6	Integrated Logistics Support Plan (ILSP)

Table 16 – Input for the Deployment Readiness Review

4.8.4. Site Survey Report

4.8.4.1. The Contractor shall provide a Site Survey Report detailing its findings from the NATO site survey, identifying all required Purchaser and Contractor actions to prepare for, conduct, or support NEDB-NG installation and activation, and identifying the type of training courses required and the number of Purchaser staff to be trained for each course.

4.8.4.2. At minimum, the Site Survey Report shall include:

Serial	Requirement

1	Installation & Activation: • Stakeholders communication • System installation requirements • Schedule of installation activities
2	Training requirements
3	Logistics: • Available system location & and space • Technical infrastructure • Delivery details
4	Local Security Accreditation Authority Documentation: • Contact Details of security responsibilities • Interconnection details • Network diagrams

Table 17 – Content of the Site Survey Report

4.8.4.3. The Site Survey Report shall include a site diagram that shall be used as the basis for the As Built Documentation and used in the installation of the site.

4.8.4.4. The Site Survey Report shall register all findings that require modification of the site infrastructure or change of the agreed implementation scope. For each of the changes the Contractor shall produce a formal change proposal.

4.8.4.5. For each out of scope item that requires either technical support or procurement activity, the Contractor shall offer a proposal to the Purchaser with his recommended solution.

4.8.4.6. The Purchaser will provide the Contractor with the exact shipment addresses and NATO Points of Contact (POC) for subsequent equipment delivery.

4.8.5. Site Preparation

4.8.5.1. The Contractor shall identify all facilities support issues, including modifications or additions required, within one week after the site survey.

4.8.5.2. This notification shall be in the form of an attachment to the Site Survey Report, accompanied by engineering drawings, checklists, or any other supporting information.

4.8.5.3. Facilities support issues that represent Medium or High risk items shall be highlighted in the Project Highlight Report for the month in which they are identified.

4.8.5.4. The Contractor shall provide the Purchaser and the respective Site POC with a list of hardware and software to be installed and a list of Contractor personnel who will be involved in site installation and activation at least two weeks prior to the installation date.

4.8.5.5. The Contractor shall monitor the progress of any required Purchaser facilities preparations and ensure that anything that may delay installation is brought to the attention of the Purchaser promptly.

4.8.6. Site Activation

4.8.6.1. The Contractor shall migrate local data and configuration, establish local import and export mechanisms, establish information exchange with information sources, adapt business rules to the local environment, prepare automated supervision reports, workflows, defined roles as required and assign users to roles.

4.8.6.2. The Contractor shall demonstrate via test procedures that the software installed and configured for the site is ready for operational use. The tests shall follow Site Activation Testing and Operational Testing and Evaluation (OT&E).

4.8.6.3. The Contractor shall conduct Site Activation The process shall follow a standard procedure developed by the Contractor and approved by the Purchaser prior to the commencement of installations. As a minimum, the tests shall demonstrate that:

4.8.6.3.1. All supplied equipment has been configured by the Contractor and is fully integrated within the existing site AIS infrastructure and has been implemented to meet:

4.8.6.3.1.1. Information exchange

4.8.6.3.1.2. Hardware and software configuration

4.8.6.3.1.3. Security configuration

4.8.6.3.1.4. Network and communications configuration

4.8.6.3.1.5. Systems and services configuration

4.8.6.3.1.6. System administration and management

4.8.6.3.1.7. Successful migration and logging of NEDB data

4.8.6.3.2. All user data and accounts have been successfully setup in the new environment.

4.8.6.3.3. All training pertaining to deployment, configuration and operation of NEDB-NG has been completed.

4.8.6.4. Site Activation will take place on completion and Purchaser’s acceptance of all work at the NATO site.

4.8.6.5. As a part of the Site Activation the Contractor shall present the Purchaser with witnessed and approved test results and all documentation including verified inventory, and site delivery to the Purchaser or his representative. The deliverables include all hardware and software configurations, any software licences supplied plus all documentation, maintenance, training, and logistic support included in this Contract. The Purchaser reserves the right to request draft configuration details prior to Final System Acceptance (FSA).

4.8.6.6. Any discrepancies discovered during the Site Activation shall be recorded on observation sheet(s) with a statement on their required resolution. Depending on the severity and priority of the discrepancy discovered, Site Activation may be withheld until satisfactory resolution.

4.8.7. Operational Stakeholder Acceptance

4.8.7.1. Declaration of Initial Operational Capability (IOC) for NEDB-NG shall occur when the Purchaser and Operational Stakeholders have tested and evaluated the NEDB-NG delivery at the NATO Data Centre. The criteria to declare IOC are:

4.8.7.1.1. System Acceptance Test completed and fully succesfull,

4.8.7.1.2. Web access by all Operational Stakeholders to the NEDB-NG Operational Baseline v. 1.0,

4.8.7.1.3. Additional Development & Testing successfully completed,

4.8.7.1.4. User training for NEDB-NG Baseline v. 1.0 completed succesfully,

4.8.7.1.5. One month of operation without any failure (“failure” as defined in the SRS),

4.8.7.1.6. All deliverables due at the time of IOC accepted in writing by the Purchaser.

4.8.7.2. Operational Stakeholder Acceptance and a declaration of Full Operational Capability (FOC) for NEDB-NG shall occur when the Purchaser and all Operational Stakeholders have tested and evaluated the NEDB-NG delivery. The criteria to declare FOC are:

4.8.7.2.1. New Major Release of the Product Baseline completed and accepted (NEDB-NG version 2.0)

4.8.7.2.2. User training for NEDB-NG Baseline v. 2.0 completed,

4.8.7.2.3. Web access by all Operational Stakeholders to the NEDB-NG Operational Baseline v. 2.0.

4.8.7.2.4. One month of operation without any failure (“failure” as defined in the SRS),

4.8.7.2.5. Automated Data migration completed.

4.8.8. Final System Acceptance

4.8.8.1. Final System Acceptance occurs when the Purchaser has evaluated system delivery and has determined that it meets the requirements of this Contract.

4.8.8.2. To request Final System Acceptance (FSA), the Contractor shall have completed the following actions:

4.8.8.2.1. Factory Acceptance Test (FAT)

4.8.8.2.2. System Acceptance Test (SAT), including:

4.8.8.2.2.1. System Integration Test (SIT)

4.8.8.2.2.2. User Acceptance Test (UAT)

4.8.8.2.2.3. Security Testing and Evaluation (ST&E)

4.8.8.2.3. Successful completion of the NATO site Installation and Activation;

4.8.8.2.4. Completion of the on-site training of NATO personnel involved in operation and maintenance of the NEDB-NG; and

4.8.8.2.5. The Contractor shall provide the following documents for the FSA

Serial	Item
1	Software Distribution List
2	Configuration Management Database (CMDB)
3	Material Data Sheet (MDS)
4	As Build Documentation
5	Site Activation Test (SAT) Report

Table 18 – Input for the Final System Acceptance

4.8.8.3. The Contractor shall notify the Purchaser in writing when it submits the NEDB-NG baseline for Final System Acceptance. This notification shall be accompanied by the Final System Acceptance Report.

4.8.8.4. The Final System Acceptance Report shall identify:

4.8.8.4.1. The delivered Product Baseline;

4.8.8.4.2. Status of outstanding Deficiency Reports

5. Configuration Management

5.1. General

5.1.1. The Contractor shall implement a Configuration Management (CM) program as referred to in STANAG 4159 and ACMP 1-7 to carry out the Configuration

Management functions as described in this SOW (configuration item identification, configuration control, configuration status accounting, and configuration verification).

5.1.2. The CM program shall enable the baselining of CIs into the FBL, ABL and PBL as defined in 5.2.2 and the maintenance of these baselines throughout the duration of the contract.

5.1.3. The Contractor shall ensure that an effective Configuration Management organization is established to implement and manage the Configuration Management processes throughout the duration of this contract.

5.1.4. The Contractor shall create and maintain four (4) NCI Configuration Baselines, as follows:

(1) Functional Baseline (FBL),

(2) Allocated Baseline (ABL),

(3) Product Baseline (PBL),

(4) Operational Baseline (OBL),

5.1.5. Under the CM program the Contractor shall maintain and update all project CIs as requested by changes within the project or external to the project throughout the duration of the contract;

5.1.6. The contractor shall create and maintain a Configuration Management Plan which describes the CM program and organization, as described in section 3.10 of this SoW and in this section of this SoW

5.2. Baselines

5.2.1. Functional Baseline

5.2.1.1. The Functional Baseline (FBL) is a set of documents that specifies the functional and non-functional requirements of a service or product and that is used as the approved basis for comparison.

5.2.1.2. The Functional baseline (FBL) will be derived from the NEDB-NG Software Requirements Specification (SRS) and shall be established at the successful completion of the Software Requirements Review (SRR) with the approved updated SRS.

5.2.2. Allocated Baseline

5.2.2.1. The Allocated Baseline (ABL) is a set of documents that specifies the design of a service or product and is used as the approved basis for comparison.

5.2.2.2. The design in the ABL shall meet the functional and non-functional requirements allocated in the FBL.

5.2.3. The ABL set of documents and artefacts shall contain, but is not limited to, the following documents: software design specification, including the test specification, and traceability matrix

5.2.4. Product Baseline

5.2.4.1. The Product Baseline (PBL) is a set of products and/or services, including supporting documents, which is used as the approved basis for comparison.

5.2.4.2. The PBL shall meet the functional and non-functional requirements allocated in the FBL and the design of the ABL.

5.2.4.3. The PBL products shall be distinguished in documentation, software, hardware/equipment and services.

5.2.4.4. The software products of the PBL shall contain, but are not limited to, the following: (off-the-shelf) software media, (off-the-self) software license(s).

5.2.4.5. The hardware/equipment products of the PBL shall contain, but are not limited to, the following: (off-the-shelf) hardware/equipment.

5.2.4.6. The service products of the PBL shall contain, but are not limited to, the following: (off-the-shelf) service descriptions and service level agreements.

5.2.4.7. The (supporting) documentation products of the PBL shall contain, but are not limited to: As-build drawings, off-the-shelf OEM manuals, FBL documentation, ABL documentation, operations and maintenance support documentation, inventory documentation, training documentation, quality assurance documentation, security documentation, configuration management documentation, warranty documentation and traceability matrix.

5.2.4.8. The Product Baseline (PBL) for NEDB-NG will be established after successful completion of the Preliminary Design Review (PDR) and shall be finally approved at CDR.

5.2.4.9. The Contractor shall include the NEDB-NG System Design Specification (SDS) (including the Requirements Traceability Matrix), the Test Plan, and any other documentation deemed appropriate by the Contractor, in accordance with provisions of IEEE 12207, to ensure NEDB-NG requirements are reflected in the system during development and integration, can be demonstrated through a comprehensive set of tests, and can be delivered in the form of the Product Baseline.

5.2.4.10. The Product Baseline (PBL) shall be established after successful completion of the CDR. It shall contain all delivered HWCI (optional), CSCI and documentation that comprise the NEDB-NG system and any subsequent releases. It reflects the “as-built” configuration of the system.

5.2.5. Operational Baseline

5.2.5.1. The Operational Baseline (OBL) shall be established after successful completion of the Final System Acceptance (FSA). It shall contain all delivered HWCI (optional), CSCI and documentation that comprise the NEDB-NG system and any subsequent releases. It reflects the "as-deployed" configuration of the system.

5.2.6. NEDB-NG Baselines will be given a major release number and a minor release number comprising an X.X notation. Some of the releases will be defined before hand and can be summarised as follows:

- NEDB-NG v. 1.0 is the Operational Baseline at IOC
- NEDB-NG v. 1.1 is 1.0 with minor modifications as applied during WP10.
- NEDB-NG v. 2.0 is the Operational Baseline at FSA.
- NEDB-NG v. 2.1 is 2.0 with minor modifications as applied until FOC
- Intermediate baselines, whether they are Functional or Developmental baselines, will be labelled logically within this scheme.

5.2.7. The Contractor shall include in the Product Baseline release package the following elements, as a minimum:

Serial	Requirement
1	All required CSCI
2	The source code of elements categorised as foreground knowledge, script, and configuration setting baseline, including the documentation for these items.
3	The script and configuration setting baseline, including documentation for these items, for nondevelopment software items (e.g. Microsoft Office).
4	Release notes, which include a description of what is new or changed in each software module.
5	List of open known problems and faults.
6	The SRS and SDS versions against which the baseline has been developed.
7	Interface Control Documents for NEDB-NG interfaces
8	All design artefacts provided as part of the SDS, updated to reflect the Product Baseline.
9	Conversion programs and instructions.
10	Plug-ins/add-ins, glue-code and interfaces.
11	Parameter definitions.
12	Initial data sets.
13	Online help files.

14	Test stub, along with test scenario and sample data to support the integration of NEDB-NG with other services.
15	Test procedures and scripts for any automated tests, along with all source data for the manual and automated tests and including the documentation for these items.
16	Copyright and license information.
17	Instructions for system administration staff to follow to save the previously installed system baseline, to install the new baseline, and to recover the old baseline if the new baseline installation must be interrupted or aborted.
18	Installation scripts.
19	Instructions on how to identify and report problems after acceptance.
20	Instructions for the generation of new Product baselines, distribution and installation of new software versions, and any test procedures and test cases necessary to verify the generated baseline before distribution.
21	Additional documentation artefacts identified in the SRS.

Table 19 - Content for Project Baseline Release Package

5.3. Configuration Item Identification and Documentation

5.3.1. The Contractor shall divide the products and specialist products into CIs.

5.3.2. The CI structure shall be a graph structure with the Product Baseline being the top level and shall show the relationships between the lower level Baselines and CIs.

5.3.3. An explanation of the rationale and criteria used in the process of selecting CIs shall be provided and be based on the criteria for selection of CIs as detailed in ACMP-2.

5.3.4. The CIs shall be chosen in a way to assure visibility and ease of management throughout the development effort and the support to the OPL after acceptance.

5.3.5. All COTS, adapted, and developed software shall be designated as CIs.

5.3.6. Where COTS can be installed in a modular fashion, the description of the CI shall unambiguously identify the complete list of installed components.

5.3.7. All complete hardware elements shall be designated as CIs. (Optional)

5.3.8. Additional guidance about CI selection can be found in ACMP-1 and in STANAG 4159.

5.3.9. The Contractor shall ensure that the configuration baselines and configuration items are persistently stored in a COTS Configuration Management Database (CMDB) and that it shall be kept consistent and updated.

5.3.10. The CMDB shall provide the ability to easily trace higher and subordinate CIs using CI identifiers or other CI attributes.

5.3.11. The Purchaser reserves the right to modify the CI structure and attributes.

5.3.12. The level of granularity for the Configuration Item selection shall reach at minimum:

- Line Replaceable Units (LRUs) - Hardware CIs,(Optional)
- Software Assets and/or Firmware - Software CIs,
- Documentation delivered under this Contract - Documentation CIs,
- The Hardware CI attributes shall include, but is not limited to, the Material Datasheet information,(Optional)
- The Software CI attributes shall include, but is not limited to, the ACMP-1 definitions,
- Any Documentation CI that is not linked to a Software CI or Hardware CI (optional) shall include, but is not limited to, the Contract Schedule of Supplies and Services (SSS) attributes.

5.4. Configuration Control

5.4.1. The Contractor shall be fully responsible for the Configuration Control of all Baselines and CIs in accordance with ACMP-3.

5.4.2. The Contractor shall define the responsibilities and procedures used within the Contractor's organization for configuration control of established CI, and for processing changes to these CI.

5.4.3. The authority and responsibility of the Contractor and the Purchaser with respect to configuration control shall be defined herein.

5.4.4. The Contractor shall define the Configuration Baseline Change procedures and shall submit Notice of Revision or Request for Deviations and Wavers when required and approved by the Purchaser.

5.5. Engineering Change Proposals

5.5.1. Changes to baseline CIs shall be processed as either Class I or Class II Engineering Change Proposals (ECPs) as defined in ACMP-3.

5.5.2. The Contractor shall propose in the CM Plan an ECP format based on the requirements in ACMP-3.

5.5.3. The Contractor shall use the configuration control procedures specified in the CM Plan for the preparation, submission for approval implementation and handling of ECPs to baseline CIs.

5.5.4. When submitting ECPs, the Contractor shall assign a priority rating of Emergency, Urgent or Routine.

5.5.5. Extensions to the target times for processing Class I ECPs shall be mutually agreed upon by the Contractor and Purchaser.

5.5.6. The Contractor shall not implement Class I ECPs before Purchaser approval.

5.5.7. Prior to implementation, all Class II ECPs shall be submitted by the Contractor to the Purchaser for review and classification concurrence.

5.5.8. If the Purchaser's representative does not concur in the classification, Class I ECP procedures shall be applied and the ECP shall be formally submitted to the Purchaser for approval or rejection.

5.5.9. The Contractor shall appropriately reflect in the technical documentation all design changes by the issue of appropriate changes or revisions.

5.5.10. The Contractor shall provide all such changes/revisions to the Purchaser for review and approval.

5.5.11. Any Engineering Change Proposal shall include, as a minimum, the following information:

- Reference Number
- Requirement affected (using the outline numbering of the core SOW, or of Annex A and B)
- Nature of change
- Rationale for the change
- Impact of change
- Description of how the change will be reflected in the delivered system's cost, schedule, and/or performance. This description shall include any trade-offs that shall be considered.
- Status
- Priority

5.6. Requests for Deviation and Waiver

5.6.1. If required, the Contractor shall prepare, handle, and submit for Purchaser approval, Requests for Deviation (RFDs) and Requests for Waiver (RFW) as defined in ACMP-3.

5.6.2. The Contractor shall propose in the CM Plan a RFD/RFW format based on the requirements in ACMP-3.

5.6.3. The Contractor shall be aware that permanent departures from a baseline shall be accomplished by Engineering Change Proposal (ECP) action rather than by RFD.

5.7. Configuration Status Accounting

5.7.1. The Contractor shall be fully responsible for the Configuration Status Accounting (CSA) for all CIs in accordance with ACMP-4.

5.7.2. Under the CSA function the Contractor shall prepare CSA reports in a manner, and format which shall be proposed by the Contractor in his CM Plan and approved by the Purchaser.

5.7.3. The Contractor shall deliver CSA reports to the Purchaser both as part of management and specialist products in this contract and also as standalone documents at the Purchaser's request.

5.7.4. At the end of the Contract, the Contractor shall deliver a set of final CSA reports for each CI or set of CI's in both hard copy and in electronic media.

5.8. Configuration Verification

5.8.1. Upon request from the Purchaser, the Contractor shall support configuration audits to demonstrate that the actual status of all Cis matches the authorised state of CIs as registered in the CSA reports according to ACMP-5.

5.8.2. The Contractor shall support the Functional Configuration Audit (FCA) and Physical Configuration Audit (PCA) by providing the required Baseline Documentation and answering questions from the Purchaser's Auditor.

5.8.3. The Contractor shall draft a Configuration Audit Report for the FCA and PCA that summarises the results for the Purchaser's approval.

5.8.4. The Contractor shall solve any deficiencies found during the Configuration Management Audits within the agreed timeframe and update the Baseline accordingly.

5.8.5. The initial version of the ABL, and PBL shall be provided to the Purchaser for acceptance. Upon Purchaser Acceptance, ABL and PBL shall be placed under the control of the Configuration Control Board (CCB).

5.8.6. The acceptance of the ABL and PBL by the Purchaser signifies only that the Purchaser agrees to the Contractor's approach in meeting the requirements. This acceptance in no way relieves the Contractor from its responsibilities to meet the requirements stated in this Contract.

5.8.7. The Contractor shall keep the contents of the ABL and PBL under Configuration Control and shall keep it current to reflect the progress of the project activities.

5.9. Configuration Management and Software versioning Tool

5.9.1. The Contractor shall create and maintain a COTS based Configuration Management Database (CMDB) that persists the Configuration Items CIs) attributes, (inter-) relationships, and Configuration Baselines.

5.9.2. A software source code version control program shall be used for any custom software development.

5.9.3. Subject to approval of the Purchaser under the Technology Substitution clause, the Contractor shall establish and maintain the baselines referred to above using the latest commercial version of the version control/configuration management automated tool specified in the SRS.

5.9.4. The version control/configuration management automated tool shall include the capabilities for baselines management, source control versioning, configuration item identification, change request management, deficiency reporting management, and configuration status accounting.

5.9.5. The Contractor shall provide the Purchaser read-only access to the version control/configuration management automated tool via the project Web-site.

5.9.6. The Contractor shall provide the ability for the Purchaser to access (read-only) the source code of the baseline via the version control/configuration management automated tool.

5.9.7. A software version source code control program shall be used for any custom software development.

5.9.8. The Contractor shall provide these tools as part of the NEDB-NG Reference System to enable life-cycle configuration management.

6. Integrated Logistics Support (ILS)

6.1. General

6.1.1. This section outlines the supportability requirements of the project. It addresses various Integrated Logistic Support (ILS) elements such as: maintenance, support services, transportation, warranty, software installation and accreditation.

6.1.2. All Contractor and Purchaser activities and milestones related to ILS shall be identified and included in the Project Master Schedule (PMS) of the PMP in the PIP

6.1.3. The Contractor shall provide a set of integrated logistic support needs and requirements, by tailoring, developing, maintain and update a set of ILS programmatic documentation which cover the following logistics aspects of the system (where applicable), which are:

1. Computer Resources
2. Design Influence
3. Maintenance
4. Manpower and Personnel
5. Product Support Management
6. Support Equipment
7. Sustaining Engineer
8. Technical Data
9. Training and Training Support

6.1.4. The contractor shall use the ASD SX000i specification as guidance when establishing and conducting the ILS program, in accordance with the requirements of the contract.

6.2. Integrated Logistics Support Plan

6.2.1. The Contractor shall develop and maintain the NEDB-NG ILSP. The ILSP shall be structured according to the template provided in ASD SX000i.

6.2.2. The Contractor shall adapt the ILSP structure to the NEDB-NG capability scope and submit the first release for Purchaser approval not later than the project “CDR-IOC” milestone.

6.3. Maintenance concept

6.3.1. The Contractor shall develop and maintain the NEDB-NG Maintenance Concept that defines the maintenance environment, constraints, locations, procedures, artefacts, organisation and personnel skills to maintain PBL and the OBL.

6.3.2. The Maintenance Concept shall refer to the functional and non-functional Maintenance Requirements of the NEDB-NG FBL.

6.3.3. The Maintenance Concept shall define the 1st, 2nd and 3rd Level Maintenance tasks. At each of these Levels, the procedural description shall include objective(s), triggering event(s), input(s), output(s), task(s), roles and Responsibilities, Accountabilities, Consulting, and to Inform (RACI-format), constraints, exceptional case(s), and tool(s) support.

6.3.4. The Contractor shall define the Maintenance process interfaces to the other processes in the Service Delivery Plan.

6.3.5. As an annex of the ILSP, the Supply Support Plan shall define the Supply support requirements and shall describe the procedures for the provisioning, procurement, and acquiring of spare/repair parts, inventories, and consumable material for PBL and the OBL during the TMO and FMO period.

6.3.6. The Maintenance Concept shall define the PBL maintenance and supply flow amongst the various NATO locations, organisations, groups, and people.

6.3.7. NEDB-NG should use the established Maintenance Concept.

6.4. Support concept

6.4.1. The Contractor shall develop and maintain the NEDB-NG Support Concept showing how the 2nd and 3rd Level Customer Support will be implemented and performed.

6.4.2. The Contractor shall define the 2nd and 3rd Level Support process interfaces to the other processes, including the existing Service Desk at NCIA Mons .

6.4.3. The Support process interface definition shall include the input and output information, its structure, the communication path (POC's), the time constraints for sending and receiving information, and quality criteria to evaluate the integrity of the interface.

6.4.4. At each Support Level, the Support Concept shall describe the support environment, constraints, locations, procedures, artefacts, organisation and personnel.

6.4.5. The procedural description shall include objective(s), triggering event(s), input(s), output(s), task(s), roles and responsibilities (RACI-format), constraints, exceptional case(s), and tool(s) support.

6.4.6. The NEDB-NG ILSP shall be based on the established Support Concept, approved by the Purchaser.

6.5. Logistic Support Analysis

6.5.1. The Contractor shall conduct a Logistic Support Analysis program, tailored to support the specific scope of the System operation activities.

6.5.2. The Contractor shall use [STANREC 4174], and [ASD S3000L] as guidance when establishing and conducting the LSA programme.

6.5.3. The LSA analysis, which shall be annexed to the ILSP, shall include:

6.5.3.1. LSA and RAM (Reliability, Availability, Maintainability) responsibility, analysis and procedure

6.5.3.2. planning of the identification of operation and Service Management and Control (SM&C) tasks;

6.5.3.3. planning of a Task Analysis for operation tasks, SM&C tasks, corrective maintenance tasks and preventive maintenance tasks; and

6.5.3.4. planning of a maintainability demonstration.

6.5.4. The Contractor shall develop and maintain a Support Case in which all LSA and RAM activities shall be documented. The Support Case shall include:

6.5.4.1. all calculations on availability, reliability, and maintainability;

6.5.4.2. the complete data set of the Task Analysis, including listings of all operation tasks, SM&C tasks, corrective maintenance tasks and preventive maintenance tasks;

6.5.4.3. the results from the maintainability demonstration;

6.5.5. The Support Case shall form a body of evidence, providing sufficient credibility that all LSA and RAM requirements have been met and providing credibility to the data used and the results achieved in all calculations and models.

6.5.6. The Support Case shall provide rationale and justifications for all data and formulas used in any of the calculations and models

6.6. RAM Requirements

Specific system level RAM requirements are included in the System Requirements Specification (SRS).

6.6.1. Intrinsic Availability (Ai) shall be calculated as MTBF / (MTBF + MTTR).

6.6.2. MTTR shall be understood as Mean Time To Repair, to include fault isolation, access, disassembly, remove and replace, reassembly, configuration, check-out and start up, and to exclude administrative and logistics delay times.

6.6.3. Operational availability (Ao) shall be calculated as Uptime / (Uptime + Downtime) where Downtime shall include consideration of Corrective Maintenance Time (CMT), Preventive Maintenance Time (PMT), and Logistics Delay Time (LDT).

6.6.4. Logistics Delay Time (LDT) shall be equivalent to the response time of the hardware or software support contract offered as part of the SLA arrangement. For hardware and software at a location with a 24/7/4 support arrangement, the LDT shall be four (4) hours. For hardware and software at a location with an 8/5/NBD support arrangement, the LDT shall be twenty-four (24) hours. For hardware at a location with on-site, Contractor-owned spares, the LDT shall be zero (0) hours.

6.6.5. The design of the system shall include sufficient redundancy and other reliability, maintainability, availability and testability measures to ensure the RAM requirements in this Contract are achieved and attained at an optimal Total Cost of Ownership (TCO), minimising preventive maintenance, spare parts consumption, manpower requirement and usage of special-to-type tools and test equipment. Such measures taken to ensure fulfilment of RAM requirements and optimisation of TCO shall be documented in the Support Case.

6.6.6. The Contractor shall develop and maintain a list of operation tasks, SM&C tasks, corrective maintenance tasks and preventive maintenance tasks, to be used as a starting point for the task analysis

6.6.7. Operation tasks shall be identified through analysis of the functional requirements of the new system taking into account mission scenarios and conditions under which the system will be operated. The analysis shall examine each system function allocated to personnel and determine what operator tasks are involved in the performance of each system function

6.6.8. SM&C tasks shall be identified through analysis of all functions related to customer support and service management and control. The analysis shall examine each customer support function and service management and control function allocated to personnel and determine what SM&C tasks are involved in the operation and maintenance of the system.

6.6.9. For each task, the Contractor shall determine the properties and physical resources required to execute the task. For that purpose, each task shall be analysed to identify and capture:

6.6.9.1. the support level to be assigned;

6.6.9.2. location/ facility involved;

6.6.9.3. personnel skills required;

6.6.9.4. task duration and frequency, reusing MTBF and MTTR data available;

6.6.9.5. manpower required;

6.6.10. For each task, the Contractor shall perform a cost calculation based on the properties and physical resource requirements of each task. The cost calculation shall provide an estimated annual cost for each task.

6.6.11. The data and results of the Task Analysis shall be used as input to the development of manuals and the development of training material to the maximum extent possible.

6.7. Training

6.7.1. The Contractor shall develop a Training program for NEDB-NG administrators, users and NEDB-NG support personnel, including Purchaser instructors.

6.7.2. This training shall utilise a combination of lecture and hands-on exercises to ensure students completing a course can perform to the level agreed to in the NEDB-NG Training Plan. The NEDB-NG Training Program shall include:

6.7.2.1. Training for Purchaser staff on the NEDB-NG.

6.7.2.2. Development and delivery of training courses and course materials, including a Programme of Instruction for each training course, in accordance with Bi-SC Directive 75-7 on Course Development [Bi-SC Dir 75- 7].

6.7.2.3. Development and maintenance of online tutorials.

6.7.3. Training Courses

6.7.3.1. The Contractor shall develop and deliver the Training Courses for the NEDB-NG in accordance with Bi-SC Directive 75-7 on Course Development.

6.7.3.2. The courses shall provide training for the various categories of users based on the Training Needs Analysis or specific direction from the Purchaser.

6.7.3.3. The training courses shall be performed using Purchaser-identified training facilities.

6.7.3.4. Course Delivery

6.7.3.4.1. The Contractor shall deliver training at Purchaser-specified locations using Purchaser-furnished facilities and equipment and the training version of the NEDB-NG database.

6.7.3.4.2. At a minimum, the Purchaser-furnished facilities and equipment will support access to the training database, running on an NEDB-NG server, from fifteen (15) student workstations.

6.7.3.4.3. The Contractor shall provide each student attending a Training Course it conducts with a hard and electronic copy of the Student Manual for the course.

6.7.3.4.4. The Contractor shall include a feedback form with each hard copy of the Student Manual and request students to complete and return the form at the end of the course.

6.7.3.4.5. The Contractor shall, as directed by the Purchaser's Project Manager, revise the Training Materials for each course to reflect student feedback from the initial session of each course.

6.7.3.5. Training Materials

6.7.3.5.1. The Contractor shall develop and provide the following Training Materials for each Training Course:

6.7.3.5.1.1. Course title

6.7.3.5.1.2. Course description

6.7.3.5.1.3. Learning objectives, as identified in the Training Needs Analysis and confirmed in the Training Plan.

6.7.3.5.1.4. Instructional methodologies to be employed in the delivery of the course.

6.7.3.5.1.5. Total number of instructional hours.

6.7.3.5.1.6. In-class assignments or laboratories.

6.7.3.5.1.7. Evaluation tools.

6.7.3.5.1.8. Performance standards.

6.7.3.5.2. Instructor Manual. The Instructor Manual shall enable the instructor to conduct the training course to meet the learning objective within the allocated training period and shall be consistent with the approved POIs.

6.7.3.5.3. Student Manual. The Student Manual shall describe the concepts, functions, and features presented in the course, including links or references to the relevant documentation included in the NEDB-NG Product Baseline.

6.7.3.5.4. Training presentation materials. Training presentation materials shall include all slides or other information to be presented by the instructor during the course.

6.7.3.5.5. Training database

6.7.3.5.5.1. The Contractor shall develop an operationally-realistic set of NEDB-NG data, including a representative number of each information object to support training objectives for use in NEDB-NG Training Courses and Training Materials.

6.7.4. On-line Tutorials

6.7.4.1. The Contractor shall develop a set of on-line tutorials to enable NEDB-NG end users and self-service users to perform the tasks associated with their roles (operators and administrators).

6.7.4.2. These tutorials shall be integrated with NEDB-NG on-line help so that users can switch back and forth between help and tutorials without loss of navigation history.

6.7.4.3. The tutorials shall include:

6.7.4.3.1. Key concepts and terminology.

6.7.4.3.2. Common data entry, query, and reporting tasks.

6.7.4.3.3. Answers to frequently-asked questions, derived from student and user feedback, including feedback from the pilot implementations.

6.7.4.3.4. The Contractor shall deliver this tutorial as part of the Product Baseline.

6.7.5. Computer Based Training

6.7.5.1. The Contractor shall provide Sharable Content Object Reference Model (SCORM – edition 4, SCORM 2004) Compliant Computer-Based-Training (CBT), which can be delivered to the students over the Internet, on private networks and as stand-alone material on electronic media such as CD/DVD (for operators and administrators).

6.7.5.2. The Contractor shall match the training documentation for use with a number of recognised approaches (as concluded through the TNA and approved by the Purchases), including as a minimum: formal classroom instruction, interactive, self-directed, SCORM Compliant Computer-Based-Training (CBT), hands-on training and on the job training.

6.8. Management and Control of Logistic Movements

6.8.1. General

6.8.1.1. All items, including all spared and repaired goods, shall be delivered Delivery Duty Paid (DDP) Destination (Incoterms 2000) to the NATO destinations identified in the Schedule of Supplies and Services at Contractor’s expense.

6.8.1.2. During the warranty period, repaired/exchanged goods shall be delivered directly to their original sites DDP Destination (Incoterms 2000) unless otherwise instructed by the Purchaser.

6.8.1.3. Prior to transportation, all deliveries shall be preceded by a Notice of Shipment. The format, content and timelines associated with this notes notice are specified in the relevant section of this document. All carriage costs shall be undertaken by the Contractor. The Contractor shall only pay the custom charges following authorisation by the Purchaser and he shall immediately

inform the Purchaser of any problems that may arise (e.g., acceptance refusal by a country).

6.8.1.4. Delivery sequence of shipment related documents:

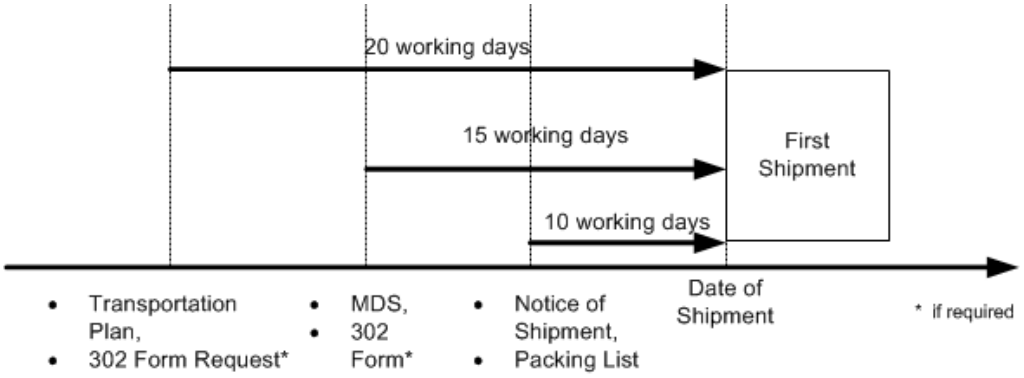

Figure Figure 1 - Shipment Sequences

6.8.1.5. The NCI AGENCY PoC for all shipment instruction and shipment request is:

NATO Communications & Information Agency (NCI Agency)
Attn.: Andreas Hutzenlaub
ILS Officer
Ave. du Bourget 141
B-1110 Brussels
Belgium
Tel: +32 (0)2 707 8368
Fax: +32 (0)2 707 8770
E-mail: andreas.hutzenlaub@ncia.nato.int

6.8.1.6. The Contractor shall create and maintain a Transportation Report that states the planned versus the current and final transportation results, including the delivery stages, location(s) and dates with the corresponding receiving NATO and non-NATO POC's and confirmations/signatures.

6.8.2. Transportation Plan

6.8.2.1. The Contractor shall provide the Transportation Plan latest twenty (20) working days before the first equipment delivery.

6.8.2.2. The Transportation Plan shall describe the end-to-end route, stages, and schedule of the PBL CI transportation from the Contractor's origin to its final operational destination.

6.8.3. Transportation

6.8.3.1. The Purchaser shall not be liable for any storage, damage or any other charges involved in such transportation of supplies prior to site delivery.

6.8.3.2. The Contractor is responsible for the availability of proper storage space and availability of Material handling equipment that may be required for the equipment shipped to the destination/location. He may wish to liaise with the local Command and coordinate availability of such facilities and material through the Purchaser's ILS officer.

6.8.3.3. The Contractor shall, for the purpose of transportation, package, and crate or otherwise prepare items in accordance with the best commercial practices for the types of supplies (including computer, CDs and documentation) involved.

6.8.3.4. All supplied items shall be packaged and packed by the shipping agent using the best commercial practices.

6.8.3.5. Transportation of Equipment: If the main equipment to be procured comprises servers and workstations or other electronic outfits (i.e., routers, switches), packaging shall normally be standard trade packs delivered by the manufacturer. For those repairable items that will be returned to a store/repair location, suitable re-usable packaging may be provided to ensure that they arrive at their destination secure and undamaged during transit.

6.8.3.6. Transportation of Software CDs: In order to avoid damage, these items shall be wrapped and packaged in reinforced cardboard boxes as per standard trade packs.

6.8.3.7. Transportation of Documentation: Packaging shall be standard trade packs.

6.8.4. Packing Lists and Marking

6.8.4.1. The Contractor shall supply packing lists for each consignment to allow for easy identification and mapping against the deliverables stated in the Schedule of Supply and Services.

6.8.4.2. Three packing lists shall be provided for each individual package/pallet as follows:

6.8.4.3. Two copies affixed outside in a sealed/weather-proofed enclosure:

6.8.4.4. One copy inside the package/pallet

6.8.4.5. The packing list shall include the following:

Serial	Requirement
1	The Shipping Address
2	Package number
3	Contract Number
4	CLIN Number as per Schedule of Supply and Services
5	Item Description
6	Part Number

7	Serial Number
8	Quantity
9	Weight and Volume details
10	Box number and number of boxes in the consignment
11	Name and address of the Contractor, Purchaser and Consignor

Table 20 - Packing List for Shipped Materials

6.8.4.6. In addition to standard commercial marking, all shipped packages shall show on a nameplate affixed outside of the package: the Project Name, contract number and shipping address, and the package shall be clearly marked with the text “AIS EQUIPMENT – NATO PROPERTY”.

6.8.5. Notice of Shipment

6.8.5.1. Ten (10) working days prior to the delivery of any shipment of supplies, the Contractor shall provide Notice of Shipment to the Purchaser and to such other persons as are designated, in accordance with the instruction of the Purchaser.

6.8.5.2. The Contractor shall provide the Notice of Shipment in the format described below:

Serial	Requirement
1	Purchaser Contract Number
2	Contract line Item Number (CLIN), designation and quantities
3	Items Description, Quantity and Manufacturer Part Number
4	Destination
5	Number and gross weight
6	Consignor’s and Consignee’s name and address
7	Method of shipment, e.g., road, air sea, etc..
8	Date of shipment
9	Number of the Form 302 used

Table 21 - Format for Notice of Shipment

6.8.6. Custom Documentation

6.8.6.1. The Contractor shall be responsible for the timely request of approval of Custom Forms 302, required for duty free import/export of supplies between certain countries.

6.8.6.2. If applicable, the Contractor shall submit the Request for 302 Customs Form twenty (20) working days prior shipment date to the Purchaser.

6.8.6.3. Following receipt of the request by the Purchaser, normally a maximum of ten working days are required for the issue of the form. These forms shall be

originals and shall be delivered by mail/express courier. The written request for a Custom 302 form delivered by the Contractor shall contain the following information:

Serial	Requirement
1	Purchaser Contract Number
2	Contract line Item Number (CLIN), designation and quantities
3	Destination
4	Number and gross weight
5	Consignor's and Consignee's name and address.
6	Method of shipment, i.e. road, air sea, etc.
7	Name and address of the freight forwarder

Table 22 - Content of Custom 302 Form

6.8.6.4. If a Country refuses to accept the Custom Form 302 and requires the payment of custom duties, the Contractor shall immediately inform the Purchaser by the fastest means available and obtain from the Custom Officer a written statement establishing that its country refuses to accept the Custom Form 302.

6.8.6.5. Only after having received Purchaser's approval, the Contractor shall pay these customs duties and shall claim reimbursement to the Purchaser.

6.8.6.6. The carrier shall be fully conversant with the application and use of Custom Form 302.

6.8.6.7. The Contractor shall be responsible to add the Custom Form 302 to the shipping documentation.

6.8.7. On-site Delivery

6.8.7.1. During the Site Survey, the Purchaser will provide the Contractor with the exact shipment addresses and NATO Points of Contact (POC).

6.8.7.2. Delivery, unless otherwise specified, shall be to a single location at each site subject to system installation.

6.8.7.3. Each site Point Of Contact shall be notified of all impending deliveries prior to their shipment. The notification shall include:

6.8.7.3.1. Instructions for reception,

6.8.7.3.2. All details of the shipped item as per Packing Lists,

6.8.7.3.3. An inspection and inventory check-up form.

6.8.7.4. Each site POC shall be faxed a copy of the tailored reception instructions, at least by the date the shipping notice is given. The reception instructions shall

include a reception check-out form to be used to inspect and inventory the received shipment.

6.8.7.5. The site POC will take delivery of the shipped goods and allow for their storage awaiting installation by the Contractor.

6.8.7.6. The Contractor:

6.8.7.6.1. Shall expect that User designated site personnel will be able to carry out a visual inspection of the received items in order to identify any external indications of damage. This will allow the Contractor to initiate a claim for damage to package content to the shipping insurance.

6.8.7.6.2. Shall acknowledge that the Purchaser representative cannot be held liable for not having reported any damage on received items.

6.8.7.6.3. Shall request that no package be opened, even to conduct a visual inspection, unless written permission has been given.

6.8.7.7. Material Data Sheet (MDS) and Inventory List

6.8.7.7.1. The Contractor shall provide fifteen (15) working days before the first delivery of equipment the MDS in electronic format.

6.8.7.7.2. The Contractor shall deliver the inventory of deliverables according to the following Material Datasheet (MDS) template:

Field	Description
CLIN	Contract Line Item Number (number-10 digits maximum). Sequence number assigned to a particular line item in a given contract. The combination CLIN-Contract No. shall always be unique.
NSN	NATO Stock Number (number-13 digits). Identifies an item codified by one of the NATO countries' National Codification Bureaus. It shall always be linked to at least one part number with the corresponding manufacturer code. It is recommended that the Contractor system integrator requests codification from the National Codification Bureau of the original manufacturer's country. If NSN is known prior to system delivery it shall be added in this field.
Nomenclature	Short Item Description (text- 35 digits). Should always start with the main item name followed if possible by a technical specificity, followed by the next higher assembly names in hierarchical order, separated by commas. E.g., for a coax connector of a television cable the nomenclature should read: CONNECTOR, COAX, CABLE, TELEVISION.
EQRE (XB/ND)	Code (text-2 digits). Defines whether an item is repairable (ND) or not (XB) from a technical point of view. The valid codes are listed in the "Codes" worksheet under “EQRE”.
True Manufacturer Part Number	True Manufacturer P/N (text-32 digits). Part Number given to this item by the original manufacturer.

Field	Description
True Manufacturer Code (or complete name and address)	True Manufacturer Code (text-5 digits). Code of the Company that has manufactured this item. This is an internationally recognized 5-digit code which is unique to that company. It corresponds to the “cage code” in the USA. Manufacturer Codes and Cage Codes are obtainable from the national governmental authorities or, if it already exists, from the “NATO Master Cross-Reference List” (NMCRL) obtainable from NAMSA. In case the code cannot be obtained, it will be sufficient to enter the complete name and address information of the true manufacturer.
Vendor/Contractor Code (or complete name and address)	Vendor (Contractor) (text-5 digits). Company which sells the item or the complete system to which this item belongs. The vendor is the company with which the contract is placed but is not necessarily the true manufacturer of the item. If the vendor company has also designed and integrated the complete system it is also known as Original Equipment Manufacturer (OEM). The company code is an internationally recognized 5-digit code which is unique to that company. It corresponds to the “cage code” in the USA. Manufacturer Codes and Cage Codes are obtainable from the national governmental authorities or, if it already exists, from the “NATO Master Cross-Reference List” (NMCRL) obtainable from NAMSA. In case the code cannot be obtained, it will be sufficient to enter the complete name and address information.
Vendor/Contractor Part Number	Vendor (Contractor) P/N (text-32 digits). Part Number given to this item by the company which sells the item or the complete system to which this item belongs. The vendor is the company with which the contract is placed but is not necessarily the true manufacturer of the item.
Quantity ordered	• Item Quantity (number-5 digits). Shows the quantity of this item ordered as individual item in this contract, i.e., if it is not delivered built-in in another unit. • In case the item is not ordered as individual item or as spare unit but is built-in in another assembly, enter “0” (zero) in this field and complete fields: “Part Number of next higher assembly” and “qty in next higher assembly”. • Serialized items shall only have a quantity of 1.
Order Unit	Order Unit (text-2 digits). Unit under which the item is sold, e.g., each, set, meter, etc… See codes column “Unit”.
Serialized Item Tag	Serialized Items Tag (text-1 digit). Add a “Y” if the item carries a serial number independently whether serial numbers is already known or not. If known, complete column “Serial Number”.
Serial Number	Serial Number. If Serialized Item Tag is “Y” (yes) then add serial number here. (1 serial number per line). If system is already installed, then the Contractor shall indicate here the serial numbers installed at user site. For items to be delivered to depots the Contractor may not know the serial number in advance, in that case it will be completed by the receiving site.

Field	Description
Serial Number Software Revision Level	Software Revision Level (text- 30 digits but can be expanded as necessary). If item carries a serial number and field “serial number” is completed, add SW revision level/version here if appropriate.
Other Serial Number attributes	Other Serial Number Attributes (text-to be defined). This field will be used and defined on a case by case basis to be decided by the NCI Agency System Manager, and the Contractor for other attributes which might be required for a particular system.
Subject to Property Accounting	NDSS-MRCS (text-1 digit). The NCI Agency will decide whether or not item is subject to property accounting and is to appear on the customer balance lists. This field will be completed Y or N by The NCI Agency.
Currency	Currency (text-3 digits). International 3-digit code (ISO) representing the currency in which the item purchase price (or the estimated value) is expressed.
Price	Item Price (number-11 digits). Unit price with 2 decimals.
Warranty Expiration Date	Warranty Expiration Date (date: DD/MM/YY). Shows the date on which the warranty of this item expires, which is usually N days after delivery of the item. If delivery is scheduled for a certain date, warranty expiration date = delivery date + warranty period in days.
Receiving/Inspection Depot	Receiving/Inspection Depot (TXT-2 digits). Information will be provided to Contractor by the NCI Agency. This is the depot to where the vendor ships the material. Normally this depot will receive, inspect and put the material in stock against Dues-In to be created in accordance with Qty in column “Qty Ordered”. In case of a deviation from this rule, the NCI Agency will advise the Contractor of the correct final Depot and through which depot the items shall have to transit.
Issue to customer	Customer Code (text-4 digits - to be completed by the NCI Agency). Code representing the customer to which the item(s) shall be shipped by the receiving/inspecting depot.
Extended Line Item Description	Extended Line Item Description (text-no limit). Any additional information concerning this item shall be entered here, e.g., technical specifications, configuration, reference to technical drawings or manuals etc…
Part Number of next higher assembly	Part-Number of Next Higher Assembly (text-32 digits) If item is built-in another assembly, indicate part number of that assembly here.
Quantity in next higher assembly	Quantity in Next Higher Assembly (number-3 digits max). This field shows the built-in quantity of the item in the next higher assembly. This information shall be provided for configuration control purposes.
Quantity installed at Operating Unit (Customer Site)	Quantity installed. This field is only applicable when the delivery is direct to an operating unit (customer site). However in that case it is mandatory. • For non-serialized items it shows total quantity installed. • For serialized items quantity shall only be one per serial number. Use a new line for each serial number.

Table 23 - Material Data Sheet Template

6.8.7.7.3. Right after signing of the Contract, the Contractor shall contact the NCIA POC to verify the format of the Material Data Sheet stated in the table above.

6.8.7.7.4. The Contractor shall establish and maintain at all times during the course of performance one Inventory List readily accessible by the Purchaser containing inventory information for all site deliverables (including software and documentation), their identification details and the location of all items across all the Purchaser's sites.

6.8.7.7.5. The inventory shall include all items delivered and shall comprise the following categories:

6.8.7.7.5.1. Documentation, including COTS provider documentation and technical publications.

6.8.7.7.5.2. Software disks including COTS related software and developmental software (where applicable)

6.8.7.7.6. This inventory shall be exportable from the Contractor system as an MS-Excel file for delivery to the Purchaser on hardcopy and electronic media.

6.8.7.7.7. A single site deliverable inventory shall be made readily available and delivered to site together with the deliverables at the time of acceptance. Required changes shall be recorded during the acceptance process and fed back to the database.

6.8.7.7.8. An advance copy of the inventory shall be sent to the Purchaser's ILS officer either ten (10) working days before a scheduled Site Installation or ten (10) working days before delivery in all other cases, unless explicitly agreed with the Purchaser.

6.8.7.8. NATO Codification and Labelling

6.8.7.8.1. The Configuration Management process shall provide for a single product identification numbering system for all the items delivered under the Contract.

6.8.7.8.2. The proposed numbering system shall be compliant with NATO Codification requirements (such as AC/135) although close compliance with this directive is not strictly required.

6.8.7.8.3. The SW versioning numbering scheme shall be compliant with the NCI Agency document SMD TI Version numbering 2-04 (Annex D).

6.9. Transition Support

6.9.1. The Contractor shall support the Transition Process between the Implementing Authority (IA) and the Operating Authority (OA) and Service Provision Authority (SPA) as defined in the SOW

6.9.2. The Contractor shall support the Technical Transfer (e.g. at Site Acceptance) to the SPA by preparing tests procedures, executing the tests, and submitting test reports to the IA and SPA.

6.9.3. The Contractor shall support the Operational Evaluation phase by providing the PBL Operating and Maintenance Support documentation to the OA.

6.9.4. The Contractor shall solve any deficiencies found and assigned to him during the Technical Transfer or Operational Evaluation prior to Final Support Acceptance;

6.9.5. The Contractor shall perform the Technical Knowledge transfer to the SPA and OA as defined in the Training Plan

6.9.6. The Purchaser's existing 1st Level Support with its Service Desk trouble-ticketing system shall be used for opening, modifying, tracking, and closing Trouble Tickets, and logging of all requests concerning the PBL and OBL;

6.9.7. The Contractor shall provide 2nd and 3rd Level Support for the PBL after IOC, until the FOC;

6.9.8. The Contractor shall provide 3rd Level Support during the Warranty period on the OBL;

6.9.9. The Contractor shall provide 3rd Level Support after the Warranty period if the Purchaser exercises the option to activate Work Package 8.

6.9.10. The Contractor furnished 2nd Level Support shall be provided at NCI Agency in Mons .

6.9.11. The Contractor furnished 3rd Level Support shall be provided offsite at the Contractor's premises;

6.9.12. The Contractor furnished 2nd and 3rd Level Support processes shall be planned, executed, and controlled according to ISO/IEC 20000 and ITILV3 or equivalent;

6.9.13. The Contractor furnished 2nd Level Support process shall create and deliver a Problem Analysis Report per identified Issue or set of Issues as the result of the Problem Management Process;

6.9.14. The Contractor furnished 2nd Level Support process shall create and deliver a Change Request as the result of the Problem Management Process work steps;

6.9.15. The Contractor furnished 2nd Level Support process shall create and deliver a monthly Support Report as the result of the Problem Management Process monitoring and controlling work steps;

6.9.16. The Contractor furnished 2nd Level Support process shall create and maintain descriptions of all solutions (Quick solution, Work around, Patch, Baseline Release) to known issues in a COTS software database ("Known Error Database"). The Known Error Database shall be established during the

Operational Baseline 1.0 testing. The Known Error Database shall link issue(s) to solution(s) and corresponding documentation and expert Contractor POC;

6.9.17. The Contractor furnished 3rd Level Support process shall create and deliver the Software patches as approved by the CCB in response to the 2nd Level recommendation. Before FSA this will be subject to Purchaser Contracting Authority approval. After FSA this will only be done if the Purchaser decides to activate the extended Contractor Support.

6.10. System Support

6.10.1. Operating Documentation

6.10.1.1. The Contractor shall develop and maintain the NEDB-NG Users' Manual(s) based on the ABL and PBL and shall describe the complete system by the explanation of functional blocks and Configuration Items.

6.10.1.2. The Users' Manual(s) shall contain descriptions, with appropriate figures, of the user functional blocks that comprise the applicable major PBL/OBL components. The Users' Manual shall include, but not limited to, the following subject areas:

6.10.1.2.1. Preface, Purpose and Target audience;

6.10.1.2.2. General System Descriptions;

6.10.1.2.3. Installation and Commissioning Instructions;

6.10.1.2.4. Standard Operating Instructions (Preparation, Installation, Starting, Stopping, Monitoring, De-installation);

6.10.1.2.5. Target audience specific Operating Instructions (Administrator, User, Trainer);

6.10.2. Maintenance Documentation

6.10.2.1. The Contractor shall develop and maintain the NEDB-NG Maintenance Manual(s) and Tools & Equipment List(s);

6.10.2.2. The Contractor shall develop and maintain the PBL and OBL Maintenance Manual(s) based on the ABL and PBL;

6.10.2.3. The contractor shall use the RAM and Task analysis as imput for developing the technical manuals;

6.10.2.4. The Maintenance Manual(s) shall define the in-depth, step by step procedure how to perform the 1st, 2nd and 3rd Level Maintenance tasks as defined in the Maintenance Concept;

6.10.2.5. For all COTS Configuration Items of the PBL, the Maintenance Manual(s) shall take maximum advantage of the existing COTS Vendor Original Equipment Manufacturer (OEM) Manuals and documentation, supplemented with the PBL adaptations, and additions;

6.10.2.6. The PBL and OBL Maintenance Manual(s) shall define the required Maintenance Tools and Equipment;

6.10.2.7. The Contractor shall develop and maintain the PBL and OBL Maintenance Tools and Equipment List;

6.10.2.8. The PBL and OBL Maintenance Tools and Equipment List shall define the required equipment to the same level of detail as the Material Data Sheet (MDS).

6.10.2.9. The Contractor shall create a monthly Maintenance Report, that summarises all Contractor performed Maintenance tasks and deliverables and introduces suggestions for Maintenance performance improvements.

6.11. Warranty

6.11.1. The Contractor shall provide Warranty for all Hardware (optional) and Software Configuration Items of the OBL procured under this Contract.

6.11.2. The period of Warranty for the Software Configuration Items shall be one (1) year, starting at FSA.

6.11.3. The OBL Warranty Support process shall use the Baseline Warranty Process as defined in SOW to solve Warranty cases.

6.11.4. As part of the Problem Management process the Contractor shall identify and verify the Warranty case, propose options for restoring the OBL service(s), and trigger 3rd Level Support or 3rd Level Maintenance actions.

6.11.5. The Contractor shall repair/ replace/ fix all CI's received through the Support and/or Maintenance process as per their internal procedures with the highest priority allocated and shall be responsible to return the CI to the NATO facility.

6.11.6. The Transportation of equipment under Warranty from and to a NATO facility shall be the Contractor’s responsibility.

6.11.7. If the Contractor becomes aware at any time before acceptance by the Purchaser that a defect exists in any OBL Hardware (optional) and Software CI, the Contractor shall coordinate with the Purchaser and promptly correct the defect.

6.11.8. The Contractor shall warrant that any developed OBL Software CI(s) shall perform according to the ABL and that any defects discovered shall be corrected.

6.11.9. The Contractor shall be responsible for updating and maintaining the OBL throughout the Warranty period.

6.11.10. The Contractor shall be responsible for the provision of any alternative or superseding items, should the original part be no longer available ensuring ABL and OBL compliance.

6.11.11. During the warranty period the Contractor shall be responsible to implement all COTS hardware (optional) and/or software upgrades that are covered in the warranty (e.g. it would exclude major version changes for the COTS).

6.11.12. The availability of COTS hardware (optional) and/or software upgrades shall be made known to the Purchaser and, if proposed for introduction by the Contractor for whatever reason, including any corrective action for an identified fault, shall always be subject to Purchaser approval.

6.11.13. The Contractor shall submit the OBL Warranty Report that documents the identified Warranty cases, affected CI's, taken activities, cost and schedule.

6.12. Software Installation and Accreditation

6.12.1. The Contractor provided software shall operate within the environment of NATO Operational Baseline (defining software deployed at NATO computers) as listed in the Approved Fielded Product List (AFPL).

6.12.2. The Purchaser will provide the Contractor the images of the latest version of the supported SW configuration (Operational Baseline) for servers and clients as defined in the AFPL – maintained by the Purchaser.

6.12.3. The Purchaser will provide the Contractor with the licenses for the activation of the COTS SW indicated in the SW that is covered by Enterprise Agreements the Purchaser has signed, unless otherwise specified (e.g., the Contractor purchases the SW licenses on behalf of the Purchaser).

6.12.4. The Contractor shall install the NEDB-NG software to Purchaser-designated facilities in close coordination with the Purchaser’s staff.

6.12.5. The Contractor shall develop and provide system documentation as required by the IT&V and NCI Agency CCB in order to support the security penetration test and screening activities (to be conducted using the NCI Agency IT&V testbed) and to include NEDB-NG in the AFPL. The list of documents required to conduct such activities will be provided as part of PFE on contract award.

7. Labour Categories

7.1. General

7.1.1. This section outlines minimum educational and experience qualifications for Contractor staff supporting Work Packages under this Contract. The labour categories identified shall be available to support all Task Areas required.

7.1.2. Substitution of experience or education is allowed as outlined in Table 24.

Education	Equivalent Education + Experience	Equivalent Experience
Associates degree		4 years of relevant experiance
Bachelors degree	Associates + 2 years of relevant experience	6 years of relevant experience
Masters degree	Bachelors + 4 years of experience	8 years of relevant experience

Table 24 – Experience/Education Substitution

7.2. Project Management

7.2.1. Project Manager

7.2.1.1. Responsible for project management, performance and completion of tasks and delivery orders.

7.2.1.2. Establishes and monitors project plans and schedules and has full authority to allocate resources to insure that the established and agreed upon plans and schedules are met.

7.2.1.3. Manages costs, technical work, project risks, quality, and corporate performance.

7.2.1.4. Manages the development of designs and prototypes, test and acceptance criteria, and implementation plans.

7.2.1.5. Establishes and maintains contact with Purchaser, Sub-contractors, and project team members.

7.2.1.6. Provides administrative oversight, handles contractual matters and serves as a liaison between the Purchaser and corporate management.

7.2.1.7. Ensures that all activities conform to the terms and conditions of the Contract and Work Package procedures.

7.2.1.8. Has a Masters degree in management, engineering, or business administration. Formal certification through Project Management Institute or equivalent source.

7.2.1.9. Has at least seven years experience in information systems design and project management. At least two years as the project manager for an effort of similar scope and complexity, including the application of a formal project management methodology such as PRINCE2.

7.2.2. Project Control Analyst

7.2.2.1. Establishes and maintains project schedule and cost baseline and analyses risks and potential impacts. Prepares project highlight reports.

7.2.2.2. Hase a Bachelors degree and at least three years experience in project scheduling, project control, or project monitoring and reporting.

7.2.3. Webmaster

7.2.3.1. Provides website construction and administration, develops connections between databases and web based front ends.

7.2.3.2. Generates technical reports and related documentation as required. Provides expertise in the development and maintenance of web sites.

7.2.3.3. Provides training on the uploading of documents, creating pages, links and other web functions.

7.2.3.4. Maintains access rights to pages on web. Maintains reports and statistics on utilisation of the Project Website.

7.2.3.5. Has associates degree or two years of technical training and at least one year experience in website support and website construction.

7.2.4. Contract Security Specialist

7.3. Engineering and Technical

7.3.1. Senior Engineer

7.3.1.1. Performs complex engineering tasks and multiple tasks simultaneously.

7.3.1.2. Assists with or plans major research and engineering tasks or programs of high complexity.

7.3.1.3. Directs and co-ordinates all activities necessary to complete a major, complex engineering program or multiple smaller tasks or programs.

7.3.1.4. Performs advanced engineering research, hardware or software development.

7.3.1.5. Has a Masters degree in engineering and at least seven years experience in engineering positions associated with the review, design, development, evaluation, planning and operation of electrical or electronic components, subsystems, or systems for government or commercial use. Member of recognised professional body.

7.3.2. Intermediate Engineer

7.3.2.1. Performs engineering tasks and additional duties as assigned.

7.3.2.2. Assists higher level engineers with larger tasks.

7.3.2.3. Manages or directs multiple engineering tasks, directing research and development activities as required.

7.3.2.4. Performs advanced engineering applications programming and analysis for systems/equipment assigned.

7.3.2.5. Has a Bachelors degree in engineering and at least three years experience in engineering functions associated with the review, design, development, evaluation, planning and operation of electrical or electronic components, subsystems, or systems for government or commercial use.

7.3.3. Junior Engineer

7.3.3.1. Performs engineering tasks under the direction of higher level engineers.

7.3.3.2. Performs independent research, conducts studies and analysis, and participates in the design and development of complex systems.

7.3.3.3. Has a Bachelors degree in engineering and at least one year experience in engineering functions associated with the review, design, development, evaluation, planning and operation of electrical or electronic components, subsystems, or systems for government or commercial use.

7.3.4. Senior Systems Engineer

7.3.4.1. Plans and co-ordinates project management and engineering.

7.3.4.2. Provides comprehensive definition of all aspects of system development from analysis of mission needs to verification of system performance.

7.3.4.3. Competent in technical disciplines as applied to government and commercial information and communications systems.

7.3.4.4. Prepares tradeoff studies and evaluations for vendor equipment.

7.3.4.5. Recommends design hanges/enhancements for improved system performance.

7.3.4.6. Supervises the work of a design, integration, test, and implementation team.

7.3.4.7. Has a Masters degree in engineering or computer science and at least seven years in system design and integration. At least five years in the design, integration, or implementation of logistics systems.

7.3.5. Intermediate Systems Engineer

7.3.5.1. Performs system engineering assignments in support of the analysis of complex system design, formulating requirements, developing alternative approaches, conduct of studies, and application of standards.

7.3.5.2. May function as a member of an engineering team assigned responsibilities for specific task areas.

7.3.5.3. Has a Bachelors degree in engineering or computer science and at least three years experience in system design and integration.

7.3.6. Junior Systems Engineer

7.3.6.1. Conducts research and application of system design principles for the design, development, implementation, or support as a member of assigned task staffing.

7.3.6.2. Develops alternative solutions, concepts, or processes through research into assigned systems and components.

7.3.6.3. Has a Bachelors degree in engineering or computer science and at least one year experience in system design and integration.

7.3.7. Senior Communications Engineer

7.3.7.1. Performs communications system implementation planning, engineering design for integration with processing systems, specification development, standards, interface design, testing, and the conduct of transmission and traffic studies.

7.3.7.2. Has a Masters degree in engineering and at least seven years experience in the engineering of communications systems via all transmission media.

7.3.8. Intermediate Communications Engineer

7.3.8.1. Prepares communications systems designs and technical documentation, and other design criteria. Implements COTS and emerging communications systems and develops technical plans, documentation, and support.

7.3.8.2. Has a Bachelors degree in engineering and at least three years experience in the engineering of communications systems via all transmission media.

7.3.9. Junior Communications Engineer

7.3.9.1. Conducts engineering analysis, develops technical documentation, investigate communications requirements, formulates network interfaces, and assists in project/program execution.

7.3.9.2. Has a Bachelors degree in engineering and at least one year experience in the engineering of complex communications systems via all transmission media.

7.3.10. Senior Network Engineer

7.3.10.1. Designs network topologies and architectures. Determines applicable hardware, software, and connectivity solutions.

7.3.10.2. Supports implementation through configuration set-up, testing, and training of users.

7.3.10.3. Has a Masters degree in engineering and completion of a formal network certification program.

7.3.10.4. Has at least five years experience in network systems. At least three years experience with TCP/IP wide area networks.

7.3.11. Intermediate Network Engineer

7.3.11.1. Develops detailed network interface and configuration data. Surveys and evaluates applicable products.

7.3.11.2. Prepares network diagrams. Provides guidance for system implementation and support.

7.3.11.3. Has a Bachelors degree in engineering and at least five years experience in network systems. At least three years experience with TCP/IP wide area networks.

7.3.12. Junior Network Engineer

7.3.12.1. Develops network interface and configuration data for system components. Surveys and evaluates network products.

7.3.12.2. Prepares network diagrams. Prepares routing tables and installation and support documentation.

7.3.12.3. Has a Bachelors degree in engineering and at least one year experience in the engineering of complex communications systems via all transmission media.

7.3.13. Systems Integration Analyst

7.3.13.1. Develops and implements solutions using the optimal technology, platform, and interfaces Researches available tools and technologies to determine alternate technology solutions.

7.3.13.2. Researches, implements, and supports multiple computing platforms, operating systems, processing environments, and telecommunications technologies.

7.3.13.3. May conduct cost/benefit or feasibility analyses; perform capacity analyses and planning.

7.3.13.4. Has a Bachelors degree in engineering or computer science and at least seven years experience in the integration and implementation of COTS-based information systems.

7.3.14. Senior Software Programmer

7.3.14.1. Performs complex program development using standard and specialised languages to create special purpose software, modify existing programs, and enhance system efficiency and integrity.

7.3.14.2. Translates detailed designs into software, tests, debugs, and refines software packages.

7.3.14.3. Manages software development teams in modular development of complex applications.

7.3.14.4. Provides technical direction to assigned programmers.

7.3.14.5. Has a Bachelors degree in engineering or computer science and at least seven years experience in the design, programming, and testing of applications software.

7.3.15. Intermediate Software Programmer

7.3.15.1. Analyses systems requirements and design specifications to develop block diagrams and logic flow charts.

7.3.15.2. Translates detailed designs into computer software for specific applications. Prepares documentation, including program and user documentation.

7.3.15.3. Has a Bachelors degree in engineering or computer science and at least three years in the design, programming, and testing of applications software

7.3.16. Junior Software Programmer

7.3.16.1. Performs programming tasks based upon specifications and flow diagrams. Translates concepts into program modules for testing, debugging, refinement, and integration with other modules.

7.3.16.2. Prepares draft documentation including program and user documentation.

7.3.16.3. Functions as a member of a software development team under the guidance of more experienced programmers.

7.3.16.4. Has a Bachelors degree in engineering or computer science and at least one year in the design, programming, and testing of applications software.

7.3.17. System Support Engineer

7.3.17.1. Designs and integrates system support applications and protocols to meet system requirements.

7.3.17.2. Analyses architectural options for performance and manageability.

7.3.17.3. Analyses and designs implementations to meet specialised message formats or interfaces.

7.3.17.4. Has a Bachelors degree in engineering and at least seven years experience in the design, integration, and implementation of information systems. At least three years experience with SNMP and system support applications.

7.3.18. Senior Test Engineer

7.3.18.1. Directs test planning, design and tools selection.

7.3.18.2. Establishes guidelines for test procedures and reports.

7.3.18.3. Co-ordinates with Purchaser on test support requirements and manages Contractor test resources.

7.3.18.4. Has a Bachelors degree and at least seven years experience in the design and execution of information systems tests.

7.3.19. Intermediate Test Engineer

7.3.19.1. Designs and documents unit and application test plans.

7.3.19.2. Transforms test plans into test scripts and executes those scripts.

7.3.19.3. Supervises individual tests and prepares test reports.

7.3.19.4. Has a Bachelors degree in engineering and at least three years experience in the design and execution of information systems tests.

7.3.20. Junior Test Engineer

7.3.20.1. Performs testing activities under supervision of more experienced test personnel.

7.3.20.2. Executes defined test cases and procedures.

7.3.20.3. Collects and analyses test data.

7.3.20.4. Prepares test reports.

7.3.20.5. Has a Bachelors degree in engineering and at least one year experience in the design and execution of information systems tests.

7.3.21. Test Technician

7.3.21.1. Provides installation and administration support to information system testing.

7.3.21.2. Constructs and tests prototype equipment for electrical systems and components, consistent with engineering and other specifications.

7.3.21.3. Executes tests and collects test data.

7.3.21.4. Assists in preparing test reports.

7.3.21.5. Has Associates degree or two years of technical training and at least two years experience in the configuration and administration of information systems or test and measurement systems.

7.3.22. Information Systems Security Engineer

7.3.22.1. Analyses and develops network systems and information security practices to include: operating systems, applications, TCP/IP, security architecture, multi-level security, intrusion detection, virus detection and control, PKI, vulnerability assessment.

7.3.22.2. Documents findings and recommend changes in procedures, configuration, or design.

7.3.22.3. Has a Bachelors degree and at least three years experience in information systems security. At least five years in information systems integration, implementation, or operation.

7.3.23. Information Systems Security Specialist

7.3.23.1. Provides support in implementing procedures and practices prescribed for safeguarding and control of an automated information system and the processing of classified information.

7.3.23.2. Has a Bachelors degree and at least three years experience in information systems security. At least five years in information systems integration, implementation, or operation.

7.3.24. Field Engineer

7.3.24.1. Conducts site surveys, prepares implementation plans, prepares implementation procedures, supervises installation and activation, reports on installation status, manages repair and modifications to systems/equipment, performs field maintenance, and performs system configuration changes based upon approved specifications.

7.3.24.2. Has a Bachelors degree and at least seven years experience in the installation and maintenance of network and information systems.

7.3.25. Senior Technician

7.3.25.1. Supervises technicians in the troubleshooting, repair, installation, training, integration, and upgrade of systems and equipment.

7.3.25.2. Works closely with assigned engineers and systems personnel to support implementation and activation efforts.

7.3.25.3. Has Associates degree and at least seven years experience in the installation and maintenance of network and information systems.

7.3.26. Intermediate Technician

7.3.26.1. Performs troubleshooting, repair, refurbishment, and installation of systems and equipment.

7.3.26.2. Performs factory or field testing of systems, development of maintenance or repair procedures, and supports installation teams in specific areas of expertise.

7.3.26.3. Has Associates degree and at least three years experience in the installation and maintenance of network and information systems.

7.3.27. Junior Technician

7.3.27.1. Performs troubleshooting, repair, and installation functions as assigned.

7.3.27.2. May be assigned as technical support technician for specific systems or hardware.

7.3.27.3. Performs factory or field testing and supports installation teams as assigned.

7.3.27.4. Has Secondary school graduate with one year of technical training and at least two years installing and maintaining network and information systems.

7.3.28. System Management Specialist

7.3.28.1. Analyses, develops, and maintains operational system configuration parameters.

7.3.28.2. Establishes and implements system policy, procedures and standards, and ensures their conformance with system requirements.

7.3.28.3. Ensures that security procedures are established and implemented. Provides technical assistance to operational, logistics, and system engineering staff.

7.3.28.4. Has a Bachelors degree and completion of a formal system administration or network management certification course.

7.3.28.5. Has at least three years in the administration of distributed information systems.

7.4. Implementation Support

7.4.1. Technical Writer

7.4.1.1. Develops, writes, and edits materials, briefs, proposals, instruction books, and related technical and administrative publications concerned with work methods and procedures for installation, operations and enhancement of equipment.

7.4.1.2. Organises material and compiles writing assignments for clarity, conciseness, style, and terminology.

7.4.1.3. Prepares and edits documentation incorporating information provided by users, and technical and operations staff.

7.4.1.4. Possesses a substantial knowledge of the capabilities of computer systems. Capable of writing, editing, and generating graphic presentations.

7.4.1.5. Has a Bachelors degree and at least three years as a technical writer.

7.4.2. Data Control Specialist

7.4.2.1. Performs assigned portions of managing the data input into complex information systems.

7.4.2.2. Analyses and administers data for both the developing team and the customer.

7.4.2.3. Handles daily administrative tasks, produces and edits technical reports based on data system processing, monitors use of data and performs updates as required.

7.4.2.4. Participates in all phases of system development with emphasis on the data collection, input, documentation, and acceptance phases.

7.4.2.5. Designs and prepares technical reports and related documentation, and makes charts and graphs to record results.

7.4.2.6. Has Associates degree and at least three years experience in administration of configuration management or technical documentation.

7.4.3. Quality Assurance Manager

7.4.3.1. Establishes and maintains process for evaluating software, hardware, and associated documentation.

7.4.3.2. Determines the resources required for quality control.

7.4.3.3. Maintains the level of quality throughout the system life cycle.

7.4.3.4. Develops project quality assurance plans.

7.4.3.5. Conducts formal and informal reviews and audits at predetermined points throughout the system life cycle.

7.4.3.6. Has a Bachelors degree and at least seven years of experience working with quality control methods and tools. At least four years supporting system development and test projects.

7.4.4. Quality Assurance Specialist

7.4.4.1. Develops and implements quality standards.

7.4.4.2. Reviews hardware, software, and documentation.

7.4.4.3. Participates in formal and informal reviews to determine quality.

7.4.4.4. Participates in the development of system quality assurance plans.

7.4.4.5. Examines and evaluates design, integration, and test processes and recommends enhancements and modifications.

7.4.4.6. Has a Bachelors degree and at least four years of experience working with quality control methods and tools.

7.5. Training Support

7.5.1. Instructional Systems Designer

7.5.1.1. Conducts the research, necessary to identify training needs based on performance objectives and existing skill sets; prepares training strategies and delivery methodology analyses; and prepares cost/benefit analyses for training facilities and deliverables.

7.5.1.2. Develops training delivery plan, instructional guidelines, and performance standards and assessment mechanisms.

7.5.1.3. Plans and directs the work of training material developers and coordinates activities with system development staff.

7.5.1.4. Supervises the implementation and adaptation of training products to customer requirements.

7.5.1.5. Has a Bachelors degree and at least three years experience in the design and development of training for information systems using an Instructional Systems Design approach such as the Systems Approach to Training, Performance- Based Training, Analysis, Design, Development, Implementation, and Evaluation (ADDIE), or Criterion Referenced Instruction.

7.5.2. Senior Training Materials Developer

7.5.2.1. Conducts the research necessary to develop and revise training courses and prepares training plans.

7.5.2.2. Develops instructor (course outline, background material, and training aids) and student materials (course manuals, workbooks, handouts, completion certificates, and course feedback forms).

7.5.2.3. Trains personnel by conducting formal classroom courses, workshops, seminars, and/or computer based/computer-aided training.

7.5.2.4. Provides daily supervision and direction to staff.

7.5.2.5. Has a Bachelors degree and at least five years experience in the preparation of technical training, including Computer Based Training CBT materials.

7.5.3. Training Materials Developer

7.5.3.1. Conducts the research necessary to develop and revise training.

7.5.3.2. Develops training materials (course outline, manuals, workbooks, handouts, completion certificates, and course feedback forms.

7.5.3.3. Has Associated degree and at least three years experience in the preparation of technical training materials.

7.5.4. CBT Developer

7.5.4.1. Uses CBT tool to design and implement course flowchart, text, animation, voice, and graphic displays.

7.5.4.2. Has a Bachelors degree and at least three years in the preparation of CBT courses.

7.5.5. Senior Instructor

7.5.5.1. Supervises trainers who conduct technical training classes.

7.5.5.2. Conducts training classes.

7.5.5.3. Works closely with Purchaser personnel to determine training and scheduling requirements.

7.5.5.4. Develops and maintains training materials.

7.5.5.5. Reviews and provides inputs for technical documentation.

7.5.5.6. Has a Bachelors degree and at least four years experience in systems administration or operation and at least four years as technical training instructor.

7.5.6. Junior Instructor

7.5.6.1. Conducts technical training classes.

7.5.6.2. Prepares and updates training documentation.

7.5.6.3. Has a Bachelor degree and at least four years of experience in systems administration or operation and at least two years as technical training instructor.

7.6. Operational Support

7.6.1. System Administrator

7.6.1.1. Administers systems operations and configuration.

7.6.1.2. Maintains user accounts and profiles.

7.6.1.3. Performs system backup and restoration procedures.

7.6.1.4. Troubleshoots operational problems.

7.6.1.5. Co-ordinates system configuration and performance issues with central network support staff and Purchaser site personnel.

7.6.1.6. Has Associates degree or two years of technical training and At least one year in systems administration of Windows 2003/2008 systems. At least one year in the administration and operation of X.400 systems.

7.6.2. Network Manager

7.6.2.1. Oversees administration and operation of network and service management applications.

7.6.2.2. Develops and implements operating procedures.

7.6.2.3. Administers upgrades to system support and network management components.

7.6.2.4. Collects operational performance data and performs performance analysis.

7.6.2.5. Has Associates degree and at least two years of experience in administration and implementation of SNMP or other system support systems.

7.6.3. Database Administrator

7.6.3.1. Manages network-wide configuration databases.

7.6.3.2. Develops and implements data synchronisation procedures and resolves database discrepancies.

7.6.3.3. Maintains and publishes network configuration tables and indices.

7.6.3.4. Designs and implements queries and other utilities.

7.6.3.5. Has Associates degree and at least two years of experience in database administration.

7.6.4. Operational Support Manager

7.6.4.1. Organises, directs and manages operational support activities.

7.6.4.2. Analyses system performance data and prepares reports and assessments.

7.6.4.3. Meets with Purchaser personnel to co-ordinate support issues and co-ordinates with system implementation personnel on activation and cut-over.

7.6.4.4. Ensures conformance with Work Package requirements.

7.6.4.5. Has a Bachelors degree and at least five years of experience in the administration and operation of a distributed information system.

7.7. ILS Support

7.7.1. Senior ILS Engineer

7.7.1.1. Provides subject matter expertise in the areas of Service Design, Service Transition, and Service Operation as introduced by the Information Technology Infrastructure Library (ITIL) or equivalent best practices and Software Life Cycle Support and Maintenance.

7.7.1.2. Has a Bachelor degree and ITIL Practitioner (ITIL V2) or Intermediate (ITIL V3) certification and at least seven years of experience in the ILS area in NATO or a NATO nation. At least three years in the development of logistics doctrine; operational concepts, support concepts, and maintenance concepts; ILS requirements; tactics, techniques and procedures; standard operating procedures and other support documentation.

7.7.2. Intermediate ILS Specialist

7.7.2.1. Provides profound knowledge in the area of Service Operation as introduced by the Information Technology Infrastructure Library (ITIL) or equivalent best practices and Software Life Cycle Support and Maintenance.

7.7.2.2. Has a Bachelor degree and ITIL Foundation certification and at least four years of experience in the ILS area in NATO or a NATO nation. At least one year in the development of operational concepts, support concepts, and maintenance concepts; ILS requirements; techniques and procedures; standard operating procedures and other support documentation.

7.7.3. Senior Configuration Manager

7.7.3.1. Establishes and maintains a process for tracking the life cycle development of system design, integration, test, training, and support efforts.

7.7.3.2. Maintains continuity of products while ensuring conformity to Purchaser requirements and commercial standards.

7.7.3.3. Establishes configuration control forms and database.

7.7.3.4. Has a Bachelors degree and at least five years experience in specifying configuration management requirements, standards, and evaluation criteria in acquisition documents, and in performing configuration identification, control, status accounting, and audits. At least three years in computer and

communication systems development, including physical and functional audits and software evaluation, testing and integration. At least two years experience with application of configuration management tools.

7.7.4. Intermediate Configuration Manager

7.7.4.1. Maintains a process for tracking the life cycle development of system design, integration, test, training, and support efforts.

7.7.4.2. Maintains continuity of products while ensuring conformity to Purchaser requirements and commercial standards.

7.7.4.3. Maintains configuration control records and databases.

7.7.4.4. Has Associates degree or two years of technical training and at least three years experience in Technical system configuration management. At least two years in computer and communication systems development, including physical and functional audits and software evaluation, testing and integration.

7.7.5. Junior Configuration Manager

7.7.5.1. Prepares and co-ordinates change requests, configuration items, and system baselines.

7.7.5.2. Maintains configuration control records and databases.

7.7.5.3. Has Associates degree or one year of technical training and at least one year of experience in technical system configuration or document management.

7.7.6. Logistics Analyst

7.7.6.1. Creates and helps execute plans for the integrated logistics support (ILS) of complex systems.

7.7.6.2. Analyses adequacy and effectiveness of current and proposed logistics support provisions.

7.7.6.3. Supervises the efforts of other logistics personnel in the execution of assigned tasks.

7.7.6.4. Has a Bachelors degree and at least three years of experience in ILS planning and analysis.

7.7.7. Inventory Specialist

7.7.7.1. Creates and maintains an inventory control system.

7.7.7.2. Tracks materials, co-ordinates shipping and receiving, and supervises packing operations.

7.7.7.3. Has Associates degree and at least three years experience in shipping, receiving, and inventory control.

7.7.8. Shipping and Receiving Clerk

7.7.8.1. Co-ordinates the shipping and receiving of materials.

7.7.8.2. Tracks property using automated equipment. Performs and records materials inventory checks.

7.7.8.3. Has a Secondary school graduate and at least three years experience in shipping and receiving.

8. Contract Documentation Requirements

8.1. General

8.1.1. All documentation provided to the Purchaser shall be written in English with spelling and usage based on the Concise Oxford English Dictionary, 11th edition.

8.1.2. The convention to be used for numbers appearing in textual documents is for a comma to be the thousands separator and a period to be the decimal separator (e.g., 1,365,276.24).

8.1.3. The convention to be used for dates appearing in free text is day-month-year.

8.1.4. The convention to be used for dates appearing in free text (e.g., quoting dates of meetings) is day-month-year and not month-day-year.

8.1.5. All documentation deliverables must be “stand-alone” with no dependence on other documentation or applications in the Contractor’s environment for its comprehension. Likewise if there are hyperlinks to other areas of the Contractor environment, they must be fully available.

8.1.6. Documentation shall not be marked with corporate logos or contain warnings limiting the rights to use or reproduction.

8.1.7. All delivered documentation may be subject to review by the NATO IV&V Contractor.

8.1.8. The security classification of the documentation shall follow agreed NATO security guidelines. Documentation developed under this project shall have its security classification shown on each page, top and bottom. It is expected that none of the documentation requires a higher classification than NATO Unclassified.

8.2. Reports

8.2.1. For all reports delivered under this Contract, the Contractor shall ensure the following standards are met:

8.2.1.1. The report shall be candid, forthright and complete.

8.2.1.2. The report shall contain only material that can be supported by evidence and confirmed by independent analysis.

8.2.1.3. The report shall provide evidence to support or justify the conclusions reached.

8.2.1.4. The report shall be concise. If necessary, supporting data should be placed in appendices or referenced as backup material.

8.2.1.5. The report shall include an Executive Summary of not more than one page in length.

8.2.1.6. The report shall use charts, graphs, matrices, tables, and other illustrative techniques to present data in an easily-understood form. Each illustration should be accompanied with a narrative showing how the data displayed is relevant to the process improvement.

8.2.2. Unless otherwise directed by the Purchaser, the Contractor shall furnish requested documentation as follows:

8.2.2.1. All contractual documentation (e.g., change proposals, invoices, etc.) shall be delivered in paper and electronic format.

8.2.2.2. All project management documentation (e.g., plans, schedules, reports, etc.) shall be delivered as electronic copies in MS Office format (MS Office 2010 or higher).

8.2.2.3. The rest of the deliverables shall be furnished as an electronic copy in a format which is best suited for review and maintenance by the Purchaser (e.g., Project Master Schedule in MS Project format, Project Highlight Reports in MS Word). In general the following guidelines shall be used: Microsoft Word shall be used for generating text document; Microsoft Excel shall be used for tabular or matrix data; Microsoft Visio shall be used for drawings; Microsoft Project shall be used for schedule; and Microsoft PowerPoint shall be used for briefings. The Contractor shall use MS Office 2010 or higher version. The rest of deliverables shall be furnished as electronic copy of the agreed tools/media used.

8.2.3. Documentation shall be distributed as follows:

8.2.3.1. One paper and electronic copy to the Purchaser’s Project Manager.

8.2.3.2. One paper and electronic copy to the identified IV&V Contractor.

8.2.3.3. An electronic copy to the Project Website.

8.2.3.4. Each document shall contain the following information for identification:

Serial	Requirement
1	Version of the document and version history

2	Due date
3	Delivery date
4	CLIN number
5	Status (e.g., accepted/approved/draft…)

Table 25 - Content for all deliverable documents

8.2.4. The Contractor shall submit all documentation for Purchaser review as described below. At each review cycle, the Purchaser will state if the document is likely to be accepted in its Final version.

8.2.5. If the review is organized within iterative development, the Contractor shall provide documents for the review at least two (2) weeks before the review date, and four (4) weeks otherwise, unless specified differently in the Work Package or Schedule of Supplies and Services.

8.2.6. Attached to the documents to be reviewed, the Contractor shall send the invitation, including:

Serial	Requirement
1	Agenda
2	List of participants
3	Date, hour, location of the review

Table 26 – Format for Invitations to Reviews

8.2.7. During the development the Contractor may be required to provide subsequent Draft versions of the documents (starting with version 0.1) for the Purchaser comments, as defined in the section describing the iterative development process.

8.2.8. The Contractor shall provide a first version submitted to Purchaser's Review (identified as version 0.9) of each deliverable by the date specified in the Schedule of Supplies and Services.

8.2.9. The Purchaser will provide comments, corrections, and suggested changes to the Contractor within two (2) weeks of receipt for Work Package 3 - System Engineering deliverables and four (4) weeks otherwise.

8.2.10. This version shall be substantially complete and correct, and the delivery dates specified in the Schedule of Supplies and Services assume this.

8.2.11. The Purchaser reserves the right to return without review a document that has significant deficiencies.

8.2.12. The Contractor shall not rely on the Purchaser review to fill in deficiencies or obtain missing Purchaser information.

8.2.13. The Contractor shall provide the Final version (version 1.0) of the document, for approval, within two (2) weeks of receipt of the Purchaser's comments.

8.2.14. Until FSA the Contractor shall remain responsible for updating all the deliverable documents to reflect necessary changes.

8.3. Contract Documentation Requirements List

8.3.1. The Contract Documentation Requirements List (CDRL) identifies the documents required to be delivered under this Contract and the applicable quality standards by which they will be reviewed for acceptance.

8.3.2. The CDRL for this Contract is provided in Table 27. For each item, the table identifies the:

8.3.2.1. Cross-reference to the SOW paragraph requiring the document.

8.3.2.2. Document title.

8.3.2.3. Document acceptance requirements, where:

8.3.2.4. “A” means the Purchaser must review and approve the initial submission and subsequent changes.

8.3.2.5. “I” means the item is provided to the Purchaser for information purposes

8.3.2.6. only and the Purchaser will only request changes if it finds errors or omissions.

8.3.2.7. Applicable quality standard against which the document will be reviewed for acceptance. Where this SOW is the quality standard “SOW”, is indicated.

ANNEX A. : NEDB-NG System Requirements Specification(SRS)
ANNEX A1 : NEDB-NG List of Abbreviations
ANNEX A2 : NEDB-NG Information Elements
ANNEX A3 : NEDB-NG Intra-Pulse Modulation Examples
ANNEX A4 : NEDB-NG User Requirements v12
ANNEX A5 : NEDB-NG Bi-SC AIS Interface Requirements
ANNEX B. : NEDB-NG Work Packages

SoW Ref.	Title	Formally reviewed at								Quality Standard
		PMR	SRR	PDR	CDR	TRR	TMR	DRR	FSA	
Project Management										
3.16	Project Website and Collaborative Working Environment	X								SoW
3.5	Project Management Plan (PMP)	X								SoW
5.1.6	Configuration Management Plan (CMP)	X								ACMP-1 Ed. 2 (2007) NATO Requirements for the Preparation of Configuration Management Plans
3.9	Quality Assurance Plan (QAP)	X								AQAP-2110
3.5	Project Work Breakdown Structure (PBS)	X								Managing Successful Projects with PRINCE 2, Second Edition
3.6	Project Master Schedule (PMS)	X								SoW
4.3	System Development Plan (SDP)	X								SoW
3.8.2	Risk Log	X								Managing Successful Projects with PRINCE 2, Second Edition
3.9.6	Quality Log	X								Managing Successful Projects with PRINCE 2, Second Edition
3.17.6	Issue Log	X								Managing Successful Projects with PRINCE 2, Second Edition
3.17.5	Project Highlight Report (PHR)									Managing Successful Projects with PRINCE 2, Second Edition
3.17	Meeting Minutes (MoM)									To be agreed between the Contractor and the Purchaser
System Development										
4.4.1.5	Requirements Management Database		X	X	X	X				SoW
4.5.6	Requirements Traceability Matrix (RTM)		X	X	X	X				SoW
4.1.3	System Design Specification (SDS)		X							ISO/IEC 15288:2008(E)
4.4.4	User Interface Specification		X	X	X					To be agreed between the Contractor and the Purchaser
4.5.3	System Architecture Description (SAD)			X	X					NATO Architecture Framework (NAF) Ver. 3.1
4.5.4	Software Design Specification (SWDS)			X	X					IEEE/EIA 12207.1
4.5.7	Interface Control Document (ICD)			X	X					SoW
4.7.10	Test Plan					X				SoW
4.8.8	FAT Test Procedures					X				SoW
4.8.8.4	FAT Test Report					X				SoW
System IV&V and Accreditation										

SoW	Title	Formally reviewed at								Quality Standard
4.4.3	System Interconnection Security Requirements Statement (SISRS)		X							
4.4.3	Security Risk Assessment (SRA)		X							SoW
4.4.3	System-Specific Security Requirements Statement (SSRS)		X							AC/35-D/1015-REV2, Guidelines for the Development of Security Requirements Statements
4.5.5	System Security Design Specification			X	X					
4.4.3	Security Test and Verification Plan (STVP)					X				AC/35-D/1015-REV3 Guidelines for the Development of Security Requirement Statements
4.4.3	Security Operating Procedures (SecOPs)					X				AC/35-D/1014-REV2, Guidelines for the structure of the content of Security Operating Procedures (SecOPs) for CIS.
4.7.12	SIT Test Procedures					X				SoW
4.7.13	SIT Test Reports									SoW
4.7.12	UAT Test Procedures					X				SoW
Site Survey and Site Activation										
4.8.2	System Implementation Plan (SIP)					X		X		SoW
4.8.4	Site Survey Questionnaire					X				
4.8.4	Site Survey Report							X		SoW
4.7.12	SAT Test Procedures							X		SoW
4.7.13	SAT Test Reports									SoW
4.8	Software Distribution List								X	
5.3	Configuration Management Database (CMDB)								X	
6.8	Material Data Sheet								X	
4.8	As Built Documentation								X	
4.8.8	Final System Acceptance Report								X	
Training Support										
6.7	Training Plan (TP)						X			SoW
6.7	Training Materials						X			SoW
6.7.5	CBT						X			SoW
System Support										
6.3	Maintenance Concept							X		SoW

SoW	Title	Formally reviewed at								Quality Standard
6.4	Support Concept							X		SoW
6.10	Operating & maintenanance documentation							X		SoW
3.12	Transition Plan							X		Sow
3.11	Integrated Logistics Support Plan (ILSP)							X		NCSA OSLA-14-02, Preparation of NATO CIS Integrated Logistics Support Plans (ILSP), 2nd Revision

Table 27 - Contract Documentation Requirements List

NATO Communications and Information Agency
Agence OTAN d'information et de communication

IFB-CO-14091-EWFS

PROVIDE FUNCTIONAL SERVICES FOR ELECTRONIC WARFARE – INCREMENT 1

NATO Emitter Database Next Generation (NEDB-NG)

BOOK II – PART IV – ANNEX A

SYSTEM REQUIREMENTS SPECIFICATION

DOCUMENT CONTROL PAGE

VERSION HISTORY

Version	Author	Date	Reason for Change	Superseded Document

TABLE OF CONTENTS

1 INTRODUCTION

1.1 Background

The NATO Capability Package CP9C0107, “Provide Functional Services For Electronic Warfare,” consists of several sub-projects including Project 0IS03083, which covers the first increment of CP9C0107 also referred to as the NATO Electronic Warfare Functional Services (EW FS).

The NATO Emitter Database (NEDB) currently exists as a MS Access database enabling NATO nations to share parametric data for radar and Electro-optical/Infrared (EO/IR) emitters, with associated platform, antennas and weapons. The NEDB enables Electronic Warfare (EW) coordination during exercises, training and operations.

The objective of the increment 1 of CP9C0107 is to replace the current NEDB with a new capability referred to as the NEDB Next Generation (NEDB-NG).

It is envisioned that this capability will be used by NATO Nations, the NATO Joint Electronic Warfare Core Staff (JEWCS) and EW communities within NATO.

1.2 Scope

This System Requirements Specification document specifies requirements for the NEDB-NG system to be implemented by the Contractor, and is a part of the Statement of Work (SoW), which also covers the scope of the procurement contract. NEDB-NG will provide an enhanced database capability comprising current/future NEDB (radar, platform and location information), current/future NEDB-EO (electro-optical emitters, platform and location information), current/future communication systems (communication emitter, platform and location information), as well as support to tasking, an exchange mechanism, and data quality control features. Enhance command and control support to EW operations in NATO is outside the scope of the current project and will be addressed through future increments of CP9C0107.

In the NEDB-NG Project Working Group (PWG) the users of NEDB-NG have discussed their requirements and documented the expected outcome of the project. The user requirements document developed by the NEDB-NG PWG has been the main source for deriving requirements in the SRS document. The user requirements document is attached as an Annex to this System Requirements Specification document.

The System Requirements Specification has the following annexes, which are an integral part of the document:

- Annex A1 – Abbreviations
- Annex A2 - NEDB-NG Information Elements
- Annex A3 – NEDB-NG Signal Modulation Examples
- Annex A4 – NEDB-NG User Requirements
- Annex A5 – NATO Bi-SC AIS Interface Requirements

1.3 References

1.3.1 NATO Documents

A. AAP-6, 2014, NATO Glossary of Terms and Definitions (English And French), NATO UNCLASSIFIED

B. AAP-15, 2014, NATO Glossary of Abbreviations used in NATO Documents and Publications), NATO UNCLASSIFIED

C. STANAG 6009, Edition 3, NATO Emitter Database (NEDB), NATO UNCLASSIFIED

D. AC/35-D/1021 Rev3, Guidelines for the Security Approval or Accreditation of CIS, NATO UNCLASSIFIED

E. AC/322-D(2005)0037, Bi-SC AIS Reference Architecture, BiSCAIS BAIP version 7

F. AC/322-D/0030-Rev5, INFOSEC Technical and Implementation Directive for the Interconnection of CIS, NATO RESTRICTED

G. AC/322-D(2014)0010, NATO Core Metadata Specification (NCMS), NATO UNCLASSIFIED

H. Allied Command Operations Comprehensive Operations Planning Directive COPD Interim V2.0, 4 October 2013, NATO UNCLASSIFIED

I. Secure AIS Community Security Requirement Statement (CSRS) Version 2.0, 10 December 2013

J. NEDB Manual Part 1 General Information, Edition 3, NATO RESTRICTED

K. NEDB Manual Part 2 Standards & Procedures, Edition 3, NATO RESTRICTED

L. NEDB Manual Part 4.2 Manual for Quality Control program, Edition 5, NATO RESTRICTED

M. NEDB-EO Manual Part 3 ProNEDB-EO User Manual, Edition 3, NATO RESTRICTED

N. NEDB-EO Manual Part 4 Pro-DBA/M Manual, Edition 3, NATO RESTRICTED

O. NEDB-EO Manual Part 4.1 Manual for Quality Control program - EO, Edition 3, NATO RESTRICTED

P. NEDB-EO Manual Part 5 NEDB-EO Terms and Definitions, Edition 3, NATO RESTRICTED

Q. AC/322(SC/5)N(2008)0006, Guidance for XML Naming and Design within NATO, NATO UNCLASSIFIED

1.3.2 NCI Agency Documents

R. TR/2015/SPW010187/02 - C-EOB Technical Note, NATO RESTRICTED

S. HMI Style Guide for Rich C4ISR Applications, NATO UNCLASSIFIED

T. Bi-SC AIS Minimum Hardware Procurement Specifications. Version 5.6 July 2012

U. NCIRC-TC Cross-Site Scripting (XSS) Remediation Guidelines, July 2009

V. NCIRC-TC SQL Injection Security Remediation Guidelines, July 2009

W. NCIRC-TC Web Application Security Checklist, NITC, July 2009

X. NCIRC – NATO Secret - Approved Fielded Product List (AFPL) Ver. 2014-045, Dec 2014

Y. AI TECH 06.03.01 Identification of Software Assets, NATO UNCLASSIFIED

1.3.3 **Commercial Standards**

Z. ISO/IEC/IEEE29148:2011 – Systems and software engineering – Life cycle processes – Requirements engineering

AA. OMG document Automated Source Code Performance Efficiency Measure, June 11, 2015

1.4 Document Conventions

When referring to NEDB in this document we refer to NEDB including the NEDB-EO and Action Items parts.

This document includes requirements for the NEDB-NG system and descriptions related to these requirements.

The NEDB-NG requirements are divided into following groups:

- System Functional Requirements;
- System Non-functional Requirements.

The system requirements, defined in this document, are individually identified by a unique number (Word paragraph numbers in main body of the document and both paragraph number and specific IDs in annexes), which shall be used at all times as the specific reference for each. No meaning is associated with the order of numbering.

To ensure the required functionality is provided with NEDB-NG and, at the same time, the best value bid is selected, this document differentiates between two types of requirements:

Mandatory requirements, which represent the absolute minimum the bidders **shall** implement to be compliant with the technical criteria of the Invitation For Bid (IFB). Mandatory requirements are formulated using the verb “shall”.

Best value requirements, describing the features necessary for NATO, which are to be considered in the best value evaluation but the bidders might propose not to implement them. However, not implementing these requirements will lower the evaluation of the bid. Best value requirements are formulated using the verb “should”.

The verb “will” indicates a fact, futurity, or a declaration of purpose. The usage of the terms shall, should, and will follow the ISO/IEEE guidance [Y].

2 GENERAL DESCRIPTION

2.1 Product Perspective

NEDB-NG is intended to provide its users with the ability to collaborate on defining parametric data for emitters, with associated platforms, sites, antennas and weapons, and share this data to allow coordination during exercises, training and operations. NEDB-NG will have its main instance running on the BI-SC AIS, but will also be available to all NATO nations. Each NATO nation might have a national instance of NEDB-NG running on its own National EW network.

2.1.1 Users

2.1.1.1 NEDB-NG User roles

NEDB-NG will have several roles for users. These user roles describe the functionality that is available to that user. The following roles are identified:

- Database Manager: Manages the master NEDB-NG and takes care of distribution to the nations and NATO users.
- National Database Administrator: Manages national NEDB-NG, provides updates to the master NEDB-NG, and is responsible for national distribution.
- Database Provider: Provides updates to the national NEDB-NG or Master NEDB-NG through the DBA.
- Database Reader: Uses the data available in the national or Master NEDB-NG.

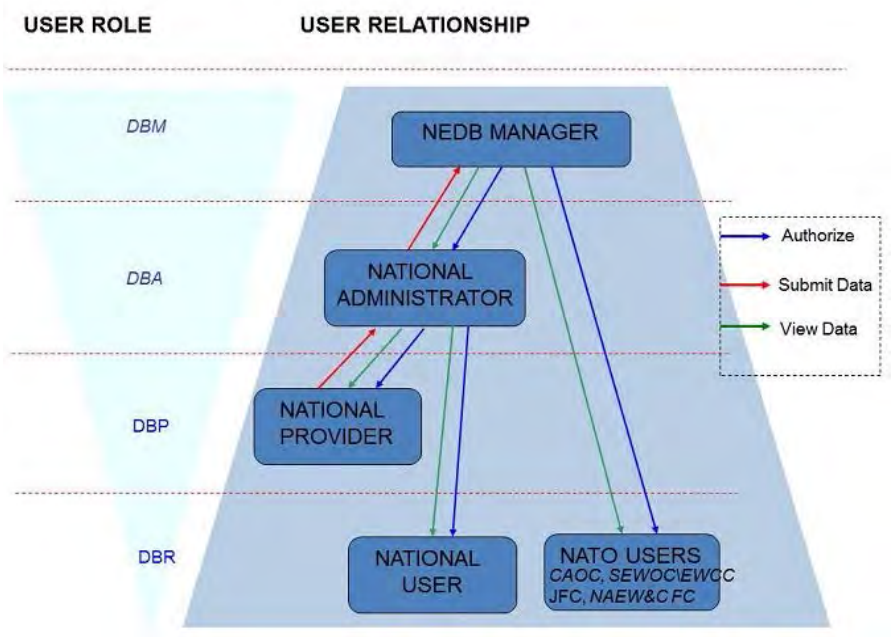

Figure 1 NEDB-NG user roles.

2.1.1.2 Other stakeholders

- Hosting provider: Provides the hosting of the master NEDB-NG and takes care of the infrastructure the master NEDB-NG is running on.

2.1.2 Functionality

The functionality available to the user depends on the role the user has. The functionality per role is depicted in Figure 2.

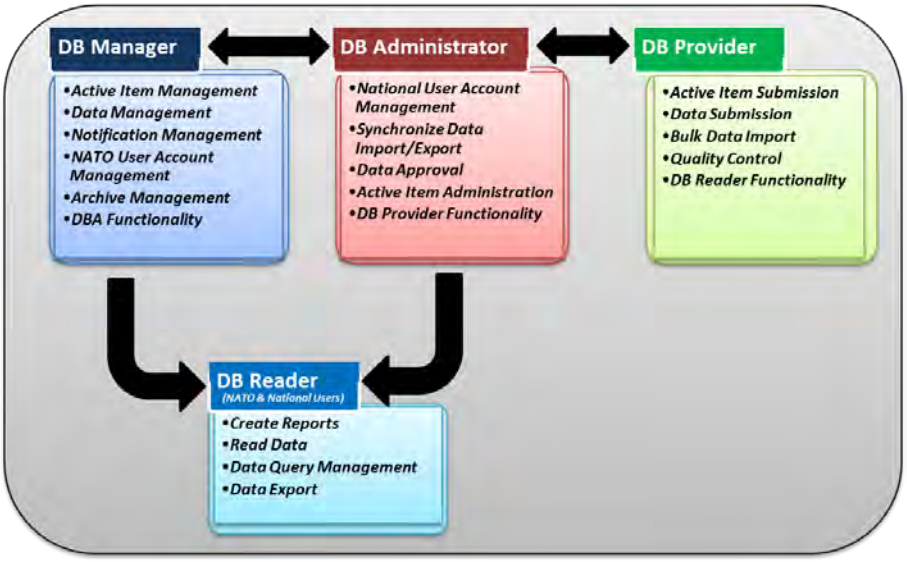

Figure 2: Functionality available to users in NEDB-NG

2.1.3 Data model

NEDB-NG shall use a database to store the managed data. An overview of the relationship between the emitter, platform, site, weapon, antenna, and mode entities in this model is given in Figure 3. The details of the model are not described, but are left to the contractor to specify.

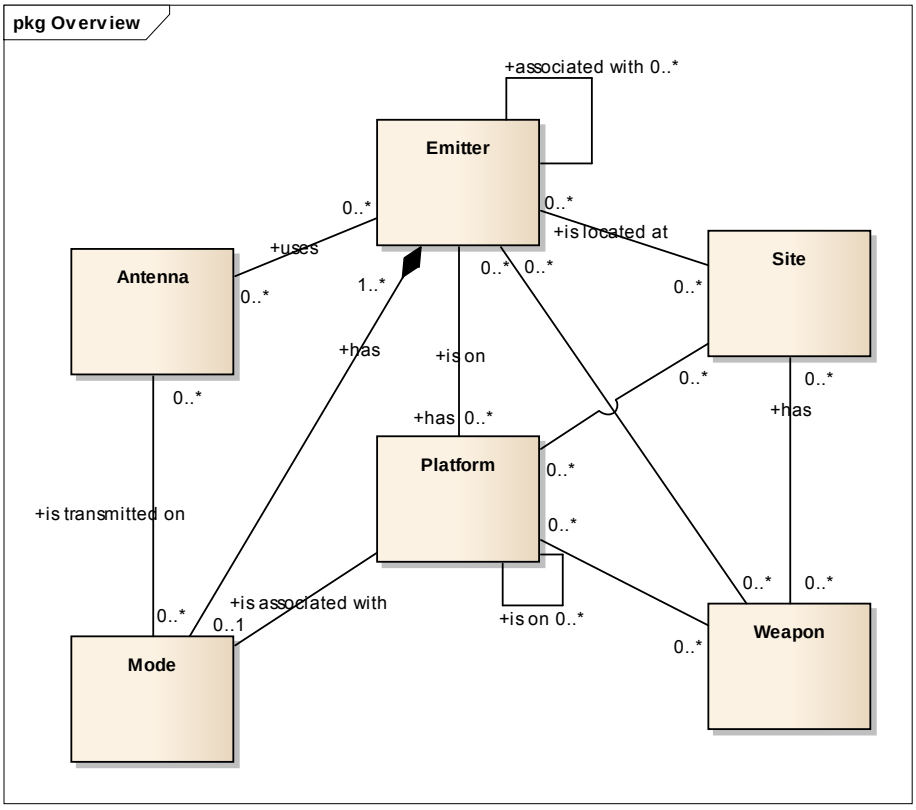

Figure 3: Overview of relations between NEDB-NG main entities

The NEDB-NG data model shall be able to store all information currently stored in NEDB [C] as well as provide storage for new functionality (e.g. communication emitters, and complex emitters). NEDB-NG shall be able to describe any type of complex electromagnetic emitter (e.g. NEDB-NG must incorporate and present parametric data from multi band radars and software defined radios). The data structure shall respect a logical hierarchy to describe the various objects. Complex emitters are capable of producing intricate pulse trains by combining 2 or more of various modulation types (for instance: multiple PD lengths or different modulations on pulses) and/or scan characteristics during a transmission mode in a timely correlation (sequentially and/or simultaneously).

A list of fields recommended to be considered for inclusion is available in an NATO RESTRICTED list [Annex A-2].

2.1.4 Coverage and integration

NEDB-NG will be used both by NATO (JEWCS) and the NATO Nations. NATO will have a master NEDB-NG running on NCI Agency server infrastructure in the BI-SC AIS NATO SECRET network. The NATO Nations could use the NATO master NEDB-NG, but will often use NEDB-NG on their own NATO Nation's EW networks (which in most cases doesn't have a connection to BI-SC AIS). Data synchronisation between these instances of NEDB-NG will take place though a "Synchronisation" feature as has been depicted in Figure 4.

NEDB-NG will also be used on, for example, ships and planes. As these might work in an isolated infrastructure, there is need here too for some functionality to transfer the data from the NEDB-NG into this standalone one. It could use some simplified "Synchronisation" feature as there is no need to send updates back to the master NEDB-NG database.

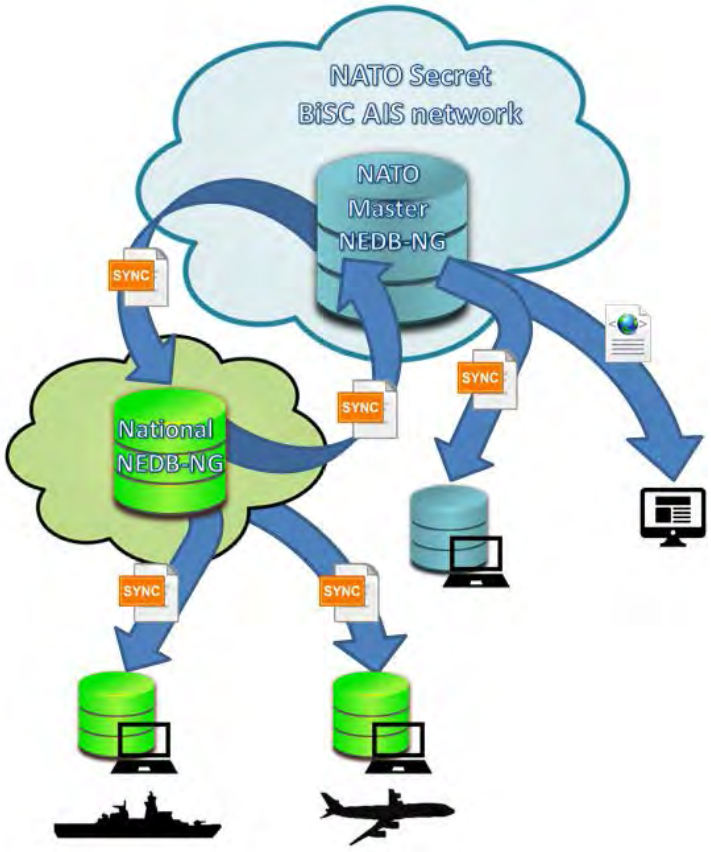

Figure 4: NEDB-NG data distribution and usage

2.2 General Constraints

2.2.1 Web-based functionality

NEDB-NG is intended to provide the primary user functionality as a browser-based capability (such as a Web application) accessible via a standard Bi-SC AIS browser (i.e., Internet Explorer).

2.2.2 Classification of information

The data handled by the NEDB-NG system is classified up to NATO SECRET. Users shall be able to indicate the classification level of the data they add to or manage in NEDB-NG. It is assumed that all users that have access to the NEDB-NG will have the right clearance to access the data in accordance with the need to know principle.

2.2.3 Relationship with other programs

The NEDB-NG is part of the Bi-SC AIS as defined in the Bi-SC AIS Reference Architecture [AC/322-D(2005)0037]. The Bi-SC AIS is NATO's Command and Control Information System used throughout the NATO Command Structure, in NATO Command Deployments and in NATO Exercises. The Bi-SC AIS is in turn one element of NATO's overall CIS Capability, which includes a number of strategic sub systems such as the NATO Core Communications Network, Air C2, Theatre Missile Defence, and Deployable CIS. The capability to be acquired under the Electronic Warfare Functional Services Capability Package is to be a fully integrated element of the Bi-SC AIS. A list of specific non-functional requirements that the NEDB-NG shall satisfy is included in Annex A5 of the SOW.

NEDB-NG is one of the main sources for the NATO Common Electronic Order of Battle (C-EOB). The C-EOB is an XML-based exchange format described in [Q]. NEDB-NG shall be able to produce a properly formatted C-EOB containing a selectable subset of the data contained in NEDB-NG. The production of the C-EOB shall be implemented in such a way that (minor) changes to the C-EOB model can be easily incorporated. Close cooperation between the NEDB-NG project and the C-EOB project is needed.

2.2.4 Existing Capabilities

Currently there already exist systems in NATO capable of storing emitter information:

- NATO Emitter Database (NEDB)
- NATO Emitter Database Electro Optical (NEDB-EO)

Also there are other systems in NATO that store electromagnetic spectrum (EMS) related information:

- Spectrum Management (SMIR)
- Radio Controlled – IED database (RCIED database prototype)

2.2.5 Assumptions

2.2.5.1 NATO is currently implementing an Information Technology Modernization (ITM) project, which will provide the IT infrastructure for deploying NATO applications onto various networks. It is assumed that the NEDB-NG will be deployed in the virtual environment provided by the ITM project.

2.2.5.2 Although no specific interfaces to Bi-SC AIS capabilities are defined within this document an extensive set of Bi-SC AIS interface requirements are provided in Annex 5. It is assumed that exact interfaces to Bi-SC applications and services will be identified during the design phase (for example access to the Order of Battle maintained in Bi-SC AIS capabilities).

2.2.5.3 As stated above, the C-EOB will be used as the main exchange format of EW specific information, between NEDB-NG and other systems. It is assumed that in order to fulfil these

requirements, a modern approach (such as Web services oriented based on REST or SOA technologies) will be adopted by the Contractor during the design phase.

3 FUNCTIONAL REQUIREMENTS

3.1 Manage emitter, and related data

3.1.1 NEDB-NG shall provide an accredited data repository for the current/future NEDB objects (such as emitters, platforms, weapons, antennas, technical parameters and location information) and their interdependencies. *[Verification method: demonstration]*

3.1.1.1 The NEDB-NG system shall manage (Create, Read, Update and Delete - CRUD) the following Information Elements (IE): emitters, platforms, weapons, antennas, locations and technical parameters data. An initial list of IEs and attributes is included in Annex A2 for guidance. The Contractor shall not limit itself to this list and shall actively support the refinement of this list during the design phase.

3.1.1.2 The NEDB-NG system shall manage (CRUD) relationships between information elements.

3.1.2 NEDB-NG shall be able to accept data entries (create, update, and delete) *[Verification method: demonstration]*

3.1.2.1 NEDB-NG shall have the capability to prevent duplication. *[Verification method: test]*

3.1.2.2 NEDB-NG shall have comprehensive data quality control (formats and consistency between entries). *[Verification method: test]*

3.1.2.3 All data entries shall have creation date, modification date, security classification and ownership. *[Verification method: demonstration]*

3.1.3 NEDB-NG shall be able, but not limited, to store all data currently stored in NEDB [C]. *[Verification method: demonstration]*

3.1.4 NEDB-NG shall provide a database management function that permits multi-user access to the database with controlled updating and sharing among NATO users and National users. *[Verification method: demonstration]*

3.1.5 The NEDB-NG data model shall integrate current data descriptions and shall be able to contain all current information without any loss of information. *[Verification method: demonstration]*

3.1.6 Each data model object type shall be independent (Emitter, Platform, Weapon, Antenna, etc.) enabling to link all objects, e.g. weapons to platforms without linking the weapons to an emitter. *[Verification method: demonstration]*

3.1.7 NEDB-NG shall be able to describe electromagnetic emitters (radar, EO, communications) comprised of complex agile modulations, scan types, methods and modes. The current NEDB cannot describe these emitter types. *[Verification method: demonstration]*

3.1.7.1 NEDB-NG shall be able to describe any type of complex electromagnetic emitter (e.g. NEDB-NG shall incorporate and present parametric data from multi band radars and software defined radios). *[Verification method: demonstration]*

3.1.7.2 NEDB-NG shall be able to describe complex radar emitters that are capable of producing intricate pulse trains by combining two or more of various modulation types (for instance: multiple PD lengths or different modulations on pulses (examples of signal modulations are given in Annex A3) and/or scan characteristics during a transmission mode in a timely correlation (sequentially and/or simultaneously). *[Verification method: demonstration]*

3.1.7.3 NEDB-NG shall be able to describe EO/IR complex emitters such as those using Pulse Code Modulation, Pulse Interval Modulation, and Phase Modulation. *[Verification method: demonstration]*

3.1.7.4 NEDB-NG shall be able to describe complex communications emitters capable of time frequency, phase and pulse, spread spectrum, frequency hopping and burst emitters. *[Verification method: demonstration]*

3.1.8 NEDB-NG data structure shall respect a logical hierarchy to describe the various objects (information entities). *[Verification method: inspection]*

3.1.9 The data model objects shall support “classes” and “instances” (e.g. a frigate class, and its national instances). *[Verification method: inspection]*

3.1.10 During submissions and maintenance, the DBP or DBA shall be able to mark RWP, WARM and refined data. All values shall be changed upon the discretion of the owning nation. *[Verification method: test]*

3.1.11 NEDB-NG shall exploit emerging technologies. Some NEDB business procedures are outdated, therefore the contractor shall identify and highlight discrepancies between the foreseen NEDB-NG business processes and those of the current NEDB. These changes are to be accepted by the NEDB-NG PWG before the implementation. *[Verification method: analysis]*

3.2 Approve data

3.2.1 NEDB-NG shall require content approval for changes to the data. *[Verification method: test]*

3.2.1.1 NEDB-NG shall provide authorized users (DBA/DBM) with the functionality to approve changes to the NEDB-NG data.

3.2.1.2 NEDB-NG shall only display data changes to users that are required to approve the data and to the user who submitted the data while that data has not been approved by both the DBA and the DBM. *[Verification method: test]*

3.2.1.3 NEDB-NG shall display data to all users once it has been approved by the DBA and DBM. *[Verification method: test]*

3.3 Read emitter and related data

3.3.1 NEDB-NG shall provide a user interface for authorised users to view the data stored in NEDB-NG. *[Verification method: demonstration]*

3.3.2 NEDB-NG shall provide users the functionality to apply custom column sorting and positioning for results in tabular format. *[Verification method: test]*

3.3.3 NEDB-NG shall allow every user to configure / customise views and store this customisation in NEDB-NG. *[Verification method: test]*

3.4 Manage data queries

3.4.1 All NEDB-NG data queries shall be stored in a database table. *[Verification method: demonstration]*

3.4.1.1 The table shall contain at least the query text, a title, a date of creation/modification and originator (author of the query). *[Verification method: test]*

3.4.1.2 The available queries shall be organised, with two top nodes “common” (NEDB-NG provided queries) and “private” (user-built/advanced queries). Under each node, the queries will be grouped by object. *[Verification method: test]*

3.4.1.3 The DBM and the creating nation shall be able to remove a stored query from the table. *[Verification method: test]*

3.4.2 NEDB-NG query results shall be displayed in a grid. A menu option shall allow the user to automatically export the tabular data either from the whole grid or from selected rows into a standard format which can be imported in any spreadsheet software tool without any loss of integrity. *[Verification method: test]*

3.4.3 NEDB-NG shall provide the user with the functionality to page through the results and to scroll inside page. Scrolling or paging shall allow the user to:

- Proceed to the start of the page
- Proceed to the end of the page
- Proceed to the prior page of the list
- Proceed to the next page of the list
- Proceed to a specific page of the list
- Proceed to a relative location in the page (i.e., by dragging the scroll bar to a relative location)
- Define the page size (between two limits defined by the ON administrator)

[Verification method: demonstration]

3.4.4 NEDB-NG shall allow the user to sort tabular data on one or more columns. *[Verification method: demonstration]*

3.4.5 Query results shall only display active records by default. An option will be provided to allow archived (“deleted”) records in query results if selected by the user (only for DBM. DBA, and DBP). *[Verification method: test]*

3.4.6 NEDB-NG “Query Builder” function shall allow users to develop and store their own queries. *[Verification method: demonstration]*

3.4.7 NEDB-NG shall display the classification of data queries based upon the highest classification of the datasets in accordance with NEDB security classification guidance [J]. *[Verification method: test]*

3.4.8 NEDB-NG shall provide authorized users with the functionality to export either the full result of a data query or selected rows in the grid, to multiple formats including as a minimum XML, doc, docx, xls, xlsx, csv and pdf format. *[Verification method: test]*

3.5 Import bulk data

3.5.1 NEDB-NG shall support automated bulk upload operations allowing for ingestion of entries, updates to existing entries, and deletion of bulk entries. *[Verification method: test]*

3.5.1.1 NEDB-NG shall provide DBP, DBA, and DBM functionality to select a pre-defined formatted file (XML, xls, xlsx and csv) and import it in the NEDB-NG. *[Verification method: test]*

3.5.1.2 This automated process shall include a Comparator Tool to process incoming data sets against the NEDB-NG, identifying changes, duplications and ambiguities in the data sets. *[Verification method: test]*

3.5.1.3 The Comparator Tool shall be able to identify NEDB-NG data sets that are not flagged for bulk deletion. *[Verification method: test]*

3.5.1.4 The NEDB-NG bulk upload operation shall provide a means to monitor the status and troubleshoot historical records of uploaded data sets. *[Verification method: test]*

3.6 Perform quality control on data

3.6.1 NEDB-NG shall automatically validate user data inputs producing error messages to the submitting user concerning formats and data consistency before submission. *[Verification method: test]*

3.6.2 NEDB-NG shall support the creation of specific queries for quality control. *[Verification method: demonstration]*

3.6.2.1 Quality control features as are provided in NEDB Quality Control [L, O] shall be supported. *[Verification method: analysis]*

3.7 Create reports

3.7.1 NEDB-NG shall provide a reporting functionality similar to the one in the current NEDB. *[Verification method: analysis]*

3.7.1.1 The user shall be able to export either the full result of a query or selected rows in the grid, to several formats including as a minimum XML, doc, docx, xls, xlsx, csv and pdf format. *[Verification method: demonstration]*

3.7.2 NEDB-NG shall at a minimum provide the same reports that are currently available in NEDB. *[Verification method: analysis]*

3.7.3 NEDB-NG shall support printing of landscape, portrait and all different paper sizes and layouts. The layout of information printed shall be proposed by the Contractor and approved by the Purchaser before the implementation. *[Verification method: demonstration]*

3.7.4 NEDB-NG shall support printing to local and network printers. *[Verification method: test]*

3.7.5 NEDB-NG shall enable an authorised user to preview (Print Preview) a NEDB-NG report before it is printed. *[Verification method: demonstration]*

3.8 Data export

3.8.1 NEDB-NG shall provide functionality to build up a dataset for export; the dataset shall be able to contain results from multiple queries. *[Verification method: test]*

3.8.2 NEDB-NG shall provide an export functionality of information into the NATO C-EOB format [Q]. *[Verification method: test]*

3.8.3 NEDB-NG shall as a minimum be able to exchange data to and from the database via XML. *[Verification method: demonstration]*

3.8.4 NEDB-NG shall provide an export functionality to allow objects having geo-location information to be displayed in Geographic Information Systems (GIS) tools and mapping applications. *[Verification method: demonstration]*

3.8.4.1 At least the following export formats shall be supported:

- o KML
- o NVG 2.0 and NVG 1.5
- o ESRI shape file
- o CSV

[Verification method: test]

3.9 Coordinate tasks related to data updates (Active Items)

3.9.1 NEDB-NG shall provide a notification functionality to allow nations (DBAs) and NATO JEWCS (DBM) to coordinate and keep track of tasks related to EW data updates. Notifications will be stored in the NEDB-NG to record progress and history. *[Verification method: test]*

3.9.2 NEDB-NG shall provide DBA and DBM a display in one view of:

- o active item number
- o spotnumber
- o date of submission
- o status of every nation answer.

[Verification method: demonstration]

3.9.3 NEDB-NG shall include functionality allowing users to coordinate and keep track of tasks related to the data updates based upon the Active Items process as described in Chapter 3 of NEDB Manual Part 2. [K]. *[Verification method: analysis]*

3.9.4 NEDB-NG shall enable the users to create, send, and update Active Items in order to keep track of the development and history. Deletion of Active Items shall only be available to DBM and DBAs. *[Verification method: demonstration]*

3.9.4.1 Active Items (AI) shall contain at least the following fields:

- o Querying nation
- o AI creation date
- o Tasked nations
- o NATO Spotnumber (can contain multiple Spotnumbers)
- o Query / Action requested
- o National response (action code lookup + free text field)

[Verification method: demonstration]

3.9.5 NEDB-NG shall allow the DBM and DBAs to close or delete an Active Item. *[Verification method: test]*

3.9.6 NEDB-NG shall provide the option to archive closed Active Items. *[Verification method: test]*

3.9.6.1 NEDB-NG shall not display Archived Active Items in the normal reports and overviews, but only display them in reports and overviews for archived Active Items. *[Verification method: test]*

3.10 Manage user accounts

3.10.1 NEDB-NG shall incorporate NEDB-NG User authentication and access control lists (ACLs) to control access to NEDB-NG application, data, and services. *[Verification method: test]*

3.10.2 NEDB-NG shall provide means for authorised Users to configure Role-based access control according to the following guidelines:

- Users are associated with User Roles
- User Roles determine the functions available to the User
- A User has permission on a particular functionality only if the User has an authorised Role

[Verification method: test]

3.10.3 NEDB-NG shall support the following User roles:

- Database Manager (DBM)
- Database Administrator (DBA)
- Database Provider (DBP)
- Database Reader (DBR)

[Verification method: inspection]

3.10.4 NEDB-NG shall enable an authorised user to configure the availability of NEDB-NG system functions for each NEDB-NG User role. *[Verification method: test]*

3.10.5 NEDB-NG shall support the following functionalities to be made available to the user roles:

- Database Manager
  - Active Item Management
  - Data Management
  - Notification Management
  - NATO User Access Management
  - Archive Management
  - Database Administrator functionality
- Database Administrator
  - Data Approval
  - Synchronisation Data Import and Export
  - National User Access Management
  - Active Item Administration
  - Database Provider functionality
- Database Provider
  - Active Item Submission
  - Data Submission
  - Bulk Data Import
  - Quality Control
  - Database Reader functionality
- Database Reader
  - Create Reports
  - Read Data

- Data Query Management
- Data Export

[Verification method: test]

3.10.6 NEDB-NG shall allow a DBM or DBA to lock and unlock the NEDB-NG User accounts. *[Verification method: demonstration]*

3.11 Manage NEDB-NG system

3.11.1 NEDB-NG shall provide a web-based architecture on the Bi SC AIS to allow users (validated by functional roles) to retrieve information in the form of predefined and ad hoc reports and submit new, update and delete existing information in the database, while implementing NATO security requirements on access to the information; user access to the web portal/application will be based on the functional roles DBM, DBA, DBP, and DBR. *[Verification method: demonstration]*

3.11.2 The DBM shall be able to update Lookup Tables (domain values of IE attributes) without the assistance of the contractor. *[Verification method: test]*

3.11.2.1 NEDB-NG shall generate a notification to DBPs and DBAs indicating changes made to the Lookup Tables. *[Verification method: test]*

3.11.3 NEDB-NG shall have functionality for DBM to restore any data. *[Verification method: test]*

3.12 Manage archived emitter parametric data

3.12.1 NEDB-NG shall be able to archive deleted emitter parametric data. *[Verification method: test]*

3.12.2 When an emitter is deleted, NEDB-NG shall store / archive all parametric data (including antenna details) for 5 years before it is purged from NEDB-NG. During this period the DBM shall be able to restore the emitter. *[Verification method: analysis]*

3.13 Work stand-alone (not connected to Bi-SC AIS)

3.13.1 NEDB-NG shall provide a stand-alone capability, in case of working outside the Bi-SC AIS network boundary. *[Verification method: demonstration]*

3.13.1.1 The stand-alone capability shall offer the same capabilities and look-and-feel as the BI-SC AIS master instance. *[Verification method: inspection]*

3.13.1.2 The stand-alone capability shall be able to load (Sync) a snapshot of data from the (online) BI-SC AIS master database through any media (CD, external memory, etc.). *[Verification method: test]*

3.13.1.3 The stand-alone capability shall provide functionality to export (Sync) modified data to the (online) Bi-SC AIS master database through any media (CD, external memory, etc.). *[Verification method: test]*

3.13.2 The stand-alone capability shall use the same web application as the online system. *[Verification method: inspection]*

3.13.3 Users logged in as DBP or DBA on the standalone NEDB-NG system shall be able to create submissions offline. NEDB-NG shall allow authorised users to transfer these submissions (additions, deletions and modifications) to the master NEDB-NG.

- Via the network if the system can be connected to the target network;

- And- via file(s) exported to any media (CD, external memory etc.) to be transferred manually to the target network.

[Verification method: test]

4 NON-FUNCTIONAL REQUIREMENTS

4.1 Accessibility

4.1.1 NEDB-NG shall use the human-machine interface (HMI) Style Guide for Rich C4ISR Applications [Q] to improve accessibility of the NEDB-NG system. *[Verification method: inspection*

4.1.1.1 The contractor shall follow the guidelines given in the (HMI) Style Guide to implement the user interface of the NEDB-NG. *[Verification method: inspection]*

4.1.2 NEDB-NG input forms shall offer a “tabbing through” functionality following a logical path (e.g. top to bottom, left to right, min value to max value). *[Verification method: test]*

4.1.3 All text fields in the NEDB-NG HMI shall be able to accept copy and paste to and from the clipboard. *[Verification method: test]*

4.1.4 NEDB-NG shall use lists with selectable values when applicable. *[Verification method: inspection]*

4.1.4.1 Rapid navigation/selection within the list shall be provided. *[Verification method: test]*

4.2 Audit and control

4.2.1 NEDB-NG must not suffer degradation to the system capability or performance as a result of running internal diagnostic / audit programmes. *[Verification method: analysis]*

4.2.2 NEDB-NG shall generate and maintain an Audit Log for each of the following auditable events, shall associate individual User identities to those events, and shall include date and time of the event, type of event, User identity, and the outcome (success or failure) of the event:

- System start-up and shutdown,
- Log-on and log-off of individual Users,
- Changes to permissions and privileges of Users and groups,
- Changes to security relevant system management function,
- Any access to audit log,
- Deletion, creation or alteration of the security audit records,
- All privileged operations,
- All updates of NEDB-NG access rights,
- All attempts to delete, write or append the Audit files.

[Verification method: test]

4.2.3 NEDB-NG shall alert the Administrator and the Enterprise Management System when the Audit Log reaches 80% of its maximum permitted size.

NEDB-NG shall support the following warning system events:

- Low network bandwidth: Organisational Node-specific
- Almost out of disk space (80% full): NEDB-NG server specific
- Almost out of table space(80% full): NEDB-NG server specific

[Verification method: test]

4.2.4 NEDB-NG shall support the following system error events:

- Crashing of software components
- Unplanned and recovering of a connection
- Incorrect received data

[Verification method: inspection]

4.2.5 NEDB-NG shall enable an authorised user to display system events using standard system management tools like the Windows Management Console. *[Verification method: test]*

4.2.5.1 NEDB-NG shall enable an authorised user to filter system events by date/time range, event Identifier, event type, category, description text, OS User/OS User Group, or source. *[Verification method: test]*

4.2.5.2 NEDB-NG shall enable an authorised user to perform system event log clearing and backup. *[Verification method: test]*

4.2.5.3 NEDB-NG shall enable an authorised user to sort the system event log on date/time, event Identifier, event type, category, description text, OS User/OS User Group, or source. *[Verification method: test]*

4.2.5.4 NEDB-NG shall generate and display a message to the user, including the type of error, when a system error event occurs. *[Verification method: test]*

4.2.5.5 NEDB-NG shall log a memory dump of the whole system when NEDB-NG crashes.

[Verification method: test]

4.3 RAM Requirements

4.3.1 The contractor shall assure that the system will be compliant with all the RAM requirements. *[Verification method: analysis]*

4.3.2 The contractor shall define, develop and maintain the appropriate RAM figures in order to demonstrate and assure that the Intrinsic and Operational availability of the system will be achieved. *[Verification method: analysis]*

4.3.3 The contractor shall design the system taking into account the RAM requirements and figures defined in this document and in the SoW. *[Verification method: analysis]*

4.3.4 The contractor shall assure that modification on the system due to a configuration change, obsolescence, engineering change or other possible change in the system will not affect the Operational and Intrinsic Availability figures. *[Verification method: analysis]*

4.3.5 The contractor shall assure that the level of spares (if any) and all the other logistic resources needed to achieve the Operational availability requirements, will be procured and maintained as required by the SoW. *[Verification method: analysis]*

4.4 Availability

4.4.1 NEDB-NG shall ensure system availability to Users so as not to experience service interruption resulting from intermittent connectivity, except as it impacts the User's direct access to the web application server for an in-progress action. Intermittent connection is defined as loss of connectivity that is less than thirty (30) seconds. *[Verification method: test]*

4.4.2 NEDB-NG shall ensure NEDB-NG System availability to NEDB-NG Users so that they do not experience interruption of NEDB-NG Services resulting from limited bandwidth. Limited bandwidth is defined as bandwidth of 64 kbps. *[Verification method: test]*

4.4.3 NEDB-NG shall ensure NEDB-NG System availability to NEDB-NG Users so that they do not experience interruption of NEDB-NG Services resulting from high latency. High latency is defined as latency between 1000 and 4500 milliseconds. *[Verification method: test]*

4.4.4 NEDB-NG shall be available through Bi-SC AIS 24 hours a day, seven days a week, with an intrinsic availability rate of 99%. Measurements of availability shall not include failures resulting from factors determined to be external to NEDB-NG (e.g., loss of domain controller, loss of network connectivity). *[Verification method: analysis]*

4.4.5 The contractor shall calculate the Mean Down time and Operational availability taking into account the RAM requirement defined in this section and the delay time defined in the SoW. *[Verification method: analysis]*

4.4.6 In case of NEDB-NG failure, the interruption of services shall not exceed two hours in 80% of cases for an individual NEDB-NG User. In no case shall the availability interruption of services exceed 24 hours for an individual NEDB-NG User. Measurements of availability shall not include failures resulting from factors determined to be external to NEDB-NG (e.g., loss of domain controller, loss of network connectivity). *[Verification method: analysis]*

4.4.7 The contractor shall assure that it will be possible to perform hardware and software maintenance activities on their equipment in parallel with, and with minimal interference, to operational activities. *[Verification method: demonstration]*

4.4.8 The contractor shall assure that it will be possible to perform failure investigation in parallel with (and without detrimental impact) on normal operations. *[Verification method: demonstration]*

4.4.9 System operation shall not cause data corruption or loss of data integrity due to connection failure or other hardware/software failures. *[Verification method: demonstration]*

4.4.10 System operation shall not be interrupted during incorporation of in-service equipment updates or software maintenance updates. *[Verification method: demonstration]*

4.5 Reliability

4.5.1 The NEDB-NG system shall have a Mean Time Between Failure (MTBF) greater than 250 hours. *[Verification method: analysis]*

4.5.2 The NEDB-NG shall provide the system administrators with the ability to perform full and incremental backups of the data repositories and software without impacting the availability. *[Verification method: demonstration]*

4.6 Maintainability

4.6.1 The system MTTR of the NEDB-NG System shall be less than 2.5 hours. *[Verification method: analysis]*

4.6.2 The contractor shall design the maintenance concept in order to assure the Operational Availability requirement will be met. *[Verification method: analysis]*

4.7 Backup

4.7.1 NEDB-NG shall be able to make a backup of all or selected data automatically at a configurable frequency (e.g., every 24 hours) and manually by the authorised User. *[Verification method: demonstration]*

4.7.2 NEDB-NG shall enable an authorised user to restore information from backups. *[Verification method: demonstration]*

4.7.3 NEDB-NG shall provide the ability to perform full and incremental backups of NEDB-NG data and software without impacting system availability. *[Verification method: demonstration]*

4.7.4 NEDB-NG shall permit backup and archiving of both the complete NEDB-NG Repository and selected Information Elements. *[Verification method: demonstration]*

4.8 Certification and Accreditation

4.8.1 NEDB-NG will be deployed in the NATO SECRET (NS) security domains. *[Verification method: inspection]*

4.8.2 NEDB-NG shall comply with NATO Certification and Accreditation. [D, F] *[Verification method: inspection]*

4.8.3 Security Risk Assessment and Requirements Analysis *[Verification method: inspection]*

4.8.3.1 The Contractors shall support security accreditation of the NEDB-NG following the NATO accreditation process defined in Guidelines for the Security Approval or Accreditation (SAA) of CIS [D]. *[Verification method: inspection]*

4.8.3.2 Upon submission of NEDB-NG description and subsequent decision by the SAA, the Contractor shall conduct a Security Risk Assessment (SRA), which identifies all threats, vulnerabilities, and resulting risks to NEDB-NG. *[Verification method: inspection]*

4.8.3.2.1 The SRA shall identify any changes to the System Requirement Specification required to achieve the desired system accreditation. *[Verification method: inspection]*

4.8.3.2.2 The Contractor shall provide a report documenting the findings of its SRA. *[Verification method: inspection]*

4.8.3.3 The Contractor shall prepare the System-Specific Security Requirements Statement (SSRS), defining all security measures required to counter the risks identified in the SRA, as a change to the System Requirement Specification. *[Verification method: inspection]*

4.9 Compatibility

4.9.1 NEDB-NG and all its components shall operate on Bi-SC AIS baseline systems [S]. *[Verification method: inspection]*

4.9.2 NEDB-NG shall be capable of operating within the Bi-SC AIS (NS WAN) environment (including servers, network, services, workstations, security settings and applications – such as web browsers) in the presence of the approved NATO Security Settings (target version to be provided by the Purchaser during the Design Stage). Any deviations from the approved security

settings shall be identified by the Contractor prior to testing and shall be subject to approval of the Purchaser. *[Verification method: test]*

4.9.3 NEDB-NG shall offer similar layouts and functionalities when accessed through NATO approved Web browsers. The contractor will ensure that browser-neutral technologies are used when developing the software. A top menu will be accessible from all pages. *[Verification method: inspection]*

4.10 Compliance

4.10.1 NEDB-NG should provide the same functionality and follow the same processes as provided in NEDB [C]. *[Verification method: analysis]*

4.10.2 NEDB-NG shall comply with all applicable NATO policies, guidelines and standards as well as applicable non-NATO standards. *[Verification method: inspection]*

4.10.3 NEDB-NG user interface, error messages, user manuals, and help files shall be in UK English. *[Verification method: inspection]*

4.10.4 NEDB-NG shall adhere to, and implement, Metadata and metadata structure in accordance with the NATO Core Metadata Specification [G]. The contractor shall comply with classification and releasability rules and regulations throughout the procurement process. *[Verification method: inspection]*

4.10.5 NEDB-NG data used outside the database shall have metadata in accordance with the NATO core Metadata Specification [G] (i.e. Security Classification, Date, Creator, Unique ID, etc.). *[Verification method: inspection]*

4.11 Deployment

4.11.1 NEDB-NG shall be supported using an Integrated Logistic Support/Contractor Logistic Support (ILS/CLS). *[Verification method: inspection]*

4.11.2 NEDB-NG shall implement SWID tags in support of configuration management as outlined in NCI Agency instruction about Identification of Software Assets [X]. *[Verification method: inspection]*

4.11.3 All computer software provided under this Contract shall meet or exceed the following common requirements:

4.11.3.1 Is the latest commercial version with latest updates accredited for the NATO network, unless agreed by the Purchaser. *[Verification method: inspection]*

4.11.3.2 Be provided with electronic and hardcopy documentation. *[Verification method: inspection]*

4.11.3.3 The preferred media is CD/DVD. *[Verification method: inspection]*

4.11.4 Standard Server NATO Network COTS Software

4.11.4.1 The Standard NATO Network COTS Software under this Contract shall meet the requirements specified in the table below. The licensing for all software components (including versions/editions, client access licenses, etc.) for the Standard Server NATO Network COTS Software shall be such that the component can:

- Take full advantage of the number of processors of the Standard Server

- Take full advantage of the amount of memory of the Standard Server
- Support up to 100 concurrent users

Software Item	Name
Operating System	Windows 7 SP1, Windows 2008 R2, or Windows 2012 R2 64bit Server Standard/ Enterprise Edition (To be determined during Design Phase)
Database Server	SQL Server 2008, PostgreSQL, or Oracle 11g
Web and Application Server Software	Internet Information Server (Version 6 or higher) or Apache

[Verification method: inspection]

4.11.5 Standard Server National Network COTS Software

4.11.5.1 The Standard National Network COTS Software shall meet the minimum requirements specified in the table below. The licensing for all software components (including versions/editions, client access licenses, etc.) for the Standard Server National Network COTS Software shall be such that the component can:

- Take full advantage of the number of processors of the Standard Server
- Take full advantage of the amount of memory of the Standard Server
- Support up to 100 concurrent users

Software Item	Name
Operating System	Windows 7 SP1, Windows 2008 R2, or Windows 2012 R2 64bit Server Standard/ Enterprise Edition (To be determined during Design Phase)
Database Server	SQL Server 2008, PostgreSQL, or Oracle 11g
Web and Application Server Software	Internet Information Server (Version 6 or higher) or Apache

[Verification method: inspection]

4.11.6 The Standard Stand-Alone Server COTS Software

4.11.6.1 The Standard Stand-Alone Server COTS Software shall meet or exceed the minimum requirements specified in the table below. The licensing for all software components (including versions/editions, client access licenses, etc.) for the Standard Stand-Alone COTS Software shall be such that the component can:

- Support to minimum 1 user

Software Item	Name
Operating System	Windows 7 SP1, Windows 2008 R2, or Windows 2012 R2 64bit Server Standard/ Enterprise Edition (To be determined during Design Phase)
Database Server	License free SQL Server: PostgreSQL, SQL Server Express, Oracle *express*
Web and Application Server	Internet Information Server (Version 6 or higher)

Software	or Apache

[Verification method: inspection]

4.11.7 The Reference System COTS Software

4.11.7.1 The Reference System COTS Software shall meet or exceed the minimum requirements specified in the table below. The licensing for all software components (including versions/editions, client access licenses, etc.) for the Reference System COTS Software shall be such that the component can:

- Support up to 10 users

Software Item	Name
Operating System	Windows 7 SP1, Windows 2008 R2, or Windows 2012 R2 64bit Server Standard/ Enterprise Edition (To be determined during Design Phase)
Database Server	SQL Server 2008, PostgreSQL, or Oracle 11g
Web and Application Server Software	Internet Information Server (Version 6 or higher) or Apache

[Verification method: inspection]

4.12 Documentation

4.12.1 Contractor shall provide documentation for NEDB-NG as per SOW. *[Verification method: inspection]*

4.13 COTS development packages

4.13.1 The COTS packages used by the contractor to produce all deliverables shall be approved by the Project Manager at the beginning of the project, and a licensed copy of all tools used during the development shall be provided to NATO.*[Verification method: inspection]*

4.14 Interoperability

4.14.1 NEDB-NG shall provide application programming interfaces (API's) or web-service interfaces to enable external access to database information. NEDB-NG shall provide APIs or web services to be used in the future by: other Bi-SC AIS Functional Services, Fielded Prototype Systems until Bi-SC AIS Functional, Services, Bi-SC AIS Core Services, and other NATO fielded systems. *[Verification method: inspection]*

4.14.2 Contractor shall identify candidate processes for utility and application web services, with the objective of maximising the reusability of services by external applications. *[Verification method: inspection]*

4.14.3 It shall be possible to export and display NEDB-NG queried data to any NATO GIS both online and offline. *[Verification method: inspection]*

4.15 Maintainability

4.15.1 NEDB-NG shall be coded in C++, C#, Java, and/or JavaScript. NEDB-NG Human Machine Interface (HMI) shall be provided as a web based application with a Data View developed in html5, css and javascript that shall run in any standard NATO approved web browser. Other programming languages shall only be used when approved by the Purchaser. *[Verification method: inspection]*

4.15.2 NEDB-NG code shall use UK English for naming (e.g. variables, class names) and comments. *[Verification method: inspection]*

4.15.3 Contractor shall adhere to generally accepted coding standards for the programming language used to build NEDB-NG. *[Verification method: inspection]*

4.15.4 The structure of the XML exchange messages, and the logic to convert between these messages and NEDB-NG database records, should be retrieved from external configuration files to allow updates of the XML format. *[Verification method: inspection]*

4.15.5 All files containing NATO Software Products and configuration items for distribution or deployment shall be identified using the following convention:

<date>_<classification>_<title>_<version_number>[_<platform>][_<processor>][_<local>][.<extension>]ok

[Verification method: inspection]

4.16 Performance / response time (performance engineering)

4.16.1 For up to 100 users accessing the NEDB-NG system via 100Mbps LAN/WAN, while displaying initial NEDB-NG system functional capability (i.e., not a 'splash screen') after <authentication-type> authenticated login (i.e., after entering username/password in login screen in browser), NEDB-NG system application shall be launched and functional within 5 seconds of completing login. *[Verification method: test]*

4.16.2 For up to 50 users simultaneously accessing the Query Service web service, searching an Emitter on multiple parametric characteristics, the NEDB-NG system shall respond (for a search with at least 15 results) within 5 seconds of submitting the request. *[Verification method: test]*

4.16.3 The architecture shall ensure that any submission reaches the next higher echelon within a maximum of 6 hours. *[Verification method: analysis]*

4.16.4 The architecture shall ensure that any DBM action in the database is published as soon as possible, within a maximum of 6 hours (e.g. DB replication onto multiple servers if necessary). *[Verification method: analysis]*

4.16.5 NEDB-NG system software code shall not violate the architectural and coding practice - as stated in [Z] - that affect NEDB-NG system’s performance and resource usage. *[Verification method: inspection]*

4.16.6 The NEDB-NG system shall notify the DBM within 5 seconds on submissions provided by a NATO nation. (Only when the submissions have been submitted locally through the NATO Secret Network domain)

4.16.7 The NEDB-NG system shall support business processes that allow DBA to be in the information exchange flow and approve submissions before they go to DBM. *[Verification method: demonstration]*

4.16.8 The NEDB-NG system shall notify authorized users within 5 seconds on updates in the NEDB-NG database, which have been published by the DBM. *[Verification method: demonstration]*

4.17 Quality (e.g. faults discovered, faults delivered, fault removal)

4.17.1 NEDB-NG shall implement Database integrity mechanisms and error handling for records and sub-records to prevent improper actions. *[Verification method: inspection]*

4.17.2 NEDB-NG shall handle errors occurring during data imports and data synchronisation, provide a clear error description and make sure the database integrity is maintained. *[Verification method: test]*

4.18 Robustness

4.18.1 NEDB-NG shall be able to shut down and reboot without corruption or loss of data in the event of interruption, or failure of the building power supply (i.e. regular auto-save procedures). *[Verification method: test & analysis]*

4.18.2 NEDB-NG shall be robust to function (do not crash) when receiving data not complying to agreed formats. *[Verification method: test & inspection]*

4.18.3 NEDB-NG shall support fail-over in its architecture. Active clients shall be able to survive failure of application server without crashing or affecting the stability of the system. *[Verification method: test & analysis]*

4.18.4 NEDB-NG shall not cause data corruption or loss of data integrity due to connection failure or other hardware/software failures. *[Verification method: test & analysis]*

4.18.5 In case of LAN failure, NEDB-NG shall continue to perform all non-networked functions, for example consistency and security checks of stored data. *[Verification method: test & analysis]*

4.18.6 Data robustness in NEDB-NG shall be supported in two distinct ways:

4.18.6.1 Backups: taking periodic full or incremental 'snapshots' of the data store to mitigate the risk of system/storage failure, *[Verification method: test & analysis]*

4.18.6.2 Archiving: removing and storing data that is no longer required for use from the system, thus reducing the size of the data store (and improving performance). *[Verification method: test & analysis]*

4.19 Scalability

4.19.1 NEDB-NG shall be scalable and be able to handle a minimum of 100 simultaneous users without noticeable degradation of performance. The System shall accommodate, without noticeable degradation of performance, an increase of the number of simultaneous users of minimum 10% per year and a 20% growth in data a year for the initial 5 years of operation. *[Verification method: test]*

4.20 Security

4.20.1 NEDB-NG shall provide access control to ensure that only authorised users can access to the system and the data stored. *[Verification method: test]*

4.20.1.1 NEDB-NG shall support SSO SAML, Active Directory, and operating system authentication. *[Verification method: test]*

4.20.1.2 NEDB-NG shall implement an authentication service that requires the User to provide a valid User ID and password. *[Verification method: test]*

4.20.1.2.1 NEDB-NG shall allow a DBM and DBA to manage login and password details for Users. *[Verification method: test]*

4.20.1.2.2 The NEDB-NG login page shall offer a lost password procedure and include a user validation procedure to reset password. *[Verification method: test]*

4.20.1.3 NEDB-NG shall allow DBM and DBA to set the interval for password change. *[Verification method: test]*

4.20.2 NEDB-NG shall lock accounts that have not been logged in to for six months. *[Verification method: test]*

4.20.3 NEDB-NG shall allow a DBM or DBA to unlock the NEDB-NG User accounts. *[Verification method: test]*

4.20.4 NEDB-NG shall protect data in transit by employing encryption of the entire transaction using SSL or similar technologies. The NEDB-NG system shall have the ability to the ability to import certificates provided by either active directory or NPKI or a NATO interim NPKI or a National PKI. The NEDB-NG system shall have a mechanism to sign or assure that the imports and exports that have been made by a certain user of a certain NEDB-NG instance (integrity). *[Verification method: test]*

4.20.5 NEDB-NG shall provide relevant security label for all textual and graphical documents it generates. *[Verification method: test]*

4.21 Learnability

4.21.1 Any User with basic computer skills shall be able to operate NEDB-NG as a DBR with a maximum of five (5) days of training. Specialist training in operational procedures and advanced GIS functionality may require additional training time. *[Verification method: inspection]*

4.21.2 Any User who has been trained as an NEDB-NG DBM or DBA, shall be able to successfully perform NEDB-NG node administration functions (e.g., manage Users, manage domain values) with a maximum of five (5) days of training. *[Verification method: inspection]*

4.21.3 Any User with basic system administrator skills (i.e., MS Windows system administrator) shall be able to successfully deploy (i.e., install and configure) the NEDB-NG with a maximum of two (2) days of training. *[Verification method: inspection]*

4.21.4 NEDB-NG shall offer an extensive help accessible through the Help menu and contextual buttons. *[Verification method: demonstration]*

4.21.4.1 NEDB-NG Help shall be in UK English. *[Verification method: inspection]*

4.21.4.2 NEDB-NG Help menu shall include an item displaying the NEDB-NG version and POC information. *[Verification method: inspection]*

4.21.5 The Contractor shall deliver a training solution that provides users the functionality to use and test the application and database without interfering with the live data. *[Verification method: inspection]*

4.21.6 The training documentation shall be accessible from the web portal and stand-alone clients. *[Verification method: inspection]*

4.21.7 Training solution shall as a minimum include:

- Video based tutorials
- User Manuals for all users (standalone users shall be able to have access to the full help within the program)

[Verification method: inspection]

4.21.8 The Contractor shall provide a Train-the-Trainer course for NATO JEWCS DBM and National NEDB-NG DBA for a maximum of sixty (60) students. *[Verification method: inspection]*

4.22 Usability by target user community

4.22.1 NEDB-NG shall use a web-interface compliant to the NATO HMI Style Guide for Rich C4ISR Applications. *[Verification method: inspection]*

4.22.2 NEDB-NG shall apply software internationalisation principles to allow the software to properly run across national systems of all NATO nations, e.g. handling different date, and number formats. *[Verification method: inspection]*

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PROVIDE FUNCTIONAL SERVICES FOR ELECTRONIC WARFARE – INCREMENT 1

NATO Emitter Database Next Generation (NEDB-NG)

BOOK II – PART IV – ANNEX A1

ABBREVIATIONS

ABBREVIATIONS

AFPL	Approved Fielded Products List
ABL	Approved Baseline
AIS	Automated Information System
BEN	Basic Encyclopaedia Number
Bi-SC	Bi-Strategic Command
CBT	Computer Based Training
CCB	Configuration Control Board
CDR	Critical Design Review
C-IED	Counter Improvised Explosive Device
CI	Configuration Item
CIS	Communications and Information System
CLIN	Contract Line Item Number
CMB	Configuration Management Database
CMP	Configuration Management Plan
CMT	Corrective Maintenance Time
COI	Communities of Interest
COP	Common Operational Picture
COTS	Computer of the Shelf
CP	Capability Package
CSA	Configuration Status Accounting
DBA	Database Administrator
DBM	Database Manager
DBP	Database Data Provider
DBR	Database Reader
DBU	Database User
DDP	Delivery Duty Paid
DRR	Deployment Readiness Review
ECP	Engineering Change Proposal
EO	Electro-Optical emitter
EOB	Electronic Order of Battle
ESE	Electronic Security Environment
EW	Electronic Warfare
EWCOP	Electronic Warfare Common Operational Picture
FAT	Factory Acceptance Test
FBL	Functional Baseline
FCA	Functional Configuration Audit
FK	Foreign Key
FMO	Final Mode of Operation
FOC	Full Operating Capability
FSA	Final System Acceptance
GIS	Geographic Information System
GSE	Global Security Environment
IA	Implementation Authority
IED	Improvised Explosive Devices

ILS	Integrated Logistics Support
IOC	Initial Operating Capability
IT&V	Interoperability Testing and Verification
JEWCS	Joint Electronic Warfare Core Staff
LDT	Logistics Delay Time
LSA	Logistic Support Analyses
LRU	Line Replaceble Unit
LSE	Local Security Environment
MDS	Material Datasheet
MSTO	Minimum Safe To Operate
MTBF	Mean Time Between Failure
MTTR	Mean Time To Repair
NEDB	NATO Emitter Database
NEDBA	NEDB Application
NEDBAG	NATO Emitter Database Advisory Group
NEDB-EO	NATO Emitter Database – Electro Optical
NEDB-NG	NATO Emitter database – Next Generation
NEDB-NG PWG	NEDB-NG Project Working Group
NEWWG	NATO Electronic Warfare Working Group
NS WAN	NATO Secret Wide Area Network
NSN	NATO Stock Number
OBL	Operational Baseline
OA	Operation Authority
OS	Operating System
OTS	Of the Shelf
PBL	Product Baseline
PCA	Physical Configuration Audit
PCR	Project Checkpoint Review
PDR	Preliminary Design Review
PHR	Project Highlight Report
PIN	Place Identification Number
PMP	Project Management Plan
PMS	Project Master Schedule
PMT	Preventive Maintenance Time
POC	Point Of Contact
PSA	Partial System Acceptance
PSRR	Preliminary System Requirements Review
PWBS	Project Work Brake down Structure
PWG	Project Working Group
QC	Quality Control
QM	Quality Management
RAM	Reliability, Availability and Maintainability
RC-IED	Radio Controlled Improvised Explosive Device
RFD	Request for Deviation
RFW	Request for Waiver
RM	Risk Management
RWP	Real World Parameters

SAA	Security Accreditation Authority
SAD	System Architecture Description
SAN	Storage Area Network
SAP	Security Accreditation Plan
SAT	Site Acceptance Test
SCP	Software Change Proposals
SDP	System Development Plan
SDR	System Design Review
SDS	Software Design Specification
SECOP	Security Operating Procedures
SIGINT	Signal Intelligence
SIR	Software Incident Reports
SISRS	System Interconnection Security Requirement Statement
SIT	System Integration Test
SIVP	Security Implementation Verification Procedures
SM	Spectrum Management
SM&C	Service Management and Control
SME	Subject Matter Expert
SOA	Service Oriented Architecture
SOW	Statement of Work
SPA	Service Provision Authority
SQR	Support Qualification Review
SRA	Security Risk Assessment
SRR	System Requirements Review
SRS	System Requirements Specification
SSDS	System Security Design Specification
SSMAT	System Support and Maintenance Acceptance Testing
SSRS	System Security Requirements Statements
SSS	Schedule of Supplies and Services
STANAG	Standard NATO Agreement
STCCT	Spectrum Tools Configuration Control Team
SWRS	Software Requirements Specification
TCO	Total Cost of Ownership
TMR	Training Material Review
TNA	Training Needs Analyses
TMO	Transition Mode of Operation
TP	Test Plan
TRR	Test Readiness Review
TSEOB	Theatre Specific Electronic Order of Battle
UAT	User Acceptance Test
UIS	User Interface Specification
WARM	War Reserved Mode
WP	Work Package
WS	Web Services
WSDL	Web Service Description Language

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PROVIDE FUNCTIONAL SERVICES FOR ELECTRONIC WARFARE – INCREMENT 1

NATO Emitter Database Next Generation (NEDB-NG)

BOOK II – PART IV – ANNEX A3

INTRA-PULSE MODULATION EXAMPLES

Table of Contents

1. INTRODUCTION

1.1 PURPOSE

1.1.1 The purpose of this annex is to provide various examples of intra-pulse modulation which are required to match with the current day radar technologies with various intra pulse modulations such as Chirp, Barker, Frank, Poly-phase and Poly time codes.

1.1.2 The Contractor shall provide engineering judgement on how to implement the various intra-pulse modulations and be responsible for the realization of the intra-pulse modulation elements required in the domain-model of the NEDB-NG.

2. INTRA-PULSE MODULATION EXAMPLES

2.1 RANGE RESOLUTION

2.1.1 Intra-pulse modulation is applied to improve the range resolution detection in radar. The result of intra-pulse modulation is a compressed pulse with the energy of a long pulse and the high resolution of a short pulse width.

2.1.2 The ability of the receiver to improve the range resolution over that of the conventional system is called the Pulse Compression Ratio (PCR). For example a pulse compression ratio of 50:1 means that the system range resolution is reduced by 1/50 of the conventional system.

2.1.3 The intra-pulse modulation or coding can be either, Frequency Modulation (FM) or Phase Modulation (PM).

2.2 FREQUENCY MODULATION (FM)

2.2.1 The Frequency Modulation applied can be linear, non-linear or time-frequency coded.

2.2.2 A typical Linear Frequency Modulation in radar is called Chirp. The transmitting pulse has a linear FM waveform and the receiver has compression filters which are simply dispersive delay lines with a delay. The delay has a linear function of the frequency. The compression filter allows the end of the pulse to „catch up" to the beginning, and produces a narrower output pulse with higher amplitude. The output of the LFM consists of the compressed pulse accompanied by side-lobes at other ranges. These time side-lobe levels are an important factor when specifying the PCR and therefore the time side-lobes are reduced to an acceptable level with amplitude weighting.

2.2.3 The figures below show an example of the Chirp-down and Chirp-up.

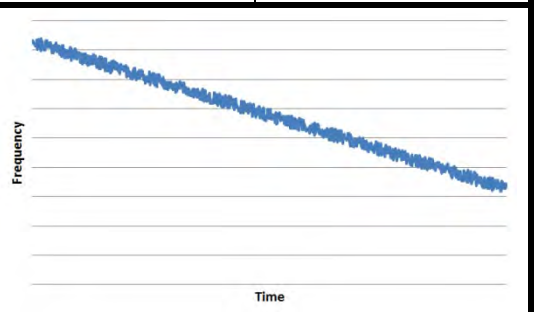
Pulse compression type	Frequency			Phase	
	Continuous		Stepped	Biphase	Polyphase
	Linear		Nonlinear	Polytime	
	Symmetric		**Asymmetric**		
Carrier frequency	F_C	9700-9800	MHz		
Pulse width	PW	2	µs		
Pulse width - compressed	PW_C	0.005	µs		
Pulse compression ratio	PCR	400:1	-		
Bandwidth	B	100	MHz		
Frequency slope	α	-50	MHz/µs		
Down frequency	f1	9800	MHz		
Up frequency	f2	9700	MHz		
Number of segments	n	1	-		
Segment length	L	2	µs		
Code sequence	-				
Number of phase states		Continuous	-		
Number of phase changes		Continuous	-		
Basic phase step	Δ_p	Continuous	°		
Number of frequencies	M_f	Continuous	-		
Frequency separation	Δf	Continuous	MHz		

Figure 1 – Linear Frequency Modulation Chirp-down

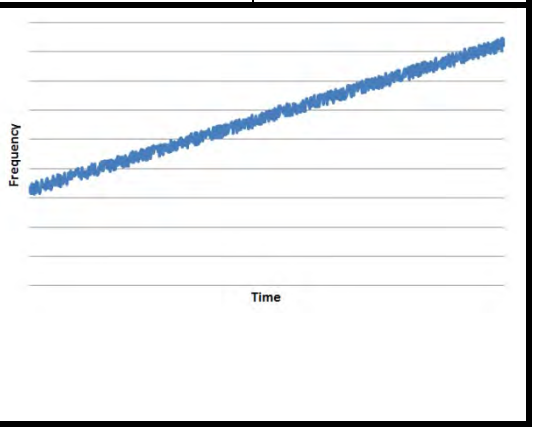
Pulse compression type	Frequency			Phase	
	Continuous		Stepped	Biphase	Polyphase
	Linear		Nonlinear	Polytime	
	Symmetric		**Asymmetric**		
Carrier frequency	F_C	9500-9900	MHz		
Pulse width	PW	5	µs		
Pulse width - compressed	PW_C	0.0025	µs		
Pulse compression ratio	PCR	2000:1	-		
Bandwidth	B	400	MHz		
Frequency slope	α	80	MHz/µs		
Down frequency	f1	9500	MHz		
Up frequency	f2	9900	MHz		
Number of segments	n	1	-		
Segment length	L	5	µs		
Code sequence	-				
Number of phase states		Continuous	-		
Number of phase changes		Continuous	-		
Basic phase step	Δ_p	Continuous	°		
Number of frequencies	M_f	Continuous	-		
Frequency separation	Δf	Continuous	MHz		

Figure 2 Linear Frequency Modulation Chirp-up

2.2.4 A Non-Linear Frequency Modulation has the advantage of reducing the side-lobe levels of the compressed pulse without using amplitude weighting as applied in Linear Frequency Modulation. The non-linear FM waveform is designed to provide the desired amplitude spectrum.

2.2.5 The figure below shows an example of a non-linear symmetrical frequency

modulation.

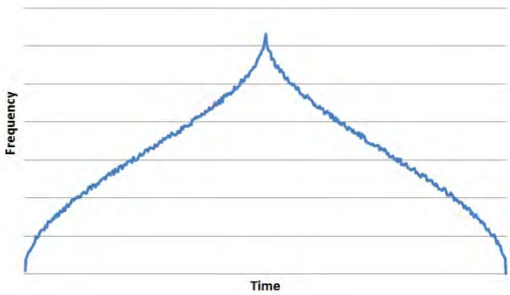
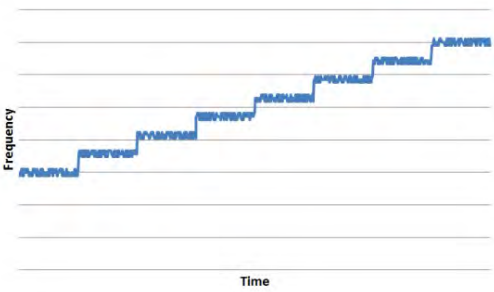
Pulse compression type	**Frequency**			Phase	
	Continuous		Stepped	Biphase	Polyphase
	Linear		**Nonlinear**	Polytime	
	Symmetric		Asymmetric		
Carrier frequency	F_C	9550-9552	MHz		
Pulse width	PW	70	µs		
Pulse width - compressed	PW_C	0.5	µs		
Pulse compression ratio	PCR	140:1	-		
Bandwidth	B	2	MHz		
Frequency slope	α	arccosinal	MHz/µs		
Down frequency	f1	9550	MHz		
Up frequency	f2	9550	MHz		
Number of segments	n	1	-		
Segment length	L	70	µs		
Code sequence	-				
Number of phase states		Continuous	-		
Number of phase changes		Continuous	-		
Basic phase step	Δ_p	Continuous	°		
Number of frequencies	M_f	Continuous	-		
Frequency separation	Δf	Continuous	MHz		

Figure 3 – Non-linear Frequency Modulation

2.2.6 In time-frequency-coded waveforms a relatively long pulse of length τ' is divided into N sub-pulses τ1…N with each pulse at a different frequency. Each group of N sub-pulses is called a burst. Generally, the frequencies are equally spaced, and the pulses are of the same amplitude. If the frequencies are monotonically increasing or decreasing, the waveform is simply a stepped approximation to a intra-pulse modulation and pulse compression using linear frequency modulation (LFM).

2.2.7 The figure below shows an example of a stepped linear frequency modulation with 8 frequencies.

Pulse compression type	Frequency			Phase	
	Continuous		**Stepped**	Biphase	**Polyphase**
	Linear		Nonlinear	Polytime	
	Symmetric		**Asymmetric**		
Carrier frequency	F_C	5900-5920	MHz		
Pulse width	PW	3.2	µs		
Pulse width - compressed	PW_C	0.05	µs		
Pulse compression ratio	PCR	64:1	-		
Bandwidth	B	20	MHz		
Frequency slope	α	stepped	MHz/µs		
Down frequency	f1	5900	MHz		
Up frequency	f2	5920	MHz		
Number of segments	n	64	-		
Segment length	L	0.05	µs		
Code sequence	0 , -3.5 , -7 , -10.5 , -14 , -17.5 , -21 , -24.5 , 0 , -2.5 , -5 , -7.5 , -10 , -12.5 , -15 , -17.5 , 0 , -1.5 , -3 , -4.5 , -6 , -7.5 , -9 , -10.5 , 0 , -0.5 , -1 , -1.5 , -2 , -2.5 , -3 , -3.5 , 0 , 0.5 , 1 , 1.5 , 2 , 2.5 , 3 , 3.5 , 0 , 1.5 , 3 , 4.5 , 6 , 7.5 , 9 , 10.5 , 0 , 2.5 , 5 , 7.5 , 10 , 12.5 , 15 , 17.5 , 0 , 3.5 , 7 , 10.5 , 14 , 17.5 , 21 , 24.5				
Number of phase states	M_p	43 (13)	-		
Number of phase changes		64			
Basic phase step	Δ_p	45	°		
Number of frequencies	M_f	8	-		
Frequency separation	Δf	2,86	MHz		



(Phase peaks occur in real signal analysis)

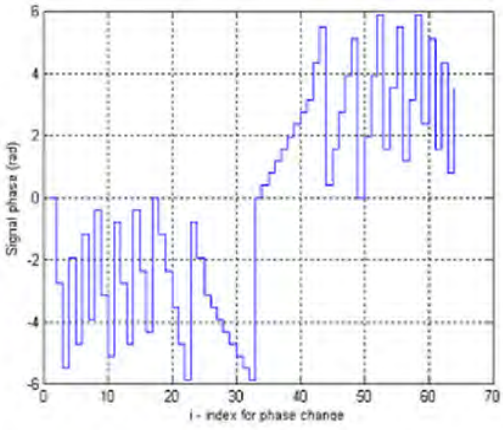


Figure 4 – Stepped Linear Frequency Modulation

2.2.8 Notice that in each frequency step there are 8 samples with a different phase. (See paragraph Phase Modulation).

2.2.9 Costas code is a time frequency-coded waveform which consists of a burst of contiguous un-coded pulse waveforms. Each with a different frequency selected from a finite set of equally spaced frequencies that are processed coherently.

2.2.10 Costas codes have near ideal range and Doppler side-lobe behavior providing both unambiguous Doppler and range information. The order in which the frequencies are generated greatly influences the nature of the ambiguity function of the burst.

2.2.11 The figure below shows an example of the a non-linear frequency modulation with 5 different frequencies (Costas code 5)

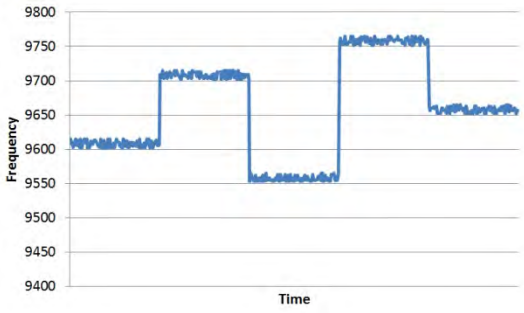
Pulse compression type	Frequency			Phase	
	Continuous		**Stepped**	Biphase	Polyphase
	Linear		**Nonlinear**	Polytime	
	Symmetric		**Asymmetric**		
Carrier frequency	F_C	9550-9750	MHz		
Pulse width	PW	1	µs		
Pulse width - compressed	PW_C	0.04	µs		
Pulse compression ratio	PCR	25:1	-		
Bandwidth	B	25	MHz		
Frequency slope	α	stepped	MHz/µs		
Down frequency	f1	9555	MHz		
Up frequency	f2	9560	MHz		
Number of segments	n	5	-		
Segment lenght	L	0.2	µs		
Code sequence	2,4,1,5,3				
Number of phase states	M_p	-	-		
Number of phase changes					
Basic phase step	Δ_p	0	°		
Number of frequencies	M_f	5	-		
Frequency separation	Δf	5	MHz		

Figure 5 – Non-Linear Frequency Modulated (Costas code 5)

Frequencies in the subpulse are changed in a prescribed manner. Position of each frequency step defines sidelobes after filtering.

A pulse of length T is divided into M contiguous subpulses, where M is level of the code.

The frequency of each subpulse is selected from M contiguous frequencies.

The frequencies are separated by the reciprocal of the subpulse, $\Delta f = \frac{M_f}{PW}[Hz]$

There are M different frequencies, the pulse compression ratio is $B \cdot PW = M^2$

2.3 PHASE MODULATION (PM)

2.3.1 In phase modulated waveforms the long pulse is sub-divided into a number of shorter sub-pulses. Each sub-pulse corresponds with a range bin. The sub-pulses are of equal time duration and transmitted with a particular phase. The phase of each sub-pulse is selected in accordance with a phase code. The most widely used type of phase coding is binary coding.

2.3.2 The figure below shows the bi-phase modulated waveform for the 13 bit Barker code.

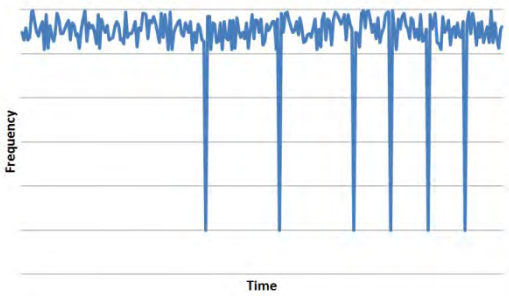
Pulse compression type	Frequency			Phase	
	Continuous		Stepped	**Biphase**	Polyphase
	Linear		Nonlinear	Polytime	
	Symmetric		Asymmetric		
Carrier frequency	F_C	9600	MHz		
Pulse width	PW	1.3	µs		
Pulse width - compressed	PW_C	0.1	µs		
Pulse compression ratio	PCR	13:1	-		
Bandwidth	B	10	MHz		
Frequency slope	α	-	MHz/µs		
Down frequency	f1	9600	MHz		
Up frequency	f2	9600	MHz		
Number of segments	n	13	-		
Segment length	L	0.1	µs		
Code sequence	1 , 1 , 1 , 1 , 1 , 0 , 0 , 1 , 1 , 0 , 1 , 0 , 1				
Number of phase states		2	-		
Number of phase changes		6			
Basic phase step	Δ_p	180	°		
Number of frequencies	M_f	1	-		
Frequency separation	Δf	-	MHz		

Figure 6 – Bi-Phase modulated waveform (13 bit Barker code)

2.3.3 Barker codes exhibit very low side-lobe performance (Barker condition) and have been found consisting of 2 to 13 bits as shown on table below. (“1” represents zero phase shift and “0“ represents 180° phase shift)

Length	Sequence	
2	1 0	0 1
3	1 1 0	
4	1 0 1 1	1 0 0 0
5	1 1 1 0 1	
7	1 1 1 0 0 1 0	
11	1 1 1 0 0 0 1 0 0 1 0	
13	1 1 1 1 1 0 0 1 1 0 1 0 1	

Table 1 – Barker codes

2.3.4 Other bi-phase modulated waveforms are Compound Barker codes and Golay Complementary code.

2.3.5 Compound Barker codes are used to obtain greater lengths. One way to obtain a longer code having lower side-lobe level is by nesting two Barker codes using Kronecker product.

2.3.6 For example a 35-bit compound Barker code is generated by taking the Kronecker tensor product of 5-bit and 7-bit Barker codes and the resultant code is shown in the figure below.

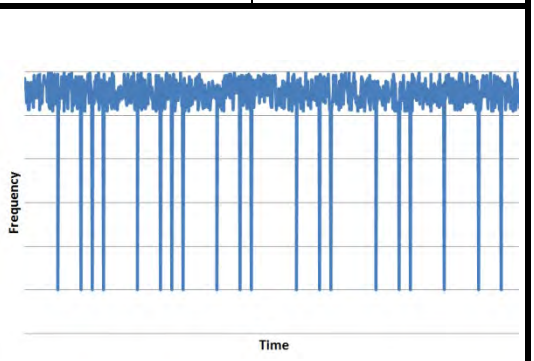
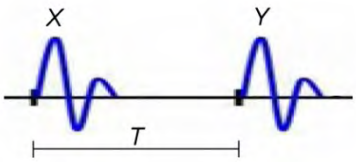
Pulse compression type	Frequency			Phase	
	Continuous		Stepped	**Biphase**	Polyphase
	Linear		Nonlinear	Polytime	
	Symmetric		Asymmetric		
Carrier frequency	F_C	9050	MHz		
Pulse width	PW	3.5	µs		
Pulse width - compressed	PW_C	0.1	µs		
Pulse compression ratio	PCR	35:1	-		
Bandwidth	B	10	MHz		
Frequency slope	α	-	MHz/µs		
Down frequency	f1	9050	MHz		
Up frequency	f2	9050	MHz		
Number of segments	n	35	-		
Segment length	L	10	µs		
Code sequence	1 , 1 , 1 , 0 , 0 , 1 , 0 , 1 , 1 , 1 , 0 , 0 , 1 , 0 , 1 , 1 , 1 , 0 , 0 , 1 , 0 , 0 , 0 , 0 , 1 , 1 , 0 , 1 , 1 , 1 , 1 , 0 , 0 , 1 , 0				
Number of phase states		2	-		
Number of phase changes		17			
Basic phase step	Δ_p	180	°		
Number of frequencies	M_f	1	-		
Frequency separation	Δf	-	MHz		

Figure 7 – Compound Barker code 35 bit

2.3.7 Golay complementary codes (X and Y) are pairs of binary codes, belonging to a bigger family of signals called complementary pairs, which consist of two codes of the same length N whose autocorrelation functions have side-lobes equal in magnitude but opposite in sign. The sum of autocorrelation functions of complementary sequences is a delta function, which is an ideal autocorrelation for many applications like radar pulse compression and spread spectrum telecommunications.

2.3.8 In the figure below the waveforms coded by Golay pairs X and X are transmitted over two Pulse Repetition Intervals (PRIs) T.



2.3.9 The characteristic of the Golay complementary codes (X and Y) is shown in the figure below.

Pulse compression type	Frequency			Phase	
	Continuous		Stepped	**Biphase**	Polyphase
	Linear		Nonlinear	Polytime	
	Symmetric		Asymmetric		
Carrier frequency	F_C	9800	MHz	X	
Pulse width	PW	8	µs		
Pulse width - compressed	PW_C	1	µs		
Pulse compression ratio	PCR	8:1	-		
Bandwidth	B	1	MHz		
Frequency slope	α	-	MHz/µs		
Down frequency	f1	9800	MHz		
Up frequency	f2	9800	MHz		
Number of segments	n	8	-		
Segment length	L	1	µs		
Code sequence	1 , 1 , 1 , -1 , 1 , 1 , -1 , 1 (X) And 1 , 1 , 1 , -1 , -1 , -1 , 1 , -1 (Y)				
Number of phase states		2	-		
Number of phase changes		4 and 3	-		
Basic phase step	Δ_p	180	°		
Number of frequencies	M_f	1	-		
Frequency separation	Δf	-	MHz		

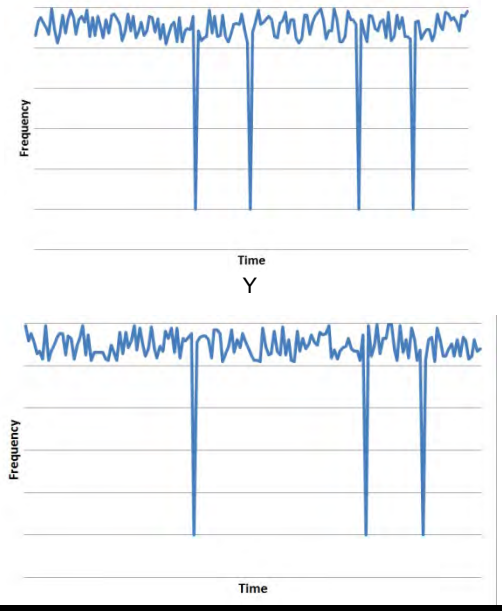


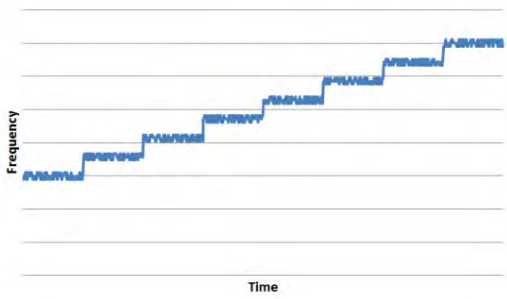
Figure 8 - Golay complementary (X and Y) codes

2.3.10 Other Phase Modulations are based on Polyphase codes such as Frank, P1, P2, P3 and P4.

2.3.11 The Frank code waveform is derived from a step approximation to a Linear Frequency Modulation using N frequency steps and N samples per frequency. Hence the length of Frank code is N2. The Frank coded waveform consists of a constant amplitude signal whose carrier frequency is modulated by the phases of the Frank code.

2.3.12 The Frank code 8 waveform for 64 phase changes within 8 frequencies is shown in the figure below.

Pulse compression type	Frequency			Phase	
	Continuous		**Stepped**	Biphase	**Polyphase**
	Linear		Nonlinear	Polytime	
	Symmetric		**Asymmetric**		
Carrier frequency	F_C	1330-1331	MHz		
Pulse width	PW	64	µs		
Pulse width - compressed	PW_C	1	µs		
Pulse compression ratio	PCR	64:1	-		
Bandwidth	B	1	MHz		
Frequency slope	α	stepped	MHz/µs		
Down frequency	f1	1330	MHz		
Up frequency	f2	1331	MHz		
Number of segments	n	64	-		
Segment length	L	1	µs		
Code sequence	0, 0 , 0 , 0 , 0 , 0 , 0 , 0 , 0 , 0 , 1 , 2 , 3 , 4 , 5 , 6 , 7 , 0 , 2 , 4 , 6 , 8 , 10 , 12 , 14 , 0 , 3 , 6 , 9 , 12 , 15 , 18 , 21 , 0 , 4 , 8 , 12 , 16 , 20 , 24 , 28 , 0 , 5 , 10 , 15 , 20 , 25 , 30 , 35 , 0 , 6 , 12 , 18 , 24 , 30 , 36 , 42 , 0 , 7 , 14 , 21 , 28 , 35 , 42 , 49					
Number of phase states	M_p	26 (7)	-		
Number of phase changes		64			
Basic phase step	Δ_p	45	°		
Number of frequencies	M_f	8	-		
Frequency separation	Δf	0,143	MHz		



(Phase peaks occur in real signal analysis)

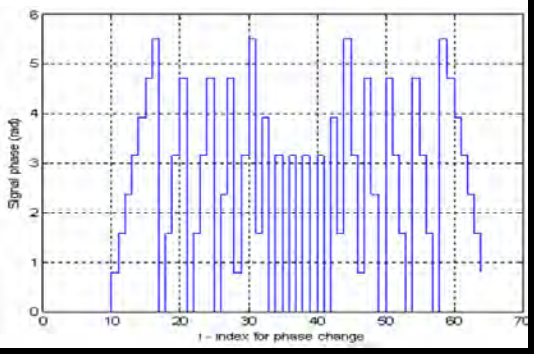


Figure 9 - Frank code 8 waveform

2.3.13 The first N samples of the code have zero phase. The second N samples start with zero phase and increase with a phase value of 2π/N from sample to sample.

The phase of i-th sample of j-th frequency step is given by:

$$\Phi i,j = \frac{2\pi}{N}(i-1)(j-1),$$

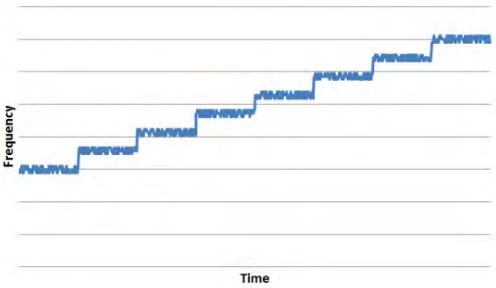
where i = (1; 2; …; N) and j = (1; 2; …; N)

The Frank code in N × N matrix form is given on the picture (left), where the number in matrix (code sequence in main table) represent the multiplying coefficient with the basic phase step 2π/N.

0	0	0	0 . . .	0
0	1	2	3 . . .	(N-1)
0	2	4	6 . . .	2(N-1)
0	3	6	9 . . .	3(N-1)
.				
.				
0	(N-1)	. . .		$(N-1)^2$

2.3.14 Other Poly-phase coded waveforms using a derived step approximation to an LFM waveform are P1, P2, P3 and P4 coded waveforms.

2.3.15 An example of the P1 code 8 waveform is shown in the figure below.

Pulse compression type	**Frequency**			**Phase**	
	Continuous		**Stepped**	Biphase	**Polyphase**
	Linear		Nonlinear	Polytime	
	Symmetric		**Asymmetric**		
Carrier frequency	F_C	5900-5920	MHz		
Pulse width	PW	3.2	µs		
Pulse width - compressed	PW_C	0.05	µs		
Pulse compression ratio	PCR	64:1	-		
Bandwidth	B	20	MHz		
Frequency slope	α	stepped	MHz/µs		
Down frequency	f1	5900	MHz		
Up frequency	f2	5920	MHz		
Number of segments	n	64	-		
Segment length	L	0.05	µs		
Code sequence	0 , -3.5 , -7 , -10.5 , -14 , -17.5 , -21 , -24.5 , 0 , -2.5 , -5 , -7.5 , -10 , -12.5 , -15 , -17.5 , 0 , -1.5 , -3 , -4.5 , -6 , -7.5 , -9 , -10.5 , 0 , -0.5 , -1 , -1.5 , -2 , -2.5 , -3 , -3.5 , 0 , 0.5 , 1 , 1.5 , 2 , 2.5 , 3 , 3.5 , 0 , 1.5 , 3 , 4.5 , 6 , 7.5 , 9 , 10.5 , 0 , 2.5 , 5 , 7.5 , 10 , 12.5 , 15 , 17.5 , 0 , 3.5 , 7 , 10.5 , 14 , 17.5 , 21 , 24.5				
Number of phase states	M_p	43 (13)	-		
Number of phase changes		64			
Basic phase step	Δ_p	45	°		
Number of frequencies	M_f	8	-		
Frequency separation	Δf	2,86	MHz		

(Phase peaks occur in real signal analysis)

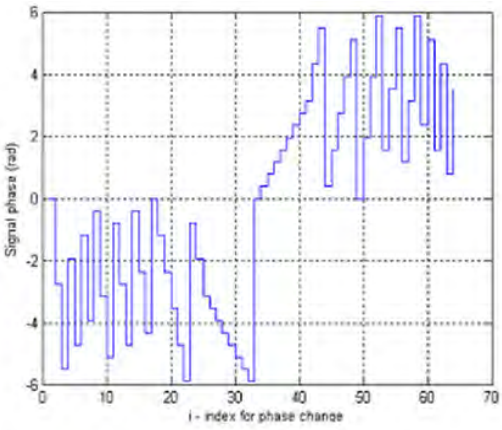


Figure 10 – P1 code 8 waveform

2.3.16 The P1 code is derived from a step approximation to an LFM waveform using N frequency steps and N samples per frequency. The phase of the i-th sample of the j-th frequency of a P1 code is given:

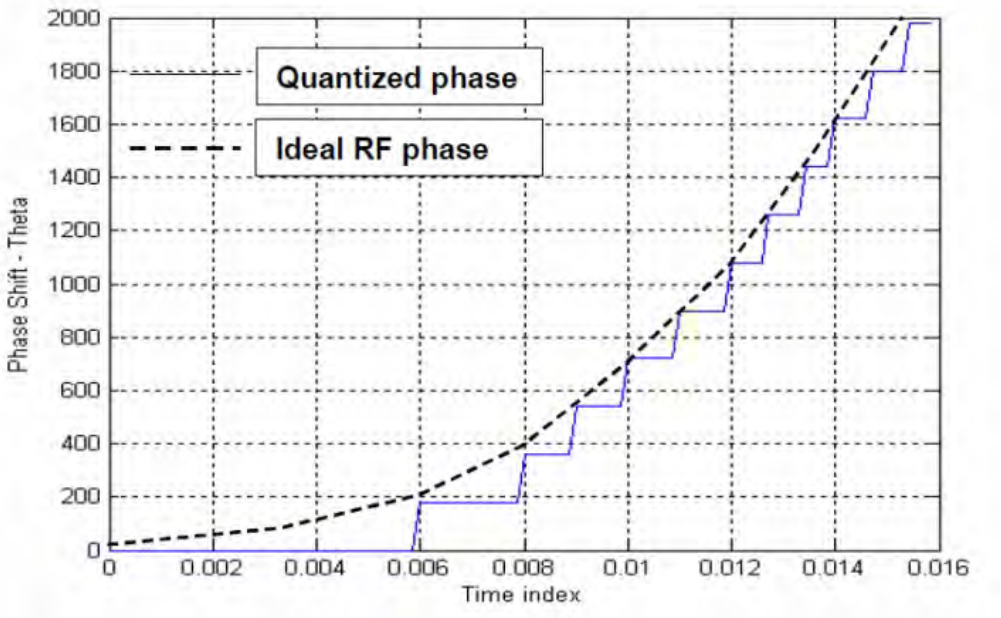
$$\Phi i,j = -\frac{\pi}{N}[N-(2j-1)]\cdot[(j-1)N+(i-1)],$$

where i = (1; 2; …; N), and j = (1; 2; …; N).

Code sequence in the main table represents the multiplying coefficient with the basic phase step 2π/N.

2.4 POLY TIME PHASE CODE

2.4.1 The poly time phase code is developed by letting the phase change approximate a stepped–frequency or linear frequency modulation waveform. The difference is that the sub-code period is not uniform in size. That is, in the previous signals, the size of the phase step varies as needed to approximate the underlying waveform and the time spent at any given phase state is a constant.



2.4.2 Four types of polytime waveforms exist. The first two variants of polytime coded waveforms, denoted T1(n) and T2(n) where n is the number of phase states, can be generated using the stepped frequency model to approximate the underlying waveform

2.4.3 The T3(n) and T4(n) polytime waveforms are approximations of a linear frequency modulation model. Increasing the number of phase states increases the quality of the polytime approximation to the underlying waveform, but it also reduces the time spent at any given phase state and, therefore, complicates the generation of the waveform.

2.5 OTHER CODES

2.5.1 Other codes of interest are:

- Polyphase Barker code
- Complementary codes with more than two impulses.
- Ipatov code.

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PROVIDE FUNCTIONAL SERVICES FOR ELECTRONIC WARFARE – INCREMENT 1

NATO Emitter Database Next Generation (NEDB-NG)

BOOK II – PART IV – ANNEX A4

User Requirements

NATO Emitter Database – Next Generation

User Requirements

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[1] MC64/10

[2] JEWCS MoU MC486/1

[3] AJP 3.6 B

[4] STANAG 6009, Edition 3

[5] NEDB Manuals, Edition 3 part 1-5

[6] NATO Security Manuals C-M(2002)49-COR8, AC/35-D/1040-REV3, AD 70-1

[7] Project Baseline Document for CP 9C0107/ Project 0IS03083 “Provide Functional services for Command and Control of ELECTRONIC WARFARE” – INCREMENT 1

[8] STANAG 4174 Edition 3 – Allied Reliability and Maintainability Publications

[9] NATO CORE METADATA SPECIFICATION (NCMS - AC/322-D(2014)0010)

1. INTRODUCTION

1.1 Background Information

The NATO Emitter Database (NEDB) is a set of MS-Access applications currently used by NATO Nations, NATO Joint Electronic Warfare Core Staff (JEWCS) and EW communities within NATO. It comprises mainly of the **NEDB** (radar, platform and location information), the **NEDB-EO** (electro-optical emitters, platform and location information), an "**Active Items**" application (tasking system), and some quality control ancillary applications. The objective of these databases is to ensure exchange of parametric and other data on NATO and non NATO electromagnetic emitters, between the NATO Nations and Commands. There is a master database maintained by JEWCS; based upon a fixed cycle, it is periodically updated by Nations and a new copy is then sent to each Nation.

Capability package (CP) 9C0107 is looking into how to enhance Command and Control of NATO operations. CP 9C0107 consists of several sub projects, project 0IS03083 being one of them: Functional services for Command and Control of Electronic Warfare. This document is addressing the user requirements for NEDB Next Generation (NEDB-NG) for a software development contract under project 0IS03083.

Developing new software requires a close cooperation between the users and the contractor. NEDBAG have mandated a NEDB-NG Project Working Group with the task to develop the NEDB-NG and monitor the project to ensure that the products meet the requirements, within the guidelines agreed by NEDBAG. The JEWCS NEDB Section Chief will coordinate with the Project Manager and be responsible for coordination of all inputs between the NEDB PWG and NCIA throughout the procurement process.

Funding for maintenance and upgrades throughout the lifetime of the NEDB-NG must be allocated to the project.

More information on the current and future situations is given in paragraph 2. Additional information on the database will be made available to the bidders upon request. The current version of the NEDB is available on the NATO secret wide area network (NS WAN) at:
http://workspace.jewcs.nato.int/JEWCS/J2/NEDB/default.aspx.

1.2 Scope of the document

1.2.1 General

This document contains the user requirements and technical specifications for the development of a new Web-based architecture to replace the current NEDB application. It has been developed by NATO countries contributing to the current NEDB.

With this project, NATO EW community intends to migrate to a Service Oriented Architecture (SOA) framework, and to upgrade the data models to be able to cope with future complex systems, including communication systems in accordance with recent changes in NATO EW policies.

The new software must also allow seamless exchange of relevant data with other Communities of Interest (COIs) (to include but not limited to: Spectrum Management (SM), Counter Improvised Explosive Devices (C-IED), and Signal Intelligence (SIGINT).Data provided by other COIs and/or Electronic Order of Battle (EOB) tool following project 0IS03083 can be included in the NEDB database and made available for all NEDB users by utilising NATO Common Electronic Order of Battle (C-EOB) data exchange format.

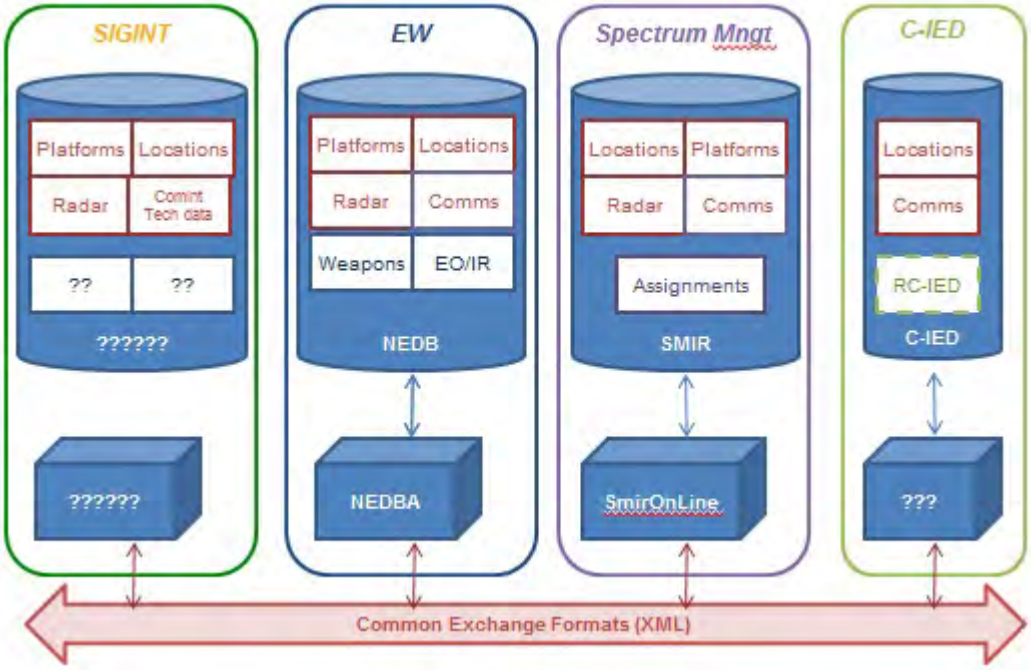

Figure 1: NEDB-NG Data and Communities of Interest

NEDB-NG will consist of two dependent elements; (1) The database storing all data named NEDB and (2) the software application, named NEDB Application (NEDBA), being used to view/administrate/submit/extract information from the database.

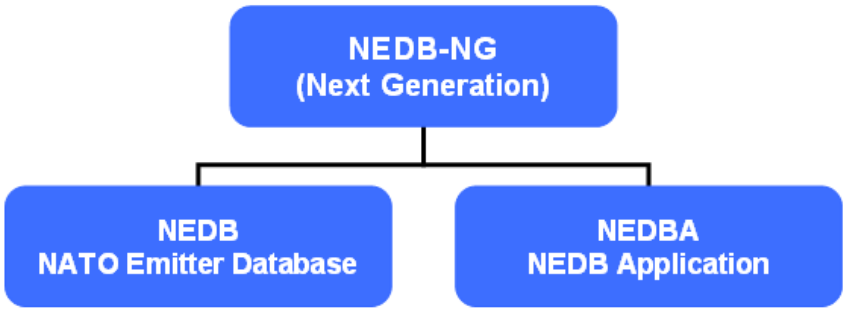

Figure 2: NEDB-NG Elements

1.2.2 Structure of the document:

All user requirements agreed by the NEDBAG are reflected in the Work Packages (WPs), or in the general requirements (paragraph 2.3). The user requirements are structured into WPs to facilitate the understanding of the relationship between the database and the application (tools).

A summary of the work packages is presented in paragraph 1.3. Paragraph 1.4 contains general requirements for bidders. Paragraph 1.5 describes how the user requirements have been grouped with a numbering system allowing easy cross-reference. All acronyms used in the document (except widely accepted ones) are explained in paragraph 1.6. Paragraph 2 presents an overview of the current and future systems, the user types and privileges as well as general user requirements not directly connected to any WP. Paragraph 3 presents each WP in detail.

1.2.3 Terminology

Throughout the text, as the requirements are being listed the word *must* implies that the requirement is mandatory. The word *should* implies that the requirement is optional, but recommended. The company that will get the bid is called the contractor throughout the document.

1.3 Work Packages

The development of NEDB-NG is divided into eleven Work Packages (WPs). A short overview of the WPs is given here and will be detailed in paragraph 3. The figure below summarises the expected relationships between the WPs:

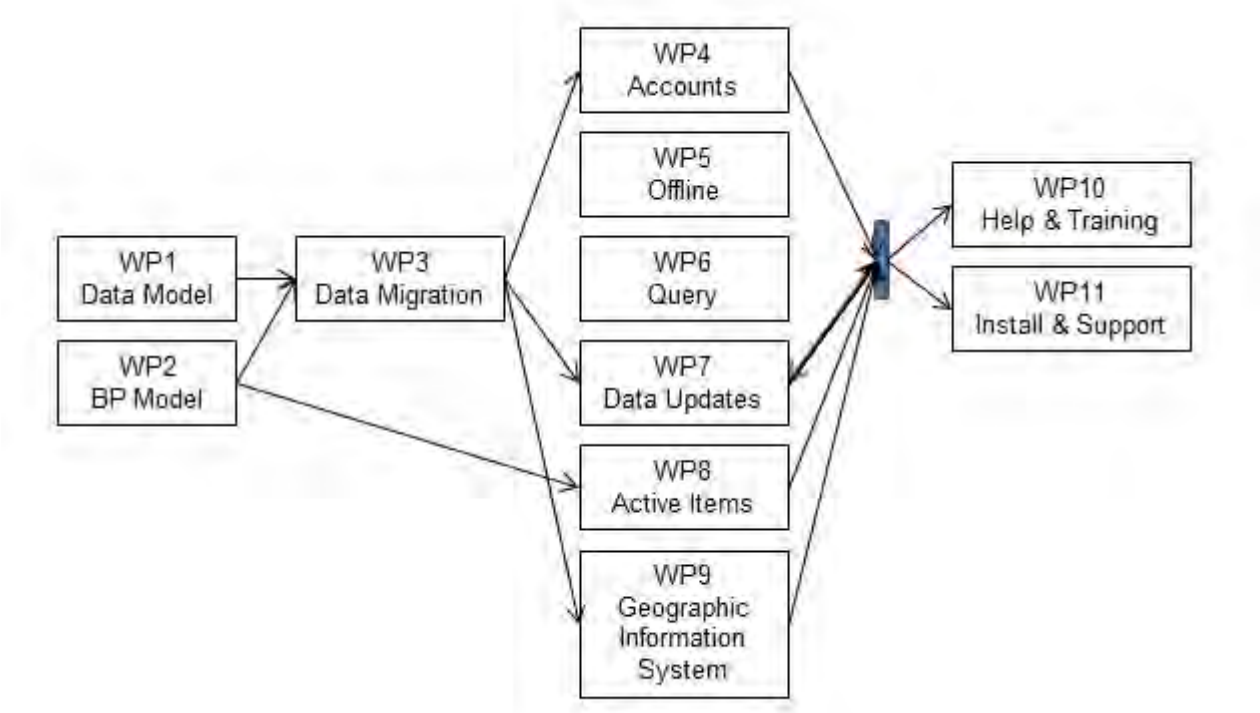

Figure 3: Relations between WPs

- WP1: Analysis and Modelling NEDB (see paragraph 3.1)
- WP2: Analysis and Modelling NEDBA (see paragraph 3.2)
- WP3: Data Migration (see paragraph 3.3)
- WP4: Authentication & Account Management (see paragraph 3.4)

- WP5: Offline functionality (see paragraph 3.5)
- WP6: Data Query functionality (see paragraph 3.6)
- WP7: Data Updates (see paragraph 3.7)
- WP8: Active Items (see paragraph 3.8)
- WP9: Geographic Information System (see paragraph 3.9)
- WP10: Online Help and Training Package (see paragraph 3.10)
- WP11: Installation and Support (see paragraph 3.11)

1.4 Requirements for the Bids

Both the technical and financial proposals must clearly reflect the User Requirements NEDB-NG (this document).

The Technical Proposal will include:

a. The proposed functional/technical solutions for each WP.

b. A Project Management Plan (PMP) which will contain the estimated man-days workload broken down by WP and for each function within each WP. The reason is to allow negotiation on the exact functions to be implemented, according to the initial budget and possible changes in scope during the WP1.

c. The proposed milestones for project reviews and acceptance of the deliverables.

d. The CV of the members of the team foreseen to work on the project.

e. Security certificate showing that the bidder facilities and all personnel foreseen for the execution of the contract are cleared up to NATO Secret, since most of the material related to the NEDB is classified at that level.

The Technical Bids will be evaluated:

- To the extent which the solution fulfils Mandatory and Optional requirements
- For robustness of proposed technical solutions
- For quality of the PMP, correct evaluation of the tasks and workloads, risk management
- For perceived knowledge of the proposed team to successfully handle the required tasks

1.5 Groups of Requirements

In order to ease the evaluation of proposals and measure the quality of the development, each requirement in this SOW has received a coded number as follows:

- **GFxx** for the General functionality
- **AMxx** for the Analysis and Modelling NEDB (WP1)
- **AAxx** for the Analysis and Modelling NEDBA (WP2)
- **MTxx** for the Data Migration (WP3)
- **AUxx** for the Authentication & Account Management (WP4)
- **OFxx** for the Offline version (WP5)
- **DQxx** for the Data Query functionality (WP6)
- **DSxx** for the Data Updates - Data Submission (WP7)
- **DMxx** for the Data Updates - Database Management (WP7)
- **LOxx** for the Data Updates - Lookups Management (WP7)
- **AIxx** for the Active Items (WP8)
- **TOxx** for the Geographic Information System (WP9)
- **HTxx** for the Online Help and Training Package (WP10)
- **ISxx** for the Installation and Support (WP11)

1.6 Glossary of Terms and Definitions

BPMN	Business Process Management Notation
BEN	Basic Encyclopaedia Number
CAOC	Combined Air operation centre
C-EOB	Common EOB
C-IED	Counter Improvised Explosive Device
COI	Communities of Interest
COP	Common Operational Picture
CP	Capability Package
CV	Curriculum Vitae
DBA	Database Administrator
DBM	Database Manager
DBP	Database Data Provider
DBR	Database Reader
EO	Electro-Optical emitter
EOB	Electronic order of battle
EW	Electronic Warfare
EWCOP	Electronic Warfare Common Operational Picture
GIS	Geographic Information System
IED	Improvised Explosive Devices
JEWCS	Joint Electronic Warfare Core Staff
MSTO	Minimum Safe To Operate
NATO	North Atlantic Treaty Organisation
NCIA	NATO communication and information agency
NEDB	NATO Emitter Database
NEDBA	NEDB Application
NEDBAG	NATO Emitter Database Advisory Group
NEDB-EO	NATO Emitter Database – Electro Optical
NEDB-NG	NATO Emitter database – Next Generation
NEDB-NG PWG	NEDB-NG Project Working Group
NEWWG	NATO Electronic Warfare Working Group
NSN	NATO spot number
NS WAN	NATO Secret Wide Area Network
OS	Operating System
PIN	Place Identification Number
PMP	Project Management Plan
POC	Point Of Contact
RC-IED	Radio Controlled Improvised Explosive Device
RWP	Real World Parameters
SCP	Software Change Proposals
SIGINT	Signal Intelligence
SIR	Software Incident Reports
SM	Spectrum Management
SMADEF-XML	Spectrum Management Allied Data Exchange Format (XML version)
SOA	Service Oriented Architecture
SOW	Statement of Work
SNMG	Standing naval maritime group
SRS	Software Requirement Specifications
STANAG	Standard Agreement
TSEOB	Theatre Specific Electronic Order of Battle
WARM	War Reserved Mode
WP	Work Package
WS	Web Services

2. Description of Current and Future Systems

2.1 Current System Overview

NEDB (Radar and Electro Optical) are two databases, both located and managed by NATO JEWCS NEDB section (called “NEDB Staff” below). They are relational databases developed with MS Access 2000. As of now, NATO JEWCS are using MS Access 2010. National and NATO users are using a replica of these databases on local systems. A detailed outline of relationship hierarchy in these databases will be provided to bidders on request.

The NEDB provides a common numbering system known as NATO Spot Numbers (NSN). This function must be safeguarded in NEDB-NG.

NEDB Staff uses these databases to manage and coordinate parametrical data submitted by NATO nations. NEDB Staff includes all submission from the nations on a monthly basis and publishes an updated version on the NS WAN Web. NEDB Staff ensures that the data quality is in accordance with program settings and NEDB manuals. A simple task management system (“Active Items”) between the nations and JEWCS has also been implemented through the “Pro-Items” application, also based on an MS-Access database.

The current NEDB only provides technical parameters on non-communication emitters, i.e. radar and electro-optical emitters.

There is a User hierarchy defined from (1) a single NEDB Database Manager (DBM), through (2) National Database Administrators (DBAs), down to (3) NEDB/NEDB-EO users (see fig 4). Nations are responsible for submitting changes, updates and deletion of data. NEDB Staff compiles and publishes the updated versions of the database to the Nations and NATO users; NEDB Staff also coordinates Software Incident Reports (SIR) and Software Change Proposals (SCP) with the contractor/support.

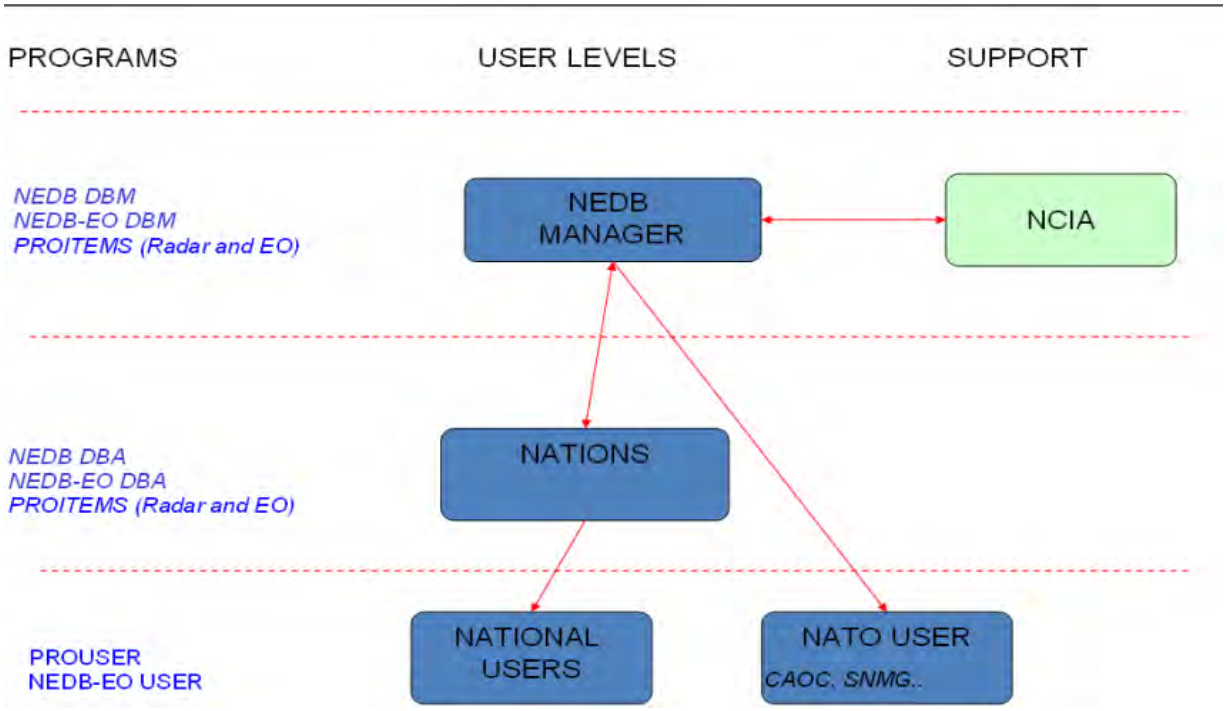

Figure 4: Programs and overall Interaction NEDB

2.2 NEDB-NG Overview

2.2.1 General

Upgrading the data model and providing (near) real-time functionalities of the NEDB-NG is important in order to enhance NATO's ability to command and control EW operations. NEDB-NG is one of the main outputs of project 0IS03083.

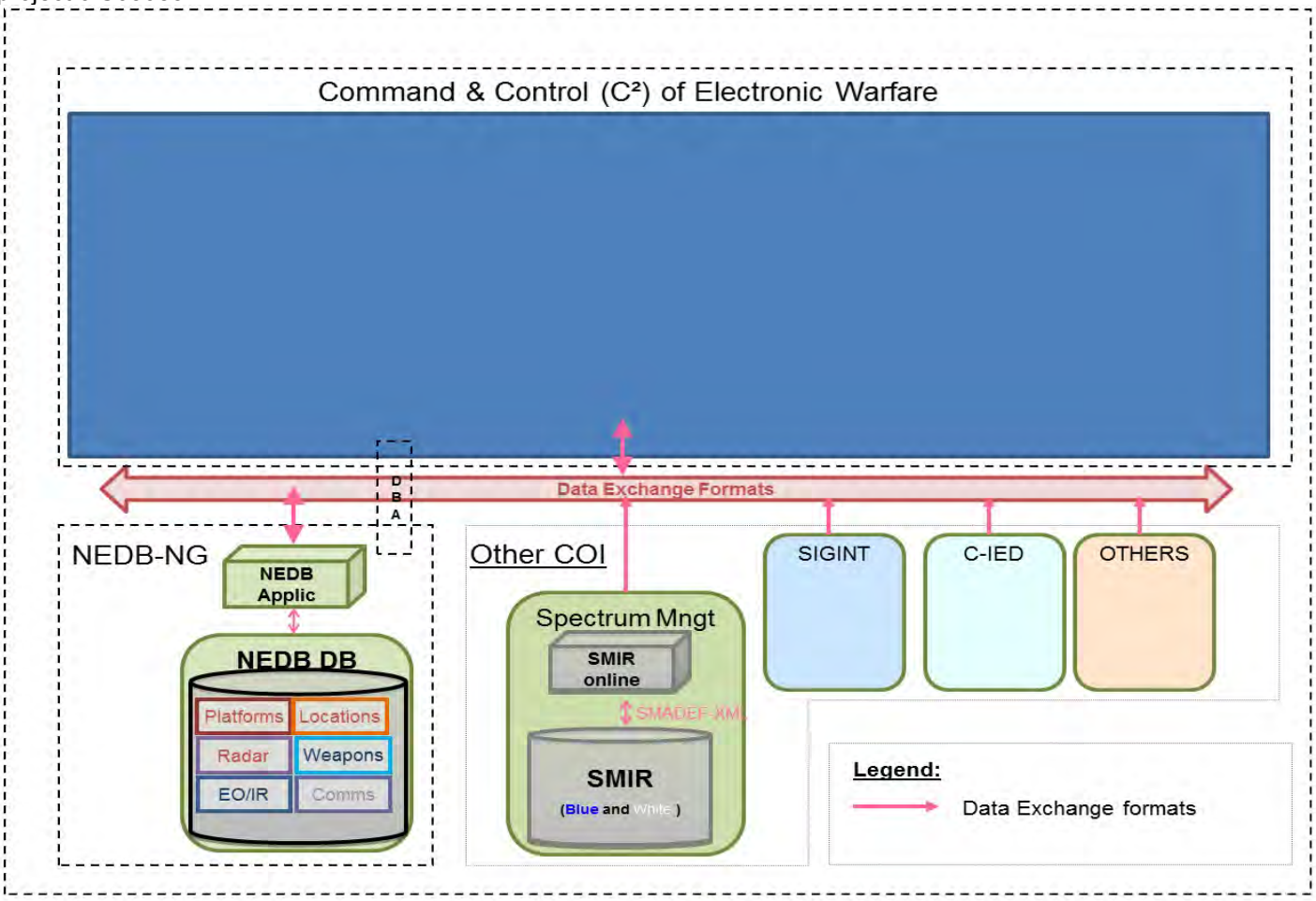

Figure 5: NATO EW communities of interest and data flow

In order to allow several customers to share the NEDB-NG data within a Nation / Command, NEDB-NG must be a multi-user system with locking and sharing mechanisms. However, NEDB-NG must also have offline functionality. A standalone workstation must be able to maintain data with the ability to upload/download changes to/from the NEDB-NG.

NEDB-NG must be able to describe any type of complex electromagnetic emitter (e.g. NEDB-NG must incorporate and present parametric data from multi band radars and software defined radios). The data structure must respect a logical hierarchy to describe the various objects, and DBAs must be able to create any object independently of any relationship(s) between objects. Radar Complex emitters are capable of producing intricate pulse trains by combining 2 or more of various modulation types (for instance: multiple PD lengths or different modulations on pulses) and/or scan characteristics during a transmission mode in a timely correlation (sequentially and/or simultaneously).

NEDB-NG shall be able to describe complex comms emitters capable of time, frequency, phase and pulse, spread spectrum, frequency hopping and burst emitters.

NEDB-NG must be able to exchange information with an EOB tool in order to get NEDB updates deemed relevant for the Theatre Specific EOB automatically in an EOB database. Simultaneously, updates relevant for the NEDB must be forwarded as proposals to facilitate DBA inclusion of data in the NEDB.

NEDB-NG must be able to exchange data using NATO C-EOB format. NEDB-NG database and the application should both be able to develop/adapt throughout its lifetime to incorporate future requirements.

The web based architecture will allow the DBAs to update data in the central database in near real time. Comprehensive quality control must be incorporated in the software. The NEDB-NG export functionality must allow objects having a geo-location reference to be displayed in GIS tools.

2.2.2 Users

NEDB-NG will have four levels of users as defined below:

1) Database Manager(s) (DBM), maintaining the NEDB-NG;

2) National Database Administrator(s) (DBA), allowed to submit data to the DBM;

3) Database data Providers (DBP), allowed by each DBA; DBPs submit new data to their DBA

4) Database Readers (DBR), only allowed to query data and produce reports.

2.2.3 Functionality

The functionalities offered to the user and amount of available information differ based upon the level of authorisation (e.g. the DBR will not have access to the management information related to the business process).

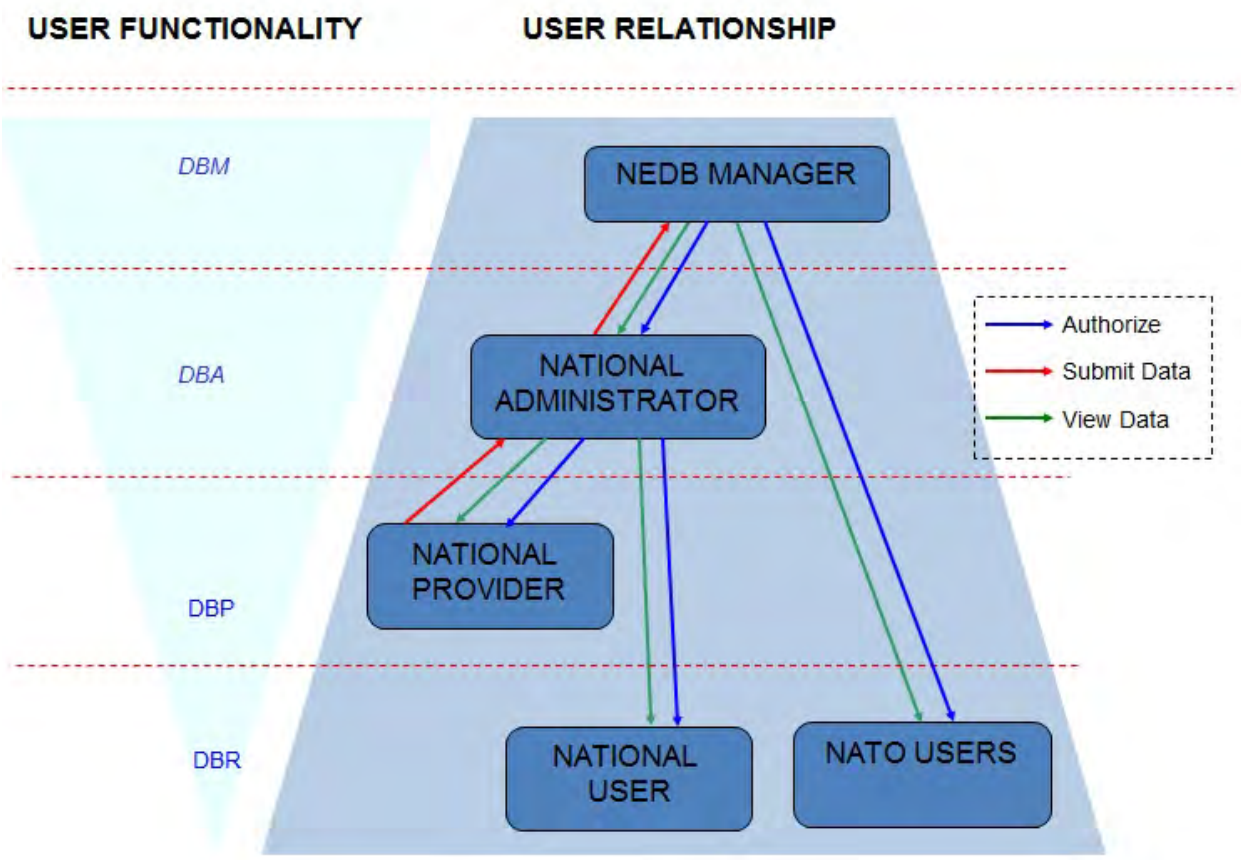

Figure 6: Relationships and functionality

Access to information must follow the current procedures. NEDB-NG privileges for all users are listed in table 1:

Privileges	DBR (reader)	DBP (provider)	DBA (National admin)	DBM
See technical data	YES	YES	YES	YES
See management data	NO	YES	YES	YES
Create reports (e.g. may be used for EOBs)	YES	YES	YES	YES
Create Submissions to NEDB-NG (add, modify, delete)	NO	YES**	YES	YES*
Export data (e.g. from queries)	YES	YES	YES	YES
Read Active item	NO	YES	YES	YES
Create and send an “Active Item”	NO	YES**	YES	YES
Close an “Active Item”	NO	NO	NO	YES
Modify Lookup	NO	NO	NO	YES
Modify expandable lists	NO	YES**	YES	YES*

* DBM submission made on behalf of a DBA

** DBPs will send their submission to the national DBA for consolidation into a single submission from their Nation for final approval by the DBM.

Table 1: NEDB-NG user privileges

The “data submissions” are addition, modification and deletion proposals submitted by a lower echelon to the next higher echelon. A Nation can only modify or delete its own data. These submissions remain “proposed” (and visible only by the submitting chain of command) until the DBM ultimately accept and “publishes” them (the update data becomes visible to all users).

2.3 General requirements for NEDB-NG

This paragraph describes functional requirements not related to a specific WP but generic to the whole development.

GF01 NEDB NG must as a minimum be able to exchange data to and from the database via XML.

GF02 The architecture must ensure that any submission reaches the next higher echelon within a maximum of 6 hours.

GF03 The architecture must ensure that any DBM action in the database is published as soon as possible, within a maximum of 6 hours (e.g. DB replication onto multiple servers if necessary).

GF04 NEDB-NG application must run on NATO baseline.

GF05 NEDB-NG must offer similar layouts and functionalities when accessed through NATO approved Web browsers. The contractor will ensure that browser-neutral technologies are used when developing the software. A top menu will be accessible from all pages.

GF06 All data views must be presented to and agreed by the NEDB-NG Project Working Group.

GF07 NEDB-NG must allow online users specific automatic notification messages and display these notification messages for pending user actions on the home page and provide capability to indicate the message has been read.

GF08 The development must not interfere with the operation of the current NEDB until the NEDB-NG is fully accepted into service.

GF09 NEDB-NG must be available 24/7 via NSWAN for all users.

GF10 NEDB-NG must be able to shut down and reboot without corruption or loss of data in the event of interruption, or failure of the building power supply (i.e. regular auto-save procedures).

GF11 NEDB-NG must comply with all applicable NATO policies, guidelines and standards.

GF12 NEDB-NG must adhere to, and implement, Metadata and metadata structure in accordance with reference 9. The contractor must comply with classification and releasability rules and regulations throughout the procurement process.

GF13 NEDBA user interface, error messages, user manuals, and help files must be in English.

GF14 NEDB-NG must not suffer degradation to the system capability or performance as a result of running internal diagnostic / audit programmes.

GF15 The COTS packages used by the contractor to produce all deliverables must be approved by the Project Manager at the beginning of the project, and a licensed copy of all tools used during the development must be provided to NATO.

GF16 All NEDB-NG modules, setup package, database connections, and documentation, must remain free of any royalty fees and the intellectual property rights must be given to NATO, for free distribution of the entire package or any part of the software to Nations and NATO Commands.

GF17 NEDBA must be scalable and be able to handle a minimum of 100 simultaneous users without degradation of performance.

GF18 All text fields in the man-machine interface must be able to accept copy and paste to and from the clipboard.

GF19 Input forms must offer a “tabbing through” functionality following a logical path (eg min value to max value).

GF20 The NEDB-NG must comply with NATO Certification and Accreditation.

3. Work Packages

3.1 WP1 - Analysis and Modelling NEDB (AM)

3.1.1 Objective

The purpose of this WP is to build a data model for the EW information contained in the database (disregarding information pertaining to the business processes such as data ownership, timestamps and classification, which will be considered under WP2) taking into account:

a) The data contained in the current NEDB and NEDB-EO. The data model must integrate both databases and must be able to contain all current information without any loss of information.

b) The data model must include communication and complex emitters.

3.1.2 Deliverables

a) Draft report and draft description of the data model.

b) Final report and final description of the data model

3.1.3 Requirements

AM01 The data model must integrate current data descriptions and must be able to contain all current information without any loss of information.

AM02 Each data model object type must be independent (Emitter, Platform, Weapon, Antenna, etc) enabling to link all objects, e.g. weapons to platforms without linking the weapons to an emitter.

AM03 NEDB-NG must be able to describe electromagnetic emitters (radar, EO, communications) comprised of complex agile modulations, scan types, methods and modes.

AM04 The data model objects must support “classes” and “instances” (e.g. a frigate class, and its national instances).

AM05 The internal structure of the XML messages, and the logic to convert between messages and database records, should be retrieved from external configuration files to allow updates of the XML format.

AM06 NEDBA must be able to accept new entries, with the capability to prevent duplication and redundancy.

AM07 Standard naming convention should be enforced via "expandable lists of values" in the software.

AM08 Additions/modifications to expandable lists must be done via the same submission process as for other objects (DBP proposes to DBA who submits to DBM who publishes). A newly added entry in a list is immediately usable by its DBP/DBA, but not visible by the other users until the DBM has accepted the submission and published it.

3.2 WP2: Analysis and Modelling NEDBA (AA)

3.2.1 Objective

The purpose of this WP is to analyse the Business Processes to be used by NEDBA, to decide which parts are candidates for developing Web Services, and to develop the SOA concept applied to the NEDBA processes (service contracts, reusability, interactions/orchestration, messaging). This WP will also result in adding fields and tables into the database in order to store business process related information such as data ownership, timestamps and classification.

The current processes are explained in detail in the NEDB manuals. The broad concept of NEDB-NG will generally follow the current NEDB concept. However, in order to exploit emerging technologies, there will be issues where current NEDB business procedures are outdated or inefficient and must be changed. Based upon the current user requirements and NEDB manuals, the contractor will identify and highlight discrepancies between the foreseen NEDB-NG business processes and those of the current NEDB. These changes are to be accepted by the NEDB-NG PWG before the implementation (WP3 onwards).

3.2.2 Deliverables

a) Draft report and draft description of the business processes in Business Process Management Notation (BPMN).
b) Final report and final description of the business processes in BPMN
c) Software Requirement Specifications (SRS)

3.2.3 Requirements

AA01 All records must have creation and modification timestamp.

AA02 All records must have a security classification in compliance with existing NATO and NEDB regulations. A required characteristic of the data fields is that they can be classified individually.

AA03 Candidate processes for utility and application web services must be identified, with the objective of maximising the reusability of services by external applications.

AA04 NEDB-NG shall exploit emerging technologies. Therefore NEDB business procedures are outdated. The contractor will identify and highlight discrepancies between the foreseen NEDB-NG business processes and those of the current NEDB. These changes are to be accepted by the NEDB-NG PWG before the implementation.

AA05 NEDBA must also work as a standalone installation on a local machine (for disconnected users in the field or on a ship)

AA06 NEDB-NG should be independent of OS regional settings, keyboard layout, language and user profiles.

AA07 User configurable views should be stored in NEDBA for every user.

AA08 For all results in tabular format, custom column sorting and positioning must be provided.

AA09 Comprehensive data quality control (formats and consistency between entries) must be incorporated in the software.

AA10 The DBM must be able to update Lookup tables as described in paragraph 3.7.3.3.

AA11 NEDB-NG must have a functionality for DBM to restore any data

AA12 NEDB-NG must have the functionality.to allow user customized notification of changes to the data.

3.3 WP3: Data Migration (MT)

3.3.1 Objective

Within this WP, a data migration procedure will be developed in order to convert all existing data into the new database model. The contractor will be provided with representative data for testing purposes.

3.3.2 Deliverables

Migration procedure must be accepted by NEDB-NG PWG before final implementation.

3.3.3 Requirements

MT01 The contractor must ensure the migration of all existing data from NEDB, NEDB-EO and Active Items to NEDB-NG without any loss of data integrity.

MT02 The migration must provide a log of the conversion, flagging the data which is not compliant with the NEDB-NG quality constraints.

3.4 WP4: Authentication & Account Management (AU)

3.4.1 Objective

The NEDBA will be Web-based and will allow the users to retrieve information from a central database and allow users to submit new information directly using a Web Browser. This WP will produce the basic functionalities of the application, allowing all types of users to connect and to query the database using a set of predefined queries and data views, including master/detail views.

3.4.2 Deliverables

a) Prototypes

b) Final software tool

3.4.3 Requirements

AU01 The users must be authenticated by using a login/password.

AU02 The connection must be secured using the agreed NSWAN protocol and include any known security requirements at the time of contract award.

AU03 Users must submit through the NEDBA a request for login/password to their next higher echelon (DBR and DBP to National DBA) and will be authorised via email.

AU04 DBM and DBAs must have the functionality of reviewing the user login activity.

AU05 DBM and DBAs must have the functionality for creating accounts to their lower echelons (DBM creates DBAs and DBRs; DBAs create DBPs and DBRs).

AU06 The system must lock dormant accounts after 6 months.

AU07 DBM and DBAs must be able to lock and unlock user accounts by changing a flag in the user record in NEDBA.

AU08 The system must automatically send an email to users when their account is locked or unlocked by the system or by the DBM / DBA.

AU09 The NEDB-NG login page must offer a lost password procedure and include a user validation procedure to reset password.

3.5 WP5: Offline functionality (OF)

3.5.1 Objective

NEDB-NG will consist of a mix of NS WAN connected users, users unable to connect to NS WAN and users loosing connectivity while using the software. The objective with this WP is to ensure that all users are able to use the software when connectivity to NS WAN server is impossible without losing the functionality presented in the application.

3.5.2 Deliverables

a) Standalone version prototype

b) Final software tool

3.5.3 Requirements

OF01 A standalone version of NEDB-NG must be developed.

OF02 The standalone version must offer the same capabilities and look-and-feel as the online version. This includes the same logon functionalities as the online version.

OF03 This offline system must use the same web application as the online system, to be installed on a local web server.

OF04 The contractor must indicate the prerequisites (OS version, web server setup) in the installation manual.

OF05 Users logged in as DBP or DBA on the standalone system must be able to create submissions off-line. The application must allow the user to transfer these submissions (additions, deletions and modifications) to the online NEDB-NG:

a) Via the network if the system can be connected to the target network;
b) And- via file(s) exported to any media (CD, external memory etc) to be transferred manually to the target network.

OF06 NEDBA must be able to work as a standalone installation on a local machine or on a local area network; this standalone version must:

a) Be able to load a current update of data as well as LookUp data from the online database on any media (CD, external memory etc);

b) Allow all types of users to connect offline (DBR, DBP, DBA, DBM – see paragraph 2.2.2);

3.6 WP6: Data Query functionality (DQ)

3.6.1 Objective

NEDB-NG needs advanced query functions to enable extraction of the desired data from the database. The application should be capable of exporting the result of the query. Deliverables

a) Prototypes

b) Final software tool

3.6.2 Requirements

DQ01 All NEDB-NG data queries must be stored in a database table. The table will contain at least the query text, a title, a date of creation/modification and originator (author of the query). The available queries will be organized, with 2 top nodes “common” (NEDB-NG provided queries) and “private” (user-built/advanced queries). Under each node, the queries will be grouped by object.

DQ02 The result of a query must be displayed in a grid. A menu option must allow the user to automatically export the tabular data either from the whole grid or from selected rows into a standard format which can be imported in any spreadsheet software tool without any loss of integrity.

DQ03 Results drawn from the database and presented in a grid should be sent to the browser using options to avoid sending too much data at the same time; the user should be able to sort these tabular results locally on one or more of the columns.

DQ04 Query results must only display active records by default. An option will be provided to allow archived (“deleted”) records in query results if selected by DBM, DBA and DBP.

DQ05 The user must be able to export either the full result of a query or selected rows in the grid, to multiple formats including as a minimum XML, doc, docx, xls, xlsx, csv and pdf format,.

DQ06 A “Query Builder” function must allow users to develop their own queries and store them in the NEDBA.

DQ07 During queries of data from NEDB-NG, a security classification based upon the classification of the data and accumulation of data must be provided.

3.7 WP7: Data Updates

3.7.1 Objective

This WP will add the data exchange functionalities to the NEDBA. The authorised users (DBP, DBA) will be able to *submit* deletions, modifications and additions to the next higher echelon. Submitted data will be marked as “proposed” until the DBM has validated the submission.

Some items describing the objects may have a pre-defined set of values (e.g. a country code), or must receive a value from another table (e.g. the name of a site for an assignment), manual or STANAG. All these values must be incorporated and maintained in the Lookup. This WP will also provide privileges for the DBM to *maintain* the lookup tables.

3.7.2 Deliverables

a) Prototypes

b) Final software tool

3.7.3 Requirements

3.7.3.1 Data Submission (DS)

DS01 The data submission functions must be available for the DBP, DBA and DBM.

DS02 The application must automatically validate user data inputs producing error messages concerning formats and data consistency before submission.

DS03 During submissions and maintenance, the DBP or DBA must be able to mark RWP, WARM and refined data. All values must be changed upon the discretion of the owning nation.

DS04 “Bulk upload”-functionality must include a “Comparator tool” to process an incoming data set against the NEDB-NG database, identifying changes, duplications and ambiguities in the data set to enable the execution of “bulk upload” into the database. The Comparator tool must also be able to identify items in the NEDB-NG that are not in the data set for bulk deletion.

DS05 The approval of submissions from Nation's DBP must be exclusively available for the Nation's DBA.

DS06 The final approval of submissions to include data into the NEDB-NG for distribution to all Nations must be exclusively available for the DBM.

DS07 Spreadsheet “Import” functionality: DBP/DBA/DBM must be able to select a pre-defined formatted file (XML, xls, xlsx and csv) and import it in the NEDB-NG.

3.7.3.2 Database Management (DM)

DM01 NEDB NG must be able to archive deleted data and DBM must be able to restore archived data.

DM02 DBM approval: When a submission is committed into the database, the actions must result in the addition, change or deletion of records.

DM03 Scheduled database backup with restore capability must be provided.

DM04 Database integrity mechanisms and error handling for records and sub-records must be implemented to prevent improper actions.

3.7.3.3 Lookups Management (LO)

LO01 Selectable lists of possible values must be used whenever applicable. Rapid navigation/selection within the list should be provided.

LO02 DBM must be able to update Lookup Tables without the assistance of the contractor. The system must be able to generate a message to DBPs and DBAs notifying the changes.

3.8 WP8: Active Items (AI)

3.8.1 Objective

NEDB-NG must include functionality based upon the Active Item process.

3.8.2 Deliverables

a) Prototypes

b) Final software tool

3.8.3 Requirements

AI01 NEDB-NG must include functionality allowing the DBPs, DBAs and DBM to coordinate and keep track of tasks related to the data updates based upon the Active Item process.

AI02 NEDB-NG must enable the DBP, DBA and DBM to create, send, update and delete Active items in order to keep track of the development and history.

3.9 WP9: Geographic Information System (TO)

3.9.1 Objective

GIS services are important to facilitate the use of data submitted to EW databases for planning, coordination and visualisation purposes.

3.9.2 Requirements

It must be possible to export and display NEDB-NG queried data to any NATO GIS both online and offline.

3.10 WP10: Online Help and Training Package (HT)

3.10.1 Objective

This WP will provide the help documentation and a training package which will allow training of national and NATO users.

3.10.2 Deliverables

a) Help documentation in English.

b) Role specific Training packages.

3.10.3 Requirements

HT01 The Contractor must deliver a training solution that provides users the functionality to use and test the application and database without interfering with the live data.

HT02 The training documentation must be accessible from the web portal and standalone clients.

HT03 Training solution must as a minimum include:

-Video based tutorials

-User Manuals for all users (standalone users must be able to have access to the full help within the program)

HT04 NEDB-NG must offer an extensive help accessible through the Help menu and contextual buttons.

HT05 The Help menu must include an item displaying the NEDBA version and POC information.

HT06 Contractor must provide a help systems in English.

HT07 Contractor must provide initial training for 60 people to train all roles. All training aids and documentations must be delivered.

3.11 WP11: Installation and Support (IS)

3.11.1 Objectives

The contractor will install the NEDB-NG on the designated server on the NSWAN and provide support during the operational tests, in order to solve any unforeseen problems. A successful installation of NEDB-NG requires (as has been listed before) no loss of data and that user can submit, access and export data following their privileges.

3.11.2 Deliverables

a) NEDB-NG successfully accredited, approved, installed and tested on the designated NSWAN infrastructure.

b) Standalone NEDB-NG successfully installed and tested on a local computer at the DBM facility.

c) Softcopies of the installation manuals for online and offline systems must be delivered

3.11.3 Requirements

IS01 Contractor must provide operational support for five years to solve any unforeseen problems.

IS02 Contractor must provide minimum hardware and software requirements by critical design review (CDR).

NATO Communications and Information Agency
Agence OTAN d'information et de communication

IFB-CO-14091-EWFS

PROVIDE FUNCTIONAL SERVICES FOR ELECTRONIC WARFARE – INCREMENT 1

NATO Emitter Database Next Generation (NEDB-NG)

BOOK II – PART IV – ANNEX A5

NATO Bi Strategic Commands (Bi-SC) Automated Information Systems (AIS) Interface Requirements

TABLE OF CONTENTS

1. INTRODUCTION

1.1 This document contains a non-functional requirements (NFR) list extracted from the Bi-SC AIS Programme Repository in DOORS and adapted to complement the NFR requirements already available in the SRS (IFB-CO-14091-EWFS-Book II-Part IV-Annex A-SRS).

2. RELIABILITY

2.1 Reliability is defined as the capability of the software product to maintain a specified level of performance when used under specified conditions.

2.2 A failure is defined as an error or cessation in the operation of the software requiring, as a minimum, a restart of the application.

2.3 For services, a failure is characterized by the inability of the Service to perform its operation

2.4 For web-based applications, an error requiring the user to reload the browser shall be considered a failure.

2.5 The Error Handling capability is defined as the ability of the software product to maintain a specified level of performance in cases of software faults or of infringement of its specified interface.

2.6 This section contains the requirements concerning errors, warnings and notifications that users will encounter or be confronted with.

BISCAIS-80	NEDB-NG shall automatically report errors and suggest corrective actions with respect to the creation, change, exchange and storage of data elements, objects and products.
BISCAIS-81	NEDB-NG messages (e.g., error, warning, notification, and informational messages) shall contain initiating module information, context sensitive help and directives on where to find answers and solutions.
BISCAIS-1233	Technical or debug error scripts shall not be acceptable as user feedback information, but shall be made reported and logged automatically.
BISCAIS-82	NEDB-NG shall report errors in context (e.g., given within the same page where they are encountered).

3. ROBUSTNESS

3.1 It is the feature to which a system continues to function properly when confronted with invalid inputs, defect in connected software or hardware components, external attack, or unexpected conditions.

3.2 A system is more robust if it is fault tolerant. Fault tolerance is the ability of a system to continue functioning when part of the system fails. Fault tolerance is achieved by designing the system with a high degree of hardware redundancy. If any single component fails, the redundant component takes its place with no appreciable downtime.

BISCAIS-new	If the system fails before the user saves the file, it shall recover the contents of the file being edited at most, one minute prior to the failure, and the next time the same user launches the application.

3.3 Network/Hardware Robustness

BISCAIS-399	If WAN connectivity is unavailable, NEDB-NG shall continue to perform all functions that do not require WAN connectivity, such as maintenance of local information, administration of local systems and local data dissemination.
BISCAIS-397	NEDB-NG shall automatically detect the availability and re-establishment of network connectivity and shall: • Automatically continue or restart tasks that were ongoing at the time a failure occurred, and • Initiate subsequent tasks as though network connectivity had not been lost.
BISCAIS-1163	NEDB-NG shall not cause data corruption or loss of data integrity due to connection failure or other hardware/software failures.
BISCAIS-new	The system shall provide the operator with a warning message when the usage load exceeds 70 percent of the maximum planned capacity.

4. SCALABILITY

4.1 Describes how the system behaves when capacity limits are approached or exceeded.

BISCAIS-600	The NEDB-NG database shall be dimensioned to support all the relevant data based on current estimates of numbers and sizes of information objects and provide an additional 20% of space a year for the initial five (5) years of operation.

5. AVAILABILITY

BISCAIS-70	NEDB-NG shall be available in NATO commands and NATO nations 24 hours a day, seven days a week, with an availability rate of 99%.
BISCAIS-72	Measurements of availability shall not include failures resulting from factors determined to be external to NEDB-NG (e.g., loss of domain controller, loss of network connectivity).

6. DATA INTEGRITY

BISCAIS-477	Data integrity shall be applied to information exchanged between and stored by each NEDB-NG Services.
BISCAIS-476	NEDB-NG shall maintain referential integrity between entities across all services data sets.
BISCAIS-475	NEDB-NG shall provide an ability to perform cascade deletion of the

	lower level entities that are dependent on higher level entities.
BISCAIS-469	NEDB-NG shall implement a two-phase deletion process (i.e., a logical/soft delete with User-controlled permanent deletion/purging) for entities.
BISCAIS-470	NEDB-NG shall allow an authorised User to reverse a deletion of a 'soft deleted' entity as long as it does not violate other referential integrity constraints.
BISCAIS-471	The Purge (i.e., permanent deletion) functionality in NEDB-NG shall be limited to authorised Users.
BISCAIS-472	NEDB-NG shall contain residual information protection mechanisms to ensure that purged information is no longer accessible.
BISCAIS-473	NEDB-NG shall ensure that newly created objects do not contain information that should not be accessible (i.e. information that has been logically deleted).
BISCAIS-474	NEDB-NG shall ensure consistency of all the data displayed on all open views.

7. ACCURACY

7.1 Accuracy is defined as the degree of conformity of a measured or calculated value to its actual or specified value.

BISCAIS-75	NEDB-NG location accuracy shall be lower than one (1) metre for transformation of coordinate values (UTM, Latitude/Longitudes, others).

8. BACKUPS AND ARCHIVING

8.1 Backups is defined taking periodic full or incremental 'snapshots' of the data store to mitigate the risk of system/storage failure

8.2 Archiving is defined as removing and storing data that is no longer required for use from the system, thus reducing the size of the data store (and improving performance)

BISCAIS-404	NEDB-NG shall provide the ability to perform full and incremental backups of NEDB-NG data and software without impacting system availability.
BISCAIS-405	NEDB-NG shall permit backup and archiving of both the complete NEDB-NG Repository and selected Information Elements.
BISCAIS-406	NEDB-NG shall allow an authorised User to archive data that is not currently required in order to reduce the number of records to be maintained.
BISCAIS-407	NEDB-NG shall be able to make full and incremental backups of all or selected data (Information Elements) at the local node, automatically at a configurable frequency.
BISCAIS-408	Archived NEDB-NG data shall be searchable/readable and NEDB-NG shall provide for restoring it to a specified repository as required.

BISCAIS-1048	NEDB-NG shall allow parts of archives to be selected and recovered to avoid rewriting a complete dataset.
BISCAIS-410	NEDB-NG shall allow re-creation of NEDB-NG data lost since last back-up.
BISCAIS-new	After performing a file backup the system shall verity the backup copy against the original and report any discrepancies
BISCAIS-new	The system shall protect agents the unauthorised addition, deletion or modification of data.
BISCAIS-new	The system shall confirm that the files imported are valid files

9. USABILITY

9.1 Learnability

9.1.1 Learnability is defined as the capability of the software product to enable the user to learn its application. Learnability relates to the amount of training needed by the user to use the system efficiently and effectively.

BISCAIS-1178	Any User who has been trained as a NEDB-NG User shall be able to successfully perform NEDB-NG node administration functions (e.g., manage Users, manage domain values) with a maximum of five (5) days of training.
BISCAIS-93	Any User with basic computer skills shall be able to operate NEDB-NG with no more than five (5) days of training. Specialist training in operational procedures and advanced GIS functionality may require additional training time.
BISCAIS-1105	Any User who has been trained as a NEDB-NG Administrator shall be able to successfully perform NEDB-NG node administration functions (e.g., manage Users, manage domain values) within a maximum of five (5) days of training (and having appropriate permissions).
BISCAIS-94	Any User with basic system administrator skills (i.e., MS Windows system administrator) shall be able to successfully deploy (i.e., install and configure) the NEDB-NG with a maximum of two (2) days of training.

9.2 User Friendliness

BISCAIS-97	NEDB-NG requires a user-friendly interface for operators who vary considerably in their experience in the intelligence domain, technical skills, and frequency and time spent using the system. In order to help the User feel at ease with the system, some general principles are to be followed. They ensure that the system interface is as close as possible to common applications that the operators are used to manipulate on their personal computers. These principles are mainly the ones standardised in the ISO 9241, particularly in parts 10 to 17. The following requirements

	represent the main aspects of the norm to be respected by NEDB-NG. They deal with dialogue principles along with data presentation and availability of accurate guidance information.
BISCAIS-98	NEDB-NG shall comply with the following dialogue principles: • Suitability for the task: the dialogue shall be suitable for the User's task and skill level. • Self-descriptiveness: the dialogue shall make it clear what the User shall do next. • Controllability: the User shall be able to control the pace and sequence of the interaction. • Conformity with User expectations: the dialogue shall be consistent and correspond to the User characteristics, such as task knowledge, education and experience, and to commonly accepted conventions. • Error tolerance: the dialogue shall be forgiving, which means that despite evident errors in input, the intended result shall be achieved with either no or minimal corrective action by the User. • Suitability for individualization: the dialogue shall be able to be customized to suit the User. • Suitability for learning: the dialogue shall support and guide the User in learning how to use the system.
BISCAIS-478	NEDB-NG shall comply with the following criteria of information presentation: • Clarity: information shall be conveyed quickly and accurately • Discriminability: information shall be able to be distinguished accurately • Conciseness: the system shall provide only the information necessary to complete the task • Consistency: the same information shall be presented in the same way throughout the application • Detectability: the User's attention shall be directed to the information required • Legibility: information shall be easy to read • Comprehensibility: the meaning of the information shall be clearly understandable • Unambiguity: the information shall not be open to varying interpretation. Units of measure will be displayed where appropriate.
BISCAIS-99	NEDB-NG User guidance information shall be readily distinguishable from other displayed information. This information shall be provided to the User through prompts, feedback, status information and error management: • Prompts indicate that the system is available for input. • Feedback provides information in response to the User's input. • Status is User guidance information that indicates the current state of components in the system hardware and/or software. • Errors management in human computer interaction include

	management of: A. System malfunctions due to a software or hardware failure (e.g., a problem with the disk drive), B. User inputs not recognized by the system, C. Data entry or logical errors on the part of the User, D. Unexpected consequences resulting from User inputs.
BISCAIS-137	NEDB-NG shall use menu dialogues when use of the system is infrequent and the User does not know what options are available. The following aspects shall be considered in order to give the User the useful information in due time and low effort: • Menu structure, such as logical categories, grouping options and ordering items • Menu navigation, including titles and access time • Option selection and execution, including selection methods, use of the keyboard • Menu presentation, including placement and use of icons

9.3 Ease of Navigation

BISCAIS-1234	NEDB-NG shall have an updated ribbon based user interface.
BISCAIS-1235	NEDB-NG shall include a status bar, which shall provide meaningful information and quick access to certain functions. The information and functions provided by the status bar may vary per capability.
BISCAIS-101	NEDB-NG shall provide on-screen 'drill-down' features to view lower-level details (where and whenever lower level details are available).
BISCAIS-102	When the User is working in NEDB-NG at a 'drill-down' lower level, changes to the current view shall produce a result at the same level (i.e., the User shall not have to 'drill-down' again to re-establish the current view following a change).
BISCAIS-479	In NEDB-NG, table axes shall be selectable and switchable so as to present data in any desired form.
BISCAIS-103	NEDB-NG shall support editing of information in a logical order. In NEDB-NG the user interface forms shall be navigable using the tab key in a logical order. This means that the tab order shall represent the same logical order shown on screen.
BISCAIS-104	In NEDB-NG, navigation shall be possible with both keyboard and mouse and both shall be self-explanatory.
BISCAIS-105	In NEDB-NG, functionality hierarchy and branching logic shall be clear and uniform. It shall be obvious where to find the information and/or function the User is looking for.
BISCAIS-106	NEDB-NG shall provide user interface layouts which are uniform and standardised.
BISCAIS-107	In NEDB-NG, the submit button for a form shall become disabled on click and re-enabled after any change to the entry content. This prevents clicking twice or more times resulting in duplicate

	entries.
BISCAIS-108	In NEDB-NG the ENTER key shall not trigger form submission, especially in cases where forms are too long to display on one screen (e.g., where the submit button may fall below the initially visible area).
BISCAIS-109	In NEDB-NG, scrolling bars (i.e., horizontal and vertical) shall be available when information does not fit onto one screen.
BISCAIS-480	The NEDB-NG user interface shall provide ‘Breadcrumbs’ on web interfaces to reflect 'where I am now in the system'.
BISCAIS-110	In NEDB-NG, the web interface shall be as interactive as possible.

10. USER INTERFACE REQUIREMENTS

10.1 This section provides an extract of some of a sub-set of requirements from the HMI Style Guide for Rich C4ISR Applications, which is referred to in the SRS.

10.2 Role-based Presentation

BISCAIS-112	NEDB-NG shall work on the principle of 'visibility' which means the application shows Users whatever they need for the current task without distracting or overwhelming them with unrelated tasks or options.
BISCAIS-113	In NEDB-NG, user-accessed information shall be filtered according to the User's role and organization, so that Users can only see what they are allowed to view and/or change (including both data and functionality).
BISCAIS-114	NEDB-NG shall only show functionality (e.g., menu items, buttons, selections) that is appropriate to the situation based on User role and permissions and object status. NEDB-NG shall hide or clearly disable (e.g., grey out) functionality not appropriate at the time, including items on second-level and lower-level menus and dialogue boxes.
BISCAIS-115	NEDB-NG user interfaces shall be minimised according to what the User can do. The user interface shall only show entities and attributes (e.g., forms and fields) and functions (e.g., menus and buttons) that are actually available within the security authorisation of the User. Disabled functions due to permissions shall not be shown at all.

10.3 Input Requirements

BISCAIS-118	In NEDB-NG it shall be unambiguous and clear what information in what format is required for each field.
BISCAIS-119	In NEDB-NG the expected input format on all form fields shall be shown if it is not already clear from the label. (e.g., date input format -- ddmmyyyy or dd-mm-yyyy).
BISCAIS-120	NEDB-NG shall be tolerant to the delimiters of input format, including: • Date format (e.g., dd-mm-yyyy could also be entered as ddmmyyyy or d-m-yy without error or picked from a calendar)

	• Location format (ref. BISCAIS-122)
BISCAIS-1236	NEDB-NG shall apply automatic layout (format) of data where possible (e.g. correct format of dates).
BISCAIS-121	The NEDB-NG user interface shall be tolerant to input errors. Users shall be given guidance and suggestions to help them correct or overcome mistakes they have already made. The User shall be provided with user-meaningful error messages and informed about the actions they need to take in order to fix or at least to report the problem.
BISCAIS-122	For all attributes related to geographic co-ordinates, NEDB-NG shall allow the User to enter geographic co-ordinates in a single text field (i.e., so as not to require the User to copy/paste more than once to input a geographic value). NEDB-NG shall automatically identify and parse the locational information entered as: • Degrees/Minutes/Seconds • Decimal Degrees • Degrees and Decimal Minutes • Degrees, Minutes and Decimal Seconds • MGRS • UTM
BISCAIS-123	NEDB-NG user interface shall use predefined dropdown or pull-down lists in appropriate situations to speed up the entry if information and prevent input mistakes. Open text input fields shall be avoided to prevent errors during input.
BISCAIS-1049	NEDB-NG user interface shall allow usage of the keyboard to directly input the code of a value of a list. NEDB-NG shall verify the code and match it against the Domain Values for that list.
BISCAIS-127	NEDB-NG shall keep page size limited on one screen and in order to reduce the need for scrolling to see the submit button. For additional information, mechanisms for paging requests, chunking responses, will be used.
BISCAIS-1050	NEDB-NG shall be used onto different screen sizes and pages shall not be designed to a fixed screen size. NEDB-NG pages shall expand to the right size of the User screen to the extent where the UI is not distorted.
BISCAIS-128	NEDB-NG shall allow grouping of items with expand/minimise buttons (Microsoft Explorer style) in tree views, or using a "group by column" feature in tabular views.
BISCAIS-129	NEDB-NG shall provide wizards if input of certain information requires filling out more than one form, or require a form larger than one screen. This means long forms or lists shall be split up over different subpages (or tabs) within the wizard.

10.4 Defaults

BISCAIS-130	NEDB-NG shall provide auto-completion feature with session-available information to be filled automatically by NEDB-NG (i.e.,

	date/time, name and other profile information of the User, classification). This shall apply to "entry fields" (including text-fields, drop down lists, radio-buttons).
BISCAIS-131	NEDB-NG shall apply automatic layout (format) of data where possible (e.g., capitalisation of names, correct format of dates, numbers).
BISCAIS-1237	NEDB-NG shall provide data defaults where applicable.

10.5 Menus, Mouse actions and shortcuts

BISCAIS-132	Interactions with NEDB-NG with a mouse or keyboard shall produce similar results in and throughout all applications.
BISCAIS-133	In NEDB-NG, clickable (selectable) links and buttons shall be clearly distinguishable from non-clickable text.
BISCAIS-134	In NEDB-NG, keyboard shortcuts shall be made available to access functions.
BISCAIS-135	NEDB-NG shall support selections using: • Menu (Select All) • Context menu • Accelerators (Ctrl+A) • Mouse (click, drag) • Arrow keys
BISCAIS-138	NEDB-NG shall support extended selection by Ctrl (i.e., individual selected items) and Shift (i.e., select from-to) keys.
BISCAIS-139	NEDB-NG shall support normal Windows accelerators, including: • CTRL+C (Copy) • CTRL+X (Cut) • CTRL+V (Paste) • CTRL+Z (Undo) • DELETE (Delete)
BISCAIS-140	NEDB-NG shall support context (i.e., right-mouse) menus. Note: The use of context menus shall be limited for advanced options only. General and common functions shall also be accessible through the ribbon, view or dialog buttons.
BISCAIS-1106	All NEDB-NG views shall, unless otherwise specified, support the following functions for selection: • Select All • Deselect All • Invert Selection
BISCAIS-1107	NEDB-NG shall support standard HMI actions for other input devices, (e.g. swiping on touch screens, etc.)

10.6 Data Entry

BISCAIS-143	NEDB-NG shall retain entered data even after use of the back or reload button or any other User action except conscious choice to delete the data or empty (or reset) the web form fields.
BISCAIS-144	NEDB-NG shall not lose, discard, or corrupt User input without User

	consent.
	User Feedback
BISCAIS-146	NEDB-NG shall inform a User that processing has started, after the User has initiated an action.
BISCAIS-147	After the user has initiated a prolonged action, NEDB-NG shall inform that processing of an action has started and convey the sense of processing progress (by means of a progress indicator).
BISCAIS-148	NEDB-NG shall provide prompts (i.e. allow cancellation or confirmation) when input or changes may be lost due to navigation or logging out.
BISCAIS-149	NEDB-NG shall provide user feedback on required fields which have not been correctly entered.

10.7 Appearance

BISCAIS-160	The design of the user interface shall be based on a single theme with variations. NEDB-NG shall have a common look and feel carried across the entire application's user interface within which a small number of similar but easily distinguished layouts are used. Similar parts of the application should have similar user interfaces and layouts throughout the application.
BISCAIS-481	Visual elements and interaction schemes of the NEDB-NG User Interface shall be reused on similar functions and features. Uniformity is created this way, which helps Users to understand where they are and what they can do.
BISCAIS-482	A consistent font shall be used across NEDB-NG applications.
BISCAIS-483	The NEDB-NG user interface shall be structured so that options, features and functions of the application are organised in a way that reflects their relationships.
BISCAIS-484	The presence of required fields and their styling shall always be noted in advance. Although it is common to flag required fields with an asterisk, this shall be noted at the top of the form, not as a footnote at the bottom. Redundant flagging of required fields with a special character or glyph plus bolding, highlighting, outlining, or a distinct colour shall be considered as the best practice.
BISCAIS-1051	NEDB-NG shall support the display of textual data in tabular displays with backgrounds, tabs, buttons and borders that are semi opaque. Transparency of a panel in the display shall be configurable by the User.
BISCAIS-1108	Web-based functionality under NEDB-NG shall be designed with an HMI which can be customised for viewing on mobile devices. Web-based development shall follow [WCAG] and [MWBP]

10.8 Standard Functionality

BISCAIS-153	NEDB-NG shall support copying and pasting from other applications

	via the Clipboard (including text and graphics). The copy and paste action shall take into account the view and the status of the view (e.g., sorting, labelling) from which the information was copied and into which type of application it was pasted. As an example, information copied from a Matrix View and pasted into Microsoft Excel shall cause the information to be placed into corresponding cells (i.e., not a single cell containing all copied/pasted information) in the same sort order.
BISCAIS-154	NEDB-NG shall allow an operation to apply to multiple-selected objects where possible.
BISCAIS-155	NEDB-NG shall render row and column headers for data matrices.
BISCAIS-156	NEDB-NG shall allow the User to sort (with an initial default of 'ascending') the contents of a matrix or list by clicking on the column header for the attribute on which the sort is to be based.
BISCAIS-157	NEDB-NG shall allow a User to reverse the sort order (i.e., ascending to descending, descending to ascending) by clicking again on the column header for the attribute on which the current sort is based.
BISCAIS-1174	NEDB-NG shall allow the user to select which columns are displayed in matrix-views (i.e. hide/unhide columns). The user shall be able to store the column selection as a preference.
BISCAIS-1175	NEDB-NG shall allow the user to select the order in which columns in a matrix-view are displayed. The user shall be able to store the column order as a preference.
BISCAIS-158	NEDB-NG shall support screen tips on all icons and attributes that offer added explanation and assistance.
BISCAIS-159	NEDB-NG shall allow the User to enable or disable screen tips and visual aids.
BISCAIS-161	NEDB-NG shall provide undo/redo functionality for changes to objects to the largest extent possible (not limited to formatting), at least until the last save action.
BISCAIS-162	For changes that cannot be undone, NEDB-NG shall ask the User to confirm them warning about the irreversible effect of the action.
BISCAIS-163	NEDB-NG shall save the positions and states of the User Interface elements for each user between application sessions, and shall restore the user interface on starting another session.
BISCAIS-164	NEDB-NG shall clearly display the Organisational Node and mode of operation (e.g., Operational, Exercise, Training) in which the User is currently working.
BISCAIS-165	For tabular or lists of information, NEDB-NG shall allow the User to navigate [MULTIPLE SELECT]: • A row at a time • By paging • By page scrolling for the entire table

10.9 “About" control

BISCAIS-1421	Software Identification on User Interfaces Titles and version numbers of

	the application itself and all of its components together with required copyright notices and disclaimers shall be accessible via the applications' 'About' user control.

10.10 Language Requirements

BISCAIS-170	NEDB-NG shall use UK English as the default language. This shall apply to all system and supporting components, including views, dialogs, help screens, tooltips, CBT, error/notification/warning messages and documentation.
BISCAIS-1109	NEDB-NG shall be designed to support localisation (alternative languages/regional settings) within minimum effort.
BISCAIS-176	All functions, help screens, CBT pages and User guides in NEDB-NG shall have a score of at least sixty (60) in the Flesch Reading Ease test.
BISCAIS-172	NEDB-NG shall use domain terminology consistent with this System Requirement Specification and other NATO documents.
BISCAIS-171	Labels in NEDB-NG shall be context-dependent, meaningful and descriptive to the function or action at hand.

10.11 Accessibility

10.11.1 Accessibility is a set of features that will make an application usable for people with certain disabilities.

BISCAIS-1110	For NEDB-NG, colour blindness (i.e., any deficiencies in colour perception) is the main concern.
BISCAIS-177	The NEDB-NG user interface shall comply with the Web Content Accessibility Guidelines as defined by the W3C.
BISCAIS-175	The NEDB-NG user interface shall be suitable for colour blind users: • Selected elements of the GUI should not be only identified by a difference of colour. • Sufficient contrast shall be used throughout the application. • Highlighting information shall not rely on colours only.
BISCAIS-174	The NEDB-NG accessibility features shall apply to the application user interface, including the help pages, CBT pages, and error/warning/notification messages.
BISCAIS-178	NEDB-NG shall scale the user interface to fit the screen when low resolutions are used for poor vision accessibility.

10.12 Printing

BISCAIS-184	NEDB-NG shall support printing of landscape, portrait and all other supported paper sizes and layouts.
BISCAIS-185	NEDB-NG shall ensure that the application maintains stability when printing if no printer is installed.
BISCAIS-188	NEDB-NG shall support printing to local and network printers.
BISCAIS-187	NEDB-NG shall support printing in Portable Document Format (PDF).

BISCAIS-186	NEDB-NG shall allow the User to preview (Print Preview) a NEDB-NG print product before it is printed. The Print Preview shall display the Information Element to the NEDB-NG User how it will be printed on paper or PDF file using the selected settings for the selected output device or printer.

10.13 Time Zone

BISCAIS-189	NEDB-NG shall use and store data internally as Zulu time (i.e. GMT) as standard time.
BISCAIS-190	NEDB-NG shall present data with its time-zone in Zulu time by default.
BISCAIS-191	If so selected by the User, NEDB-NG shall present data in the local time of any other possible time zone.
BISCAIS-192	NEDB-NG shall clearly identify time values as Zulu (e.g., 0815Z) or Local in User displays and logs.
BISCAIS-193	NEDB-NG shall represent all date/time data according to ISO 8601.

11. MAINTAINABILITY AND SUPPORTABILITY

11.1 SWID Installation

BISCAIS-1418	Two copies of the SWID tag file must be installed on each system that the software is installed on. The first copy of the tag file should be accessible in the top level directory of the installed software package itself and the second copy of the tag file must be installed in a platform dependent file system location as: ***<file system location>\regid.1997-08.int.nato\<tagfilename>***
BISCAIS-1419	The file system location is the platform dependent standard location where the software discovery tools expect to find SWID tag files.

12. INSTALLATION AND UNINSTALLATION

12.1 Installation

BISCAIS-560	NEDB-NG components shall be capable of being installed by a Windows Installer or similar service/product installation package in any Bi-SC AIS approved platform.
BISCAIS-578	NEDB-NG shall be capable of being installed and correctly run on multi-processor and multi-core systems.
BISCAIS-1116	NEDB-NG shall support successful installation on both 32-bit and 64-bit operating systems (e.g. where the default program files folder is "Program Files (x86)").
BISCAIS-566	NEDB-NG shall ensure that an application can only be installed by an authorised administrator.
BISCAIS-1209	NEDB-NG shall detect, during installation, if the user has insufficient privileges required for installation (e.g. folder or registry access). NEDB-NG shall report the details of the access failure to the user before aborting the installation.

BISCAIS-570	The NEDB-NG installer shall detect its environment and appropriately address the correct Microsoft Windows version.
BISCAIS-1118	The NEDB-NG installer shall detect and appropriately address issues of disk space and drives with 'not enough' space prior to beginning installation.
BISCAIS-571	The NEDB-NG installer shall detect and appropriately address a previous installation of the same application. In this case, the installer shall notify User and prompt if the User wants to reinstall, repair or cancel, and proceed accordingly.
BISCAIS-1119	The NEDB-NG installer shall detect and appropriately address files protected by Windows File Protection or other operating system file protection function, and not attempt to replace these files.
BISCAIS-561	NEDB-NG shall ensure that all shared application files are referenced during installation.
BISCAIS-562	NEDB-NG shall install into “Program Files” application directory by default or allow alternate directory/drive to be selected for installation.
BISCAIS-1115	NEDB-NG shall support successful installation and running on non-English language versions of MS Windows (e.g. the Italian version of Windows uses "Programmi" instead of "Program Files").
BISCAIS-564	NEDB-NG shall provide an installation supported by a complete, clearly-worded Installation Manual.
BISCAIS-569	NEDB-NG shall ensure the ability to re-run, allow addition or removal of components that have been or are still to be installed.
BISCAIS-573	The NEDB-NG installer shall detect and appropriately address components shared with other applications. The installer shall not adversely affect other installed applications.
BISCAIS-574	The NEDB-NG installer shall detect and appropriately address issues of disk space and drives with 'not enough' space prior to beginning installation.
BISCAIS-575	The NEDB-NG installer shall detect and appropriately address files protected by Windows File Protection, and not attempt to replace these files.
BISCAIS-576	The NEDB-NG installer shall detect and appropriately address the presence or absence of special hardware.
BISCAIS-577	The NEDB-NG installer shall set-up Program group/folders as appropriate. All expected program group folders, shortcuts and links (icons) shall appear correctly and be installed where expected.
BISCAIS-565	NEDB-NG shall allow termination of the installation before it is complete. Cancellation of an installation shall terminate the process and remove all program files and directories, registry entries, program and group directories, as appropriate, retaining all shared and system files. Restart of the installation shall allow the installation to complete without error.
BISCAIS-1117	Once installed by an administrator, NEDB-NG shall be usable by all

	authorised users of the system (i.e. it shall not require all users to have administrator privileges).
BISCAIS-1399	Software installers used by software developers for NATO Software (i.e. InstallShield, AdvancedInstaller, InstallAnyhwere) must support SWID tags.

12.2 Uninstallation

BISCAIS-579	NEDB-NG shall provide a capability to completely uninstall NEDB-NG application(s)/component(s).
BISCAIS-580	The NEDB-NG installation package shall create an entry under the Control Panel's Add/Remove Programs, which shall be available to launch the de-installation of the capability or one of its components. Once all components have been uninstalled the entry under Control Panel's Add/Remove Programs shall be removed.
BISCAIS-568	NEDB-NG shall ensure that an application can only be uninstalled by an authorised administrator.
BISCAIS-581	The NEDB-NG User shall be prompted to confirm the un-installation.
BISCAIS-582	The NEDB-NG uninstallation capability shall remove all program files and folders, registry entries, program and group folders, as appropriate, retaining all shared and system files.
BISCAIS-583	The NEDB-NG uninstallation capability shall retain all shared and system files, and shall not adversely impact other installed applications.

13. PORTABILITY

13.1 Environment

BISCAIS-1120	NEDB-NG shall run successfully on both 32-bit and 64-bit environments.
BISCAIS-1122	In case of a non-virtualized deployment solution being proposed, the deployment of NEDB-NG to physical infrastructure shall be prepared to be unattended / scripted so that it can be initiated and completed using the NATO EMS environment without direct physical interaction with the servers needed.
BISCAIS-1123	NEDB-NG shall define a minimum required resource profile for the physical environments of each type of NEDB-NG deployment described in the SoW. The resource profile will contain at least the physical infrastructure resources (processing, memory, storage, monitoring, management and security).
BISCAIS-1124	NEDB-NG shall define a minimum required resource profile for the virtualized environments of each type of NEDB-NG deployment described in the SoW. The resource profile will contain at least the virtual infrastructure resources (processing, memory, storage, monitoring, management and security).

13.2 Usage scope and limitation

BISCAIS-1039	NATO intends to be able to manage, install and use NEDB-NG using their own resources on sites and locations decided by NATO without restriction on the Product.
BISCAIS-1036	NEDB-NG shall bear no limitation on the usage scope in term of time, duration and location of usage.
BISCAIS-1037	NEDB-NG usage shall be permitted for any type of event or activities. Including but not limited to training, demonstration, exercise, static, deployed, mobile, civil or military locations, aircrafts or ships.
BISCAIS-1062	NEDB-NG shall not bear additional licenses and charges for deployment of the NEDB-NG Product if used in a NATO context (exercise, mission, static and deployable commands, NRF).
BISCAIS-1038	NEDB-NG basic geo-information shall have no license and usage restriction.

14. DOCUMENTATION

14.1 NEDB-NG documentation requirements are included in the SOW. Additional documentation requirements are listed in this section, in order to ensure interoperability with Bi-SC AIS.

BISCAIS-225	NEDB-NG on-line User documentation and help system shall be compliant with standards identified under section "Applicable Standards".
BISCAIS-226	In NEDB-NG every form/page shall have a link to a support person or organization or document, on-line User documentation, on-line help, CBT and relevant chapters in the User Manual.
BISCAIS-227	NEDB-NG shall adhere to the *Microsoft standard user interface methods* for accessing on-line documentation resources.
BISCAIS-228	NEDB-NG shall make all relevant documentation accessible via the web-based application, including: • User Documentation • System Administration Documentation • Installation Documentation • Release Notes • Frequently Asked Questions
BISCAIS-1422	All documents, however short, shall identify the complete name and version identifier of the software they refer to, originator, date of production, the type of document, and

	configuration management information of the document itself.
BISCAIS-1423	All documents shall also contain a list of those CIs (title and version identifier) that the document or parts thereof refers to.

14.2 User Documentation

14.2.1 User Manual

BISCAIS-233	NEDB-NG shall be equipped with a User Manual. The NEDB-NG User Manual shall describe each User function in NEDB-NG, including their interrelationship and the logical sequence.
BISCAIS-234	The NEDB-NG User Manual shall be available as a printable document or as an on-line resource.

14.2.2 Administration Manual

BISCAIS-238	NEDB-NG shall be equipped with an Administration Manual.
BISCAIS-240	The NEDB-NG Administration Manual shall describe how to manage User Accounts for NEDB-NG.
BISCAIS-241	The NEDB-NG Administration Manual shall describe how to maintain the Access Rights on Information Entities.
BISCAIS-243	The NEDB-NG Administration Manual shall describe how to maintain the exchange of Information Entities between organizations.
BISCAIS-244	The NEDB-NG Administration Manual shall describe how to configure NEDB-NG for a specific mission.
BISCAIS-1210	The NEDB-NG Node Administration Manual shall describe how to maintain and update domain values.
BISCAIS-863	The NEDB-NG Administration Manual shall include an annex with trouble shooting information. The trouble shooting annex shall provide a break-down on actions to solve a full range of (potential) problems or provide workarounds.

14.3 Technical Documentation

14.3.1 Installation Guide and Read Me file

BISCAIS-246	NEDB-NG shall be equipped with an Installation Guide.
BISCAIS-247	The NEDB-NG Installation Guide shall explain all actions to take in order to install and configure NEDB-NG, including COTS components. Every action shall be followed by a description (text and/or screenshots) of the feedback which will be displayed.
BISCAIS-248	The NEDB-NG Installation Guide shall describe: • Prerequisites for installing NEDB-NG. (e.g., the

	necessary OS access right to be able to install NEDB-NG) • The necessary software, drivers, etc. to install NEDB-NG • The required disc space.
BISCAIS-249	The NEDB-NG Installation Guide shall describe how to configure the system backbone to be able to run NEDB-NG.
BISCAIS-250	The NEDB-NG Installation Guide shall describe how to configure the DBMS for NEDB-NG. This shall include both the data model and any [SELECT] access/replication mechanism.
BISCAIS-251	The NEDB-NG Installation Guide shall contain a description of all configuration files. The following points shall be described: • The location of the configuration file • The content of the configuration file • The available settings of the items in the configuration file and their meaning • How to change the configuration file
BISCAIS-252	NEDB-NG shall be equipped with 'Read Me' files for specific components.
BISCAIS-253	The NEDB-NG Read Me files shall contain: • Minimal system requirements necessary to run the specific NEDB-NG part • The functional changes since the latest release • The solved errors • Known errors • Contact information for problem reporting
BISCAIS-1397	In case SWID tags cannot be automatically installed by software installers (e.g. legacy or third party software) the installation documentation shall describe the process to manually install the SWID tags.

14.3.2 Release Notes

	Each NEDB-NG release shall be equipped with a Release Notes file which shall include: • The change log describing the difference in functionality with the previous release. • Know issues of the current release.

14.3.3 Technical Manual

BISCAIS-260	NEDB-NG shall be equipped with a Technical Manual which indicates how to maintain NEDB-NG. The following shall be described in the NEDB-NG Technical Manual:

	• All the configuration settings for the NEDB-NG modules, services and components • How to configure the logging and uses of performance counters • Where to find the log files • The different categories of logging • The different performance counter categories
BISCAIS-262	The NEDB-NG Technical Manual shall provide sufficient information such that a technician will be able to operate the system without supervision and to perform fault finding in support of first level maintenance.
BISCAIS-261	NEDB-NG shall be equipped with manuals describing the usage of all third-party applications needed to configure, manage and maintain NEDB-NG.
BISCAIS-263	The NEDB-NG Technical Manual shall include an annex with trouble shooting information. The trouble shooting annex shall provide a break-down on actions to solve a full range of (potential) problems or provide workarounds.
BISCAIS-264	The NEDB-NG Technical Manual shall include an annex with database management information. The database management annex shall describe: • A break-down from the user interface (fields and actions) down to the effected database tables, triggers and stored procedures • The NEDB-NG Logical Data Model in full detail • The NEDB-NG Physical Data Model, where the following items shall be described: • Triggers • Foreign keys • Tables and columns • Stored procedures and parameters
BISCAIS-265	The NEDB-NG Technical Manual shall include an annex on back-up and restore procedures.

14.4 On-line Help

14.4.1 General

BISCAIS-272	NEDB-NG will be used by organizations in various time zones throughout NATO territories and other areas of NATO operations. During crisis use of NEDB-NG will be high and over extended working hours. Full on-line help capability will be required to supplement the NEDB-NG help-desks.
BISCAIS-875	NEDB-NG shall support on-line help describing all functionality of the NEDB-NG capability.
BISCAIS-874	The NEDB-NG on-line help shall translate every use case and

	usage scenario into a browsing sequence. Every browsing sequence shall be structured according to the User workflow.
BISCAIS-275	NEDB-NG on-line help shall describe each NEDB-NG function, the interrelationships between and the logical sequence of functions.
BISCAIS-274	NEDB-NG on-line help shall explain all menu items, dialog windows, data entry and query fields implemented in the NEDB-NG Product Baseline.
BISCAIS-879	The NEDB-NG on-line help shall include a glossary providing definitions of all terms and acronyms implemented in the NEDB-NG Product Baseline.
BISCAIS-878	All definitions in the NEDB-NG glossary shall be available in roll-over, pop-up windows linked to every appearance in on-line help of the corresponding term or acronym.
BISCAIS-876	In NEDB-NG, each dialogue, menu item, toolbar item, function, field or button (each item on the screen) shall have an on-line help option. This shall be clearly visible, but not intrusive.
BISCAIS-880	The NEDB-NG on-line help function shall provide meaningful advice and hints to Users appropriate to the actions they are trying to take.
BISCAIS-877	The NEDB-NG on-line help shall be concise, compact and clear to the User.
BISCAIS-277	The on-line help shall include snapshots of NEDB-NG screens, windows, and dialogue boxes. The snapshots shall be provided in a suitable lightweight format (e.g., GIF, PNG) approved by the Purchaser.
BISCAIS-278	Pictures in the NEDB-NG on-line help showing more than five GUI elements/controls shall have a clickable image map describing each element.
BISCAIS-281	If the NEDB-NG on-line help topic requires a large picture that does not fit on a normal page, a reduced copy shall be additionally included on the Help page that will expand to its full size on User request.
BISCAIS-881	The NEDB-NG on-line help shall be context-sensitive (i.e., based on a specific point in the state of the software and providing help for the situation that is associated with that state on action being performed).
BISCAIS-282	All context-sensitive GUI elements in the on-line help shall be linked to the relevant User Manual topics.
BISCAIS-882	In NEDB-NG, all source code elements shall be configured to link the GUI elements to their context-sensitive topics.
BISCAIS-1184	NEDB-NG shall contain help functions that provide access to interactive training sessions to guide Users through procedures and functions.
BISCAIS-1183	The NEDB-NG on-line help shall be given by a small pop-up

	screen or info-tip screen. This screen shall appear quickly and be very easy to hide, for instance clicking anywhere within it.
BISCAIS-279	NEDB-NG on-line help shall open a dedicated web page when the User request access to the full content of the on-line help. The on-line help shall not be preventing the User to perform on the NEDB-NG GUI.
BISCAIS-280	NEDB-NG shall allow the User to hide the on-line help screen just by clicking anywhere else, or there shall be another single action hiding mechanism.

14.4.2 Help Search

BISCAIS-285	The NEDB-NG on-line help shall be organised in the following two sections: • Contents, providing access to all help pages and organized in a logical manner by topic or procedure • Index, providing Users with both the ability to search for keywords in all Help pages and retrieve a list of those pages in which those keywords appear and the ability to select and trigger such a query from a list of all keywords.
BISCAIS-286	NEDB-NG shall be able to display search query results for finding help items in the online help in a list. NEDB-NG shall display the help item when the User selects a query result in this list.

14.4.3 Software Maintenance Manual

BISCAIS-269	NEDB-NG shall be equipped with a Software Maintenance Manual which provides information to support the maintenance of NEDB-NG software. The following shall be described: *The NEDB-NG modules, services and components* *Interfaces* *The NEDB-NG file structure and files* *How to build the NEDB-NG software, including:* *Descriptions of project and system directory structures* *Specification of the build environment* Details of build configurations (e.g. 32-bit or 64-bit) Settings and configuration files

14.4.4 Transition Documentation

BISCAIS-868	NEDB-NG shall be equipped with NEDB-NG Transition Manuals describing the transition from an NEDB-NG increment to the next NEDB-NG increment in terms of

	functionality upgrade and migration of data.
BISCAIS-869	NEDB-NG Transition Manual shall describe how to update a NEDB-NG installation to the next increment.
BISCAIS-870	NEDB-NG Transition Manual shall describe how to convert the data from a NEDB-NG increment to the next NEDB-NG increment.
BISCAIS-871	NEDB-NG Transition Manual shall describe how information can be exchanged between different increments of NEDB-NG.
BISCAIS-872	The NEDB-NG release document shall describe the difference in functionality between the successive NEDB-NG releases.
BISCAIS-873	NEDB-NG shall be equipped with updated documentation and manuals with each NEDB-NG release and/or increment describing all the functionality supplied with the latest NEDB-NG release/increment.

14.4.5 Training Documentation and Support

BISCAIS-297	The following NEDB-NG Training Material shall be generated: • Training Syllabus for Course Participant, • Training Syllabus for Instructors • Training Materials and Manuals for Users and Administrators: • Student Manual • Instructor Guide • Computer-Based Training (CBT) • Transition Training • Training Scenario
BISCAIS-298	The training materials for NEDB-NG will be delivered in hard and soft copy.
BISCAIS-888	Each NEDB-NG Training Course (i.e., User, Organizational Node Administrator, System Administrator) shall include a Syllabus containing the following elements: • Course title, • Course description, • Learning objectives, as identified in the Training Needs Analysis and confirmed in the Training Plan, • Entry profile • Concepts, Functions and Features presented in the course. • Instructional methodologies to be employed in the delivery of the course, • In-class assignments or laboratories, • Evaluation tools, • Performance standards.

15. SECURITY

15.1 Definitions

15.1.1 Security is defined as the capability of the software product to protect information and data so that unauthorized persons or systems cannot read or modify them and such that authorized persons or systems are not denied access to them.

15.1.2 For purposes of this NFR list, the following definitions are used:

- Authentication - verifying the identity of the user or consumer of a service or application
- Authorization - ensuring that the consumer is able to perform a particular action on a resource
- Confidentiality - ensuring that data is not disclosed to unauthorized parties, usually through the use of encryption
- Data Integrity - ensuring that the data has not been altered in transit
- Non-repudiation - ensuring that neither the sender nor the receiver of a message can deny having sent or received it
- Accountability - ensuring that there is a permanent record of any transaction, which can be retrieved and analyzed outside the scope of a transaction

15.2 Compliance with Bi-SC AIS Security Requirements

15.2.1 The following INFOSEC functionalities will be provided by the BI-SC AIS:

- Confidentiality. Military-grade NATO IP cryptographic equipment (NICE) will provide confidentiality to User data as well as cryptographic separation between security Domains (for example, NATO SECRET, NATO UNCLASSIFIED. MISSION SECRET). Information exchange between these security domains will be achieved through appropriate boundary protection services (BPS). As a minimum, NICE will be located at each boundary between the local area networks (LANs) and the NATO wide area network (WAN). This will ensure that all User data will be encrypted prior to transmission across the NATO WAN. Software application layer mechanisms will be used for Community-of-Interest (COI) separation.
- Integrity. Digital signatures and authentication services will be used by various protocols (e.g., SNMP, IPSEC) to provide integrity and strong authentication to User data and network configurations. The NATO Public Key Infrastructure (NPKI) will enable these specific security services.

15.2.2 Infrastructure security as provided by the Bi-SC AIS Infrastructure will be transparent to NEDB-NG.

BISCAIS-717	The security settings of NEDB-NG shall be compliant with the Bi-SC AIS Community Security Requirement Statement (CSRS) for the following areas: • Bi-SC AIS Security Settings

	• File Systems
BISCAIS-933	NEDB-NG performance shall not be degraded by the presence of multiple security domains.(i.e. AIS, BICES)
BISCAIS-934	NEDB-NG shall be compliant with the security infrastructure as provided by the Bi-SC AIS core services.
BISCAIS-931	NEDB-NG shall adhere to NATO INFOSEC Security Policy

15.2.3 Bi-SC AIS Security Settings

BISCAIS-719	The Security settings in effect on the NS WAN environment are categorised using the categories below. • **Account Policies.** Password policies, account lockout policies and Kerberos policies. • **Local Policies.** Audit policy, User rights assignment, security options. • **Event Log Settings.** Settings for event log parameters itself (e.g., max size of audit file). • **Restricted Groups.** Membership of security-sensitive User groups. • **System Services.** Start-up and permission for system services. • **Registry.** Permissions for Windows registry keys. • **File System Permission.** Permissions for folders and files. • **Removal Of Certain Folders and Files.** Removal of some default files and registry keys. • **Installation of Devices.** Settings for installation of specific hardware devices (e.g., floppy drives, microphones, etc.). • **Configuration of Specific Windows Software Modules.** Settings for use of security related Windows software modules like DHCP, RAS, etc. • **BIOS Settings.** Security related configuration data for BIOS. Details of standards applicable to the security settings are given in NITC Security Settings for Windows Server and Windows Client Operating System.
BISCAIS-720	NEDB-NG shall be capable of operating within the NS WAN environment (including servers, network, services and workstations) in the presence of the currently approved NATO Security Settings (target version to be provided by the Purchaser during the Design Stage). Any deviations from the approved security settings shall be identified by the Contractor prior to testing and shall be subject to approval of the Purchaser.

15.2.4 Information Classification

BISCAIS-1143	NEDB-NG shall create as required (if not existing from the source), include and maintain the appropriate Security Classification (including Policy (e.g. NATO), Classification (e.g. SECRET) and

	Category (e.g. Releasable to NATO)) for each piece of information across NEDB-NG Services through the use of NATO XML labelling standards.
BISCAIS-1144	NEDB-NG shall maintain releasability information for each piece of information across NEDB-NG Services.
BISCAIS-1145	NEDB-NG shall include Security Classification in the data sent by every web services that NEDB-NG exposes.
BISCAIS-1146	NEDB-NG shall support Security Labelling elements upon information entity entry and create the corresponding Security Classification using approved NATO labelling standards for each Information Element. 'Entry' refers to direct creation in NEDB-NG; entities imported from an external system/file shall be required to have security labels.
BISCAIS-1147	NEDB-NG shall maintain Security Classification on received information using data labels across all NEDB-NG Services and using NATO approved labelling standards.
BISCAIS-1148	NEDB-NG shall create Security Labels upon information production based on Security Classification.

15.2.5 Web Security Features

15.2.5.1 Validation of Input

BISCAIS-723	Improper validation of input from web requests may expose vulnerabilities that an attacker can use to attack backend end components (e.g., databases) through the web application.
BISCAIS-724	NEDB-NG shall validate all User input.
BISCAIS-725	NEDB-NG shall ensure that all input values are validated before they are used, including: • Data types (e.g., string, integer, real) • Allowed character sets • Minimum and maximum length • Whether null is allowed • Whether the actual parameter is required or not • Whether duplicates are allowed • Numeric range • Specific patterns (e.g., regular expression)
BISCAIS-726	NEDB-NG shall automatically validate entries into NEDB-NG Services to ensure they conform to the required formats and limits.
BISCAIS-727	NEDB-NG shall automatically verify entries into NEDB-NG Services to ensure the User is authorized to effect such changes.

15.2.6 Enforcement of Access Control

15.2.6.1 Improper access control features can be exploited to access other Users' accounts, view sensitive files or use unauthorized functions.

BISCAIS-730	NEDB-NG shall ensure that privilege restrictions of authenticated Users are properly enforced.
BISCAIS-731	NEDB-NG shall not rely on the secrecy of identification information (i.e., IDs) for protection.
BISCAIS-732	NEDB-NG shall prevent 'forced browsing' past access control checks. For purposes of this [REQUIREMENTS_DOCUMENT], forced browsing is an attack the aim of which is to enumerate and access resources that are not referenced by the application, but still can be accessible.
BISCAIS-733	NEDB-NG shall prevent 'path traversal' attacks. For purposes of this [REQUIREMENTS_DOCUMENT], a path traversal attack is one that aims to unauthorised navigate through the file system and access files and directories that are stored outside web root folder, particularly by manipulating variables that reference files with 'dot-dot-slash (../)' sequences. Path traversal attacks includes providing relative path information as part of a request (e.g., ../../etc./passwd).
BISCAIS-734	NEDB-NG shall securely configure and enforce file permissions. Unless specifically authorised by the Purchaser, only files that are specifically intended to be presented shall be marked as readable. Best practices suggest that most directories should not be readable, and very few files, if any should be marked executable.
BISCAIS-735	NEDB-NG shall prevent compromise of information via client-side caching, including best practice use of mechanisms such as HTTP headers and meta tags.

15.2.7 Cross-Site Scripting (XSS)

BISCAIS-750	Without proper protection, a web application can be used as a mechanism to transport an attack to an end User's browser, causing a User's web browser to execute a malicious script. A successful attack can disclose an end User's session token, attack the local machine or spoof content to fool the User.
BISCAIS-751	NEDB-NG shall perform validation of all headers, cookies, query strings, form fields and hidden fields.
BISCAIS-752	NEDB-NG shall ensure that the HTTP TRACE method is turned off on all web servers to prevent compromise of cookie data.
BISCAIS-753	NEDB-NG shall encode User-supplied output to prevent XSS.

15.2.8 Injection Flaws (SQL)

15.2.8.1 Web applications pass certain parameters when they access external systems or the local operating system. If an attacker can embed malicious commands in these parameters, the external system may execute those commands on behalf of the web application. Injecting valid SQL queries through the username and password fields

could allow the application to send the query through to the database, allowing the attacker to query the database or authenticate using someone else's credentials.

BISCAIS-756	NEDB-NG shall constrain the input by validating it for type, length, format and range.
BISCAIS-757	NEDB-NG shall use type-safe SQL parameters. Input shall be treated as a literal value, and NEDB-NG shall not treat it as executable code.
BISCAIS-758	NEDB-NG shall use filter routines that sanitise the code, adding escape characters that have special meaning to SQL.
BISCAIS-759	NEDB-NG shall create custom error pages to prevent server error messages from being disclosed.

15.2.9 Buffer Overflow

15.2.9.1 Web application components that do not properly validate input can be 'crashed', and in some cases used to take control of a process. These components can include CGI, libraries, drivers and web application server services or components. An attacker may take full control of the system being targeted or kill a process.

BISCAIS-762	NEDB-NG shall be configured with the latest patches to the web and application server products.
BISCAIS-763	NEDB-NG shall ensure that application code which accepts input from Users via the HTTP request provides appropriate size checking on all inputs.

15.2.10 Improper Error Handling

15.2.10.1 Improper handling of error conditions which occur during normal operation can expose vulnerabilities. If an attacker can cause errors to occur that the web application cannot handle, they may gain detailed system information, deny service, cause security mechanisms to fail or, in some cases, crash the server.

BISCAIS-766	NEDB-NG shall use custom error pages to prevent server error messages from being disclosed.

15.2.11 Unsecured Storage

BISCAIS-769	NEDB-NG shall properly apply selected asymmetric encryption mechanisms to protect information and credentials (SSL and SQL server security mechanisms) according to the standards approved by NATO Information Assurance Technical Centre (NIATC) and NATO INFOSEC to protect information and credentials.

15.2.12 Application Denial of Service

15.2.12.1 Due to Application coding errors, it may be possible for an attacker to consume web application resources to a point where other legitimate Users can no longer

access or use the application. Attackers may also be able to lock Users out of their accounts or cause the entire application to fail.

15.2.12.2 This chapter can be omitted if running in NATO domain.

BISCAIS-772	NEDB-NG shall protect against application denial of service.
BISCAIS-773	NEDB-NG shall limit the number of resources allocated to any User to a bare minimum. For authenticated Users, NEDB-NG shall consider implementing quotas to limit the amount of load a particular User can put on the system.
BISCAIS-774	NEDB-NG shall limit the number of requests a User can have active at any one time.
BISCAIS-775	NEDB-NG shall avoid unnecessary access to databases or other expensive resources.

15.2.13 Unsecured Configuration Management

15.2.13.1 A strong server configuration standard is critical to secure a web application. These servers have many configuration options that affect security and are not generally secure by default. For example, if a web application is not secured, an attacker may be able via directory traversals to get to directories where passwords are stored.

BISCAIS-778	NEDB-NG security mechanisms shall be properly configured according to best practices: • Disabling unused services on the NEDB-NG servers • Disabling default accounts, and accounts no longer used • Correctly configuring permissions and accounts • Correctly configuring logging and alerts
BISCAIS-779	NEDB-NG components shall be configured with the latest security patches and updated with the latest security guidelines from the NATO Information Assurance Technical Centre (NIATC).

15.2.14 File System

BISCAIS-781	NEDB-NG shall support access to the underlying file system using Windows standards, including Long File Names and legal naming characters.
BISCAIS-782	NEDB-NG shall allow saving to and opening from (Secure) Bi-SC AIS-supported devices, including: • Local drives, • NTFS drives, • FAT32 drives, • Remote (network) machines mapped by drive letters and UNC paths, • Compressed/uncompressed drives.

15.3 Authentication

BISCAIS-315	NEDB-NG shall uniquely Identify and Authenticate (I&A) Users.
BISCAIS-1102	NEDB-NG shall allow an authorised user (i.e. DBA, DBM, and NEDB-NG Admin) to manage (create, update, delete) NEDB-NG User Accounts, password details, and assign User Roles to User Account and manage general access privileges of individual User Accounts.
BISCAIS-704	NEDB-NG shall allow the User (with the same User-id) to access the same information and functionality from any workstation on the NS WAN (i.e., 'roving User' functionality). This capability shall not depend on the availability of Active Directory.
BISCAIS-705	Role-based access control shall be applied according to the following guidelines: • Users are associated with User Roles and also with Organizations. • User Roles determine the functions and types of objects available to the User. • Organizations determine the data available for use by the available functions. • A User has permission on a particular data item only if the User has an authorised Role and is a member of that Organization
BISCAIS-1135	If a User has more than one Basic Role, the User shall be prompted to choose one of the Basic Roles in NEDB-NG for that session.
BISCAIS-326	NEDB-NG shall integrate with existing users management systems from the Bi-SC AIS: Windows Active Directory
BISCAIS-325	NEDB-NG shall integrate with existing users management systems from the Bi-SC AIS: NATO Enterprise Directory Service.
BISCAIS-1101	Within NEDB-NG an authorised User shall have a set of access rights (data and applications) such that these rights can be maintained.
BISCAIS-321	The interval for password change in NEDB-NG shall be selectable.
BISCAIS-319	NEDB-NG shall allow authenticated Users to manage their password and their User profile (e.g., e-mail address, unit) information.
BISCAIS-317	NEDB-NG shall provide help texts to support the login process together with links to recover lost password and login details.
BISCAIS-318	NEDB-NG shall limit the feedback of information during authentication to prevent Users gaining knowledge of the authentication process.

15.4 Authorisation

15.4.1 The term 'authorised User' as used within this NEDB-NG document shall be interpreted as authenticated Users specifically authorised to view the relevant information or perform the relevant function.

BISCAIS-313	NEDB-NG shall only display functionality enabled according to the permissions assigned to the User.
BISCAIS-314	NEDB-NG shall allow two or more Users to have the same Role simultaneously.

15.5 Confidentiality

15.5.1 Confidentiality is defined as ensuring that data is not disclosed to unauthorised parties, usually through the use of encryption.

BISCAIS-306	Confidentiality of NEDB-NG data shall be protected.
BISCAIS-307	NEDB-NG shall ensure that a Security Classification construct is automatically included into each NEDB-NG information element, showing the highest classification of information it contains.
BISCAIS-786	In line with AC/322-D(2014)0010, the Security Classification in NEDB-NG shall include: • **Policy Identifier/ Information Ownership:** e.g., NATO, NATO/EAPC (Euro-Atlantic Partnership Council), ISAF (International Security Assistance Force); • **Classification Marking:** e.g., Unclassified, Restricted, Confidential, Secret; • **Category/Caveats:** e.g., Releasable to AUS/FIN, Releasable to ISAF, Releasable to Coalition.
BISCAIS-787	In NEDB-NG, the Security Classification shall be a domain value.
BISCAIS-1100	The machine readable structure of the Security Label in NEDB-NG should be in accordance with the AC/322-D(2014)0010.
BISCAIS-310	NEDB-NG shall provide visual confirmation to Users (on-screen) of the security classification including any releaseability caveats (e.g., Releasable to ISAF) of the displayed data.. NEDB-NG shall include a configurable colour-based visual cue in addition to text to indicate classification (as recommended in the HMI Style Guide for Rich C4ISR Applications).
BISCAIS-308	NEDB-NG shall insert a Security Classification construct into headers/footers and metadata of generated, created or exported reports, MS Office files and PDF files. The user shall be prompted during the process. • By default NEDB-NG shall propose the highest classification level of the selected objects. • If no classification is specified for the selected objects, then the repository classification level shall be proposed. • The user shall be able to override the proposed classification level by choosing another. Classification is mandatory and shall be composed of three field : authority, classification, release.
BISCAIS-309	If a file is being generated or exported in a format that does not use headers/footers, NEDB-NG shall include a Security Classification into an appropriate part of the file so that it is clearly visible to the User.

15.6 Management of XML artefacts

15.6.1 A metadata registry is a system that contains information that describes the structure, format and definitions of data. Typically, a registry is a software application that uses a database to store and search data, document formats, definitions of data, and relationships among data. The Purchaser will use such a metadata registry to store the XML artefacts delivered through the NEDB-NG project.

BISCAIS-1462	NEDB-NG is expected to register all the artefacts related to the information exchanged and the protocols used for exchange in the Purchase's metadata registry.
BISCAIS-1463	NEDB-NG shall support registry of its XML artefacts, including Web Service artefacts, via Purchaser's metadata registry.
BISCAIS-1464	When applicable, the NATO Guidance for XML naming and design shall be used as a reference to work with XML artefacts [AC/322(SC/5)N(2008)0006].

16. PERFORMANCE

16.1 Background

16.1.1 The NEDB-NG system shall have enough capacity to absorb a full data update that involves several instances of NEDB-NG, National and NATO. The scenario defines the worst case of data input operation, where all NATO Nations would like to provide an update to the central DB as multiple concurrent data update.

- 50 users in a single instance, using a Web Browser to access the NEDB-NG Web Application, invoking the functions implemented and exposed by the User Interface. Of those 50 users, minimum 5 will be performing data management operations and minimum 40 will be just browsing the data.

- One instance of the the NEDB-NG system, that may be composed by several internal services like database, Application Server, etc.

- Ability to have independent datasets, representing the data that is managed in a specific operation, training or exercise modes.

- Ability to display 20,000 records, and 20 relationships per record. Capacity to store 400,000 relationships.

- Estimated size of a data set is 60MB, including both entities and relationships with associated metadata. The size does not include pictures, as they are not part of the current system. However, if a 64K picture will be added to a record, the total size of the database will grow to 1280MB.

- 40 Concurrent Data Import Operations, where there will be an overlap between the datasets of 95%.

- Effective Network bandwidth of 10Mbps for the communication between the users and the running instance in the same LAN.

- The client application will execute in the client browser runtime. The static content, code, styles and visual elements of the web application will be cached and available for use if a newer version is not available.

- The client application will download the static content, code, styles and visual elements of the web application when it is not available in the client browser runtime.

- The server application will receive the data to be imported using external media and a manual process. The transit time of the data in the manual process will be accounted and taken into account in the performance requirement.

- The client will receive the data to be displayed through the network. The network transit time is dependent of the use of the shared LAN or the WAN, and as such, it is not under the control of the System.

- However, the network transit time should also be inspected when dealing with the performance of the system, so that a certain delay can be quantified and assigned correctly to the client, the server, the network, or the manual process of data input.

- The performance will focus on the data processing time of the server application and the data presentation time on the client application. The performance requirements define the expected results when the data is already available in the server application after being imported by the manual process, or when the data is already available in the client application after it has been transmitted over the network.

- For a National site, the effective available bandwidth will be 64kbps.

- The NEDB-NG will reuse services that already exist in the network, such as Active Directory, email server, or others. The functions of the system that involve a shared service will not take into account the delay introduced by the service when calculating a metric for the performance requirement.

- The footprint of the web application, to be downloaded by a client, is 1MB, including static content, pictures, styles and code.

- The web application will be considered functional and ready to serve when browser receives the Document Object Model (DOM) Ready event, that is, when all static and dynamic content of the web application is loaded into the local cache of the client web browser.

- A standard query scenario involves 50 users providing query requests to the web service, where 15 results are returned.

16.2 Performance requirements

16.2.1 As stated into the previous section, the following requirements are defined in a specific scenario, where a responsive and asynchronous web application is what the User expects to experience when utilizing the NEDB-NG web client.

16.2.2 The NEDB-NG web application shall be functional within 3 seconds of being launched by the user. A login screen or a splash screen is the first screen to be displayed. For responsive designs, any script or framework should not perform any operation until the browser reports the ready event. Also, the application shall divide its code into modules that will be loaded asynchronously after the document is ready.

16.2.3 The NEDB-NG web application shall respond to user input in 2 seconds after the user requests to perform an action. The user input must be prioritized and executed as the events occur. This implies that the web application must be asynchronous, capable of handling into the background data loading, transformation or rendering operations while visually indicating that an operation is being done.

16.2.4 The NEDB-NG web application shall provide an “Operation in progress” indication when the requested operation takes more than 2 seconds to execute. After completing the background operation, the final response is rendered.

16.2.5 The NEDB-NG web application shall indicate the user a delayed operation due to a long network operation. If the data is not coming, the user should know that the client is not getting the data from the server.

16.2.6 The NEDB-NG web application shall render the result of an asynchronous action 3 seconds after being completed.The actual response of an operation (after the application receives the data through the network) should be fast. Mechanisms for paging requests, chunking responses, will be used. Grouping of results, categorization and increasing level of detail principals will guide the user through considerable amount of data. Any mechanism for paging should be considered, including infinite scrolling.

16.2.7 The NEDB-NG web application shall divide the information in parts, when it will take more than the current screen to display it.

16.2.8 The NEDB-NG web application shall allow the user to change the information part that is displayed from a dataset that exceed the current screen to display it.

16.2.9 The NEDB-NG web application shall be able to handle data set that spans for 200 parts, with a page-size of 100 records. If displaying a 20,000 object record-set, with 100 rows to fit into the current resolution, then 200 pages should be managed. With smaller page size, then more pages will be needed.

16.2.10 The NEDB-NG system shall apply and update to one full dataset, including related metadata or files within 90 seconds after being requested by the user. This performance requirement is design for 20,000 records of 1,000 size, as stated in the scenario. The server will have 50 concurrent users making query requests, where of those users, only one will request the full data-set update.

16.2.11 The NEDB-DB system shall generate a report maximum 5 seconds, when being requested by 5 users simultaneously (in a scenario when the server will have 50 concurrent users making query requests).

16.2.12 The NEDB-NG system shall respond to a standard query request within 5 seconds of receiving the request. The server will have 50 concurrent users making query requests. All key functions of the system will be required to perform in the same manner as the standard query request.

16.2.13 The NEDB-NG system software code shall not violate the architectural and coding practice - as stated in [OMG document Automated Source Code Performance Efficiency Measure, June 11, 2015] - that affect NEDB-NG system's performance and resource usage. The purpose of the static code analysis is to detect violations of good architectural and coding practices that could result in inefficient operation such as performance degradation or excessive use of processor resources.

16.2.14 The NEDB-NG system shall publish and update the data for the user clients 3 seconds after the full concurrent update operation (transaction) is finalized. During a transaction, no change will be observed. After a transaction, all changes that belong to the transaction are immediately available for the users to see, after the transit time through the network and the render time, that is 3 seconds.

16.3 Performance depending Bandwidth Efficiency

BISCAIS-486	NEDB-NG shall be designed and implemented to minimise use of network bandwidth and computational resources.
BISCAIS-487	NEDB-NG shall use data compression to reduce the bandwidth usage between NEDB-NG server and National sites.

16.4 Performance Depending on Network Status

16.4.1 A degraded network mode of operation is when the NS/mission-specific WAN or NS/mission-specific LAN is providing a reduced level of service that may impact one or more of the NEDB-NG services (or Application and Interface Products). Reduction in service may be due to bandwidth limitations or a communication degradation affecting some part of the LAN and/or WAN.

BISCAIS-544	NEDB-NG shall automatically detect degraded performance (whether from network bottlenecks, server load, or other external reasons) and ask the User to allow limitation of the user interface accordingly.

16.5 Performance by Key Use Cases

BISCAIS-548	NEDB-NG performance shall be compliant with the performance requirements described above. Those performance characteristics shall take into consideration only the network load arising from NEDB-NG; the communication delays on the underlying network due to other Bi-SC systems shall not be included in the measurement. The performance characteristics shall be measured using: • client access across the relevant network (i.e., not running the browser/client on the server), • a repository that mirrors an operational repository in numbers and types of entities (i.e., size and composition) and variation of data (i.e., content), • the reference system or hardware that is of equal or lower

	specification, • the standard browser for the Bi-SC AIS (i.e., Internet Explorer), • workstations of equal or lower specification than standard Bi-SC AIS workstation, • local-area network connectivity of 100Mb/sec or less, • for cases involving WAN connection, wide-area network connectivity of less than or equal to 1000Kb/sec and latency of 500ms or greater.

16.5.1 Login

BISCAIS-549	The NEDB-NG application shall be launched and functional within five (5) seconds of completing log-in.

16.5.2 Search for Information

BISCAIS-551	NEDB-NG shall perform a Query search returning fifteen (15) results within five (5) seconds.

16.5.3 Display Information

BISCAIS-552	NEDB-NG shall display Notification messages within five (5) seconds.

17. HUMAN COMPUTER INTERFACE (HCI)

17.1 The main Graphical User Interface (GUI) elements of the Data View in the client application shall reuse, extend or override existing elements provided by a HMI framework, such as Bootstrap, and React. The elements to be used when composing the HMI are tabs, buttons, dropdown menus, tables, hierarchical trees and detail panels, as well as dialogs to interact with the user.

17.2 The layout of the Data View shall be developed by the Contractor during the design and implementation phase and shall be used as needed in the process of the User Experience engineering (UX).

NATO Communications and Information Agency
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PROVIDE FUNCTIONAL SERVICES FOR ELECTRONIC WARFARE – INCREMENT 1

NATO EMITTER DATABASE NEXT GENERATION (NEDB-NG)

BOOK II - PART IV - ANNEX B

WORK PACKAGES

TABLE OF CONTENTS

1 GENERAL INFORMATION

1.1 Relation of this document to the SOW

1.1.1 The purpose of this annex to the NEDB-NG Statement of Work (SOW) is to describe the scope of work in terms of Work Packages, relations between the Work Packages and how each of the Work Packages shall be implemented.

1.1.2 The document lists time constraints that the Contractor shall use to build the Project Master Schedule.

1.2 Work Packages

1.2.1 The Purchaser currently envisions a Contract Work Package structure for the project as shown in Figure 1:

- Work Package 1 – Project Management
- Work Package 2 – Requirements Analyses and System Design
- Work Package 3 – System Development
- Work Package 4 – System Integration and Acceptance
- Work Package 5 – Sit Survey and Site activation
- Work Package 6 – Training Support
- Work Package 7 – System Support
- Work Package 8 – Third Level Software Support
- Work Package 9 – Hardware and Software Licenses
- Work Package 10 - Software Development and Technical Support

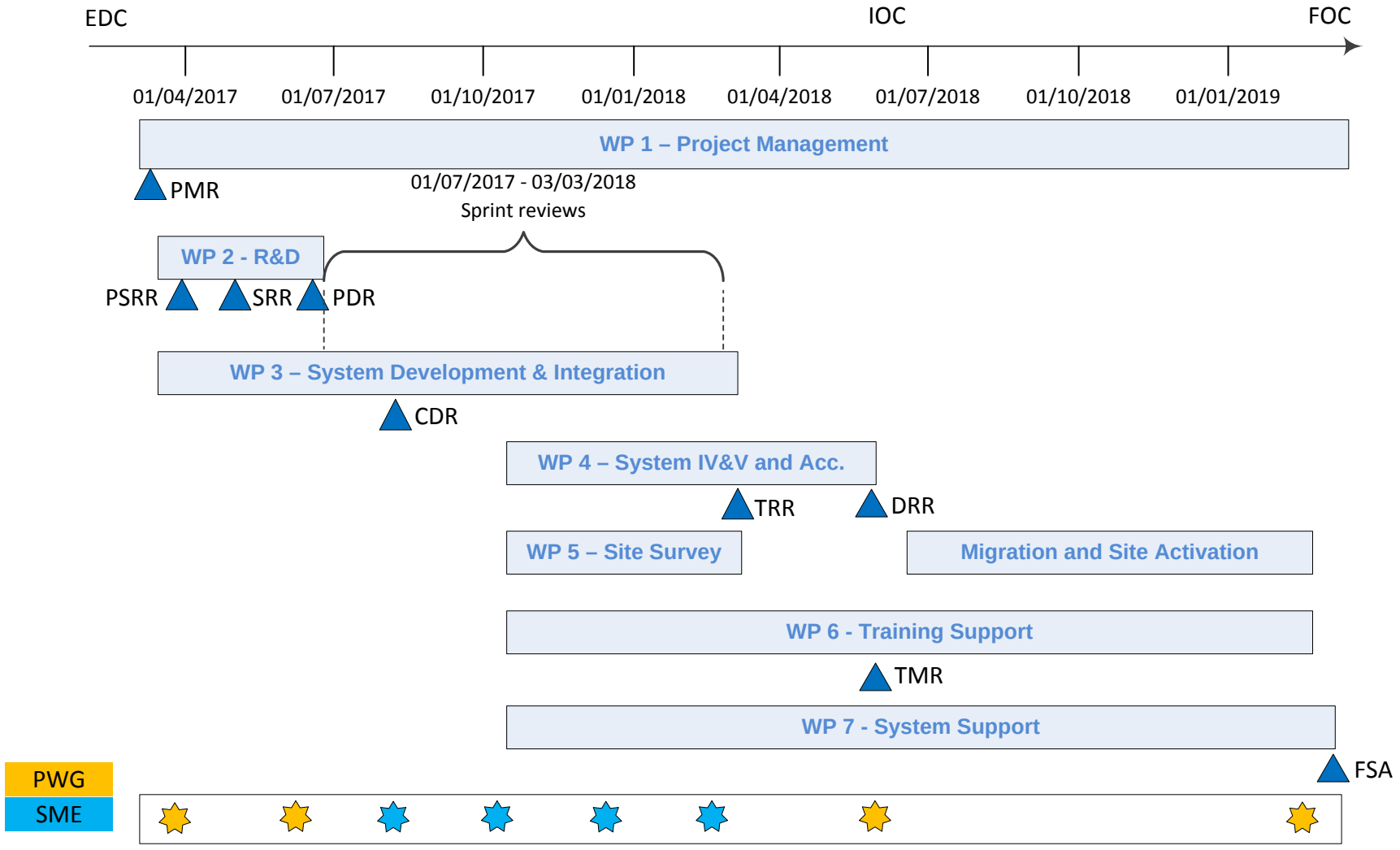

Figure 1 – Work Package Structure

1.2.2 The delivery of the NEDB-NG shall be carried out in consecutive System Development and Integration Sprints, implementing the requirements presented in the System Requirements Specification, at Annex A to the Statement of Work.

1.2.3 Each of the consecutive System Development and Integration Sprints shall implement a new set of requirements, and consolidate it with implementation of the requirements from the previous sprint.

1.2.4 The final Sprint shall have all the requirements as stated in the SRS implemented in the NEDB-NG.

1.3 Project Milestones

1.3.1 Figure 1 shows the major project milestones and marks associated checkpoints.

Milestone	Description	Expected date
EDC	Effective Date of Contract.	Start of the contract execution.
IOC	Initial Operational Capability	EDC+15 M
FOC	Full Operational Capability	EDC+24 M
FSA	Final System Acceptance of all project deliverables and services provided within the contract	EDC+25 M

Table 1 : NEDB-NG Project Milestones

1.4 Project Reviews

1.4.1 A short explanation for all the reviews is given below. These reviews will be monitored by the Purchaser and are usually tied to payment triggers.

1.4.1.1 **PMR**: Project Management Review: Initial Baseline of the Project Management Plan (PMP) submitted by the Contractor.

1.4.1.2 **PSRR**: Preliminary System Requirements Review: Verification of the System Requirements Specification to clarify and resolve questions early in the requirements analyses process.

1.4.1.3 **SRR**: System Requirements Review: Verification of the proposed decomposition of the System Requirements as defined for NEDB-NG.

1.4.1.4 **PDR**: Preliminary Design Review: Verification of the overall high-level design of the total system, interface design and the user interface description being implemented in the NEDB-NG.

1.4.1.5 **CDR**: Critical design Review: Verification of the design of the system, interface design and the user interface description being implemented in the NEDB-NG.

1.4.1.6 **TRR**: Test Readiness Review for the NEDB-NG. Verification if the software implementing the scope defined for the NEDB-NG is ready for IV&V and security accreditation testing.

1.4.1.7 **DRR**: Deployment Readiness Review. Verification of the total NEDB-NG system is ready for deployment to the designated sites.

1.4.1.8 **TMR**: Training Material Review. To review all training material requested in the SOW.

1.5 Supporting system installations

1.5.1 In support of the software development and maintenance, depending on the stage of the project, the Contractor shall deploy and support operation of NEDB-NG in the following system configurations:

- Collaborative Working Environment at the Contractor's location, to support user interface specification and development
- Integration Testbed at the Purchaser's location, for IV&V and user testing.
- Support Environment at the Purchaser's location, for provision of second and third level maintenance support

1.5.1.1 The deployment of NEDB-NG at supporting system installations, except of the Support Environment, is part of software development and testing activities and is not separately listed in the scope of Work Package 5.

2 WORK PACKAGE 1 - PROJECT MANAGEMENT

2.1 General

2.1.1 The Contractor shall provide project management support for the overall project and the implemented Work Packages as described in Section 3 of the SOW.

2.1.2 Work Package Performance Start Date (WP PSD):

- To be started on EDC,
- To be extended up to FOC.

2.1.3 Work Package Deliverables:

- Project Website and Collaborative Working Environment
- Project Management Plan (PMP)
- Configuration Management Plan (CMP)
- Quality Assurance Plan (QAP)
- Product Breakdown Structure (PBS)
- Work Breakdown Structure (WBS)
- Project Master Schedule (PMS)

- System Development Plan (SDP)
- Risk Log
- Quality Log
- Issue Log
- Project Highlight Report (PHR)
- Meeting Minutes (MoM)
- Lessons Learned Log
- Project information materials
- ILS Plan

2.2 Project Resources

2.2.1 Project Management Office

2.2.1.1 The Contractor shall establish and maintain a Project Management Office (PMO), as described in Section 3 of the Statement of Work (SOW) through the period of performance of this Work Package.

2.2.1.2 The Contractor shall provide the following Key Personnel as described in Section 3 of the SOW:

- Project Manager;
- Technical Lead;
- Test Director;
- Quality Assurance Manager;
- ILS Engineer.

2.2.2 Project Website and Collaborative Working Environment

2.2.2.1 As specified in Section 3 of the SOW, the Contractor shall use an unclassified but access managed Project Website and Collaborative Working Environment.

2.2.2.2 The Contractor shall deploy and maintain NEDB-NG software to be available at the Collaborative Working Environment, in order to support:

- User requirements verification,
- Collaborate on the interface design,
- NEDB-NG PWG/SME Workshops.

2.2.2.3 The Contractor shall propose the design for this website and collaborative working environment no later than two weeks after the Work Package 1 PSD.

2.2.2.4 The Contractor shall populate and activate this website and collaborative working environment by PMR.

2.2.3 Videoconferencing facilities

2.2.3.1 It is envisioned that there will be frequent Videoconferences between the Contractor team and Purchaser Project Team and as such, the Contractor shall have facilities to carry out VTC sessions with the Purchaser's facility locations. These VTC sessions should be able to cover unclassified discussions.

2.3 Project Planning

2.3.1 Project Management Plan

2.3.1.1 The Contractor shall establish and maintain a Project Management Plan (PMP) as specified in Section 3.4 of the SOW. The PMP shall describe how the Contractor will implement the totality of the project, including details of the project control that will be applied.

2.3.1.2 The Contractor shall provide the initial baseline version of the Program Management Plan at the Project Management Review (PMR) and maintain it throughout the period of performance of this Work Package.

2.3.2 Configuration Management Plan

2.3.2.1 The Contractor shall establish and maintain a Configuration Management Plan (CMP) as specified in section 5 of the SOW. The CMP shall describe how the Contractor will implement configuration management to manage project baselines.

2.3.2.2 The Contractor shall plan configuration with regard to the contract deliverables and system maintenance following the transition to operations.

2.3.2.3 Contractor shall provide the CMP as an annex to the PMP to be reviewed at PMR.

2.3.2.4 The Contractor shall maintain the PMP throughout the period of performance of this Work Package.

2.3.3 Project Work Breakdown Structure

2.3.3.1 The Contractor shall establish and maintain a Project Work Breakdown Structure (PWBS), according to Section 3.5 of the SOW.

2.3.3.2 The Contractor shall provide the initial baseline version of the PWBS at the PMR and maintain it throughout the period of performance of this Work Package.

2.3.4 Project Master Schedule

2.3.4.1 The Contractor shall establish and maintain a Project Master Schedule (PMS) following Section 3.6 of the SOW.

2.3.4.2 The PMS shall contain all contract events and milestones, including contract-related Purchaser activities and events (e.g., Purchaser reviews, provision of specific Purchaser-furnished items).

2.3.4.3 The PMS shall correlate with the WBS and be traceable to performance and delivery requirements of this SOW.

2.3.4.4 The Contractor shall provide the initial baseline version of the PMS at the PMR and maintain it throughout the period of performance of this Work Package.

2.3.5 Work Package Management

2.3.5.1 The Contractor shall prepare draft Work Packages as requested by the Purchaser. The Work Packages shall be reflected in the Project Work Breakdown Structure (PWBS), to be accepted at PMR.

2.3.5.2 As specified in Section 3.7 of the SOW, the Contractor shall ensure that all confirmed Work Packages are reflected in the PWBS and PMS.

2.3.6 Risk Management Plan

2.3.6.1 The Contractor shall establish and maintain an overall Risk Management plan for the project throughout the period of performance of this Work Package.

2.3.6.2 The Contractor shall provide the initial baseline version of the Risk Log within four weeks after WP PSD and maintain the log throughout the period of performance of this Work Package.

2.3.7 Quality Management Plan

2.3.7.1 The Contractor shall develop a Quality Management Plan, as defined in Section 3.9 of the SOW.

2.3.7.2 The Contractor shall provide the initial baseline version of the QMP at the PMR and maintain it throughout the period of performance of this Work Package.

2.3.7.3 Verification and Validation of project deliverables shall follow the process outlined in the QMP.

2.4 Planning of Engineering Activities

2.4.1 System Development Plan

2.4.1.1 The Contractor shall establish a System Development Plan (SDP) according to the Section 4 of the SOW.

2.4.1.2 The SDP shall outline the development sequence coordinated with the System Engineering and IOC/FOC scope definition.

2.4.1.3 The plan shall describe all System Engineering activities defined in Work Package 3, as described in the Section 4 of the SOW.

2.4.1.4 The Contractor shall provide the initial baseline version of the SDP at PMR and maintain the plan throughout the period of performance of this Work Package.

2.5 Monitoring and Control

2.5.1 Risk Management

2.5.1.1 The Contractor shall establish and maintain an overall Risk Management program for the project throughout the period of performance of this Work Package.

2.5.1.2 The Contractor shall provide the initial baseline version of the Risk Log at the PMR and maintain the log throughout the period of performance of this Work Package.

2.5.2 Quality Management

2.5.2.1 The Contractor shall establish, execute, and maintain an effective Quality Management program as specified in Section 3 of the SOW throughout the period of performance of this Work Package.

2.5.2.2 The Contractor shall provide the initial baseline version of the Quality Log at PMR and maintain the log throughout the period of performance of this Work Package.

2.5.3 Configuration Management and Change Management

2.5.3.1 The Contractor shall establish and maintain a Configuration Management (CM) program as specified in Section 5 of the SOW.

2.5.3.2 As needed to identify and request changes to the Allocated, Functional, Development, or Product Baselines, the Contractor shall prepare and manage Change Requests and Deficiency Reports as specified in Sections 5.5 and 4.4.5 of the SOW.

2.5.3.3 The Contractor shall provide the initial baseline of its Configuration Management Database at PMR and maintain the database throughout the period of performance of this Work Package (See Section 5 of the SOW).

2.5.4 Project Highlight Reports

2.5.4.1 The Contractor shall provide, beginning four (4) weeks after WP1 PSD and continuing throughout the period of performance of this task, a monthly Project Highlight Report, as specified in Section 3 of the SOW.

2.5.5 Lessons Learned Log

2.5.5.1 The Contractor shall maintain a project Lessons Learned Log. The Lessons Learned Log shall include describe major problems encountered during the project implementation and identify improvements for the future projects.

2.5.5.2 The Lessons Learned Log shall be based on the information captured in the Issue Log and the Risk Log.

2.6 Meetings

2.6.1 Project Kick-off Meeting

2.6.1.1 The Contractor shall meet with the Purchaser's Project Manager and members of the Purchaser's Integrated Project Management Team at the Purchaser's facility within two (2) weeks after EDC to review the schedule of

activities and to discuss any preparations or coordination required to support the NEDB-NG development effort.

2.6.2 Project Checkpoint Reviews

2.6.2.1 The Contractor shall schedule and conduct Project Checkpoint Reviews as specified in Section 3 of the SOW.

2.6.2.2 The Contractor shall conduct the first Project Checkpoint Review within four weeks after EDC, and at least once every month thereafter, throughout the period of performance of this Work Package.

2.6.2.3 The Checkpoint Review shall be held within one (1) week after submission of the PHR, primarily remotely (e.g. via VTC) or, if requested - at the Purchaser's location.

2.6.3 Participation in CCB and IPMT meetings

2.6.3.1 If requested by the Purchaser the Contractor shall participate in NEDB-NG Change Control Board (CCB) meetings and Integrated Project Management Team meetings.

2.6.3.2 The Purchaser may combine CCB meeting with IPMT meeting.

2.6.3.3 The Meetings will be held at the Purchaser's location NCI The Hague.

2.6.4 NEDB-NG Joint Technical Reviews

2.6.4.1 The Contractor shall organise Joint Technical Reviews to support NEDB-NG engineering activities, as described in SOW, Section 4.

2.6.4.2 The Contractor shall organize at least two (2) Joint Technical Reviews during Requirements Analyses and Design, four (4) during System Development and Integration and one (1) during Training support.

2.6.4.3 The Meetings shall be held at the Purchaser's location NCIA The Hague.

2.6.4.4 The Contractor shall use the PWG Workshops to discuss all the engineering deliverables. The purpose of the PWG Workshop shall be the discussion of the implemented functionalities before the formal approval, to reduce the risk that it will be rejected during the Formal Review or the testing.

2.6.4.5 The Contractor shall send the documentation to be discussed at the PWG workshop, and deploy the NEDB-NG software, at least two (2) weeks before the PWG Workshop.

2.6.5 NEDB Advisory Group (NEDBAG) Meetings

2.6.5.1 The NEDB user's community is represented by the NEDBAG.

2.6.5.2 NEDBAG meets twice per year at different locations in Europe. Usually the meetings are scheduled to last four (4) days.

2.6.5.3 During the performance of the contract, the Contractor will be requested to support the NEDBAG meetings and participate in selected sessions.

2.6.6 Minutes

2.6.6.1 The Contractor shall provide minutes of all meetings required under this Work Package as specified in Section 3 of the SOW.

2.6.6.2 If applicable, the minutes shall be accompanied with the updated Issue Log.

2.6.7 Issue Log

2.6.7.1 The Contractor shall maintain a project Issue Log, with all active contract-level issues and archive the closed issues, as specified in in Section 3 of the SOW .

2.6.8 Project information materials

2.6.8.1 The Contractor shall provide project information materials as referenced in Section 3.17 of the SOW as directed by the Purchaser during the course of this work package.

2.7 Reviews

2.7.1 Project Management Review (PMR)

2.7.1.1 The Contractor shall conduct PMR, as specified in Section 3.17 of the SOW.

2.7.1.2 The PMR shall be held at the Contractor's location not later than one (1) month after EDC.

3 WORK PACKAGE 2 - REQUIREMENTS ANALYSES AND SYSTEM DESIGN

3.1 General

3.1.1 Within this Work Package the Contractor shall fully design the NEDB-NG baseline as defined in the System Requirements Specification (SRS).

3.1.2 The Contractor shall review the System Requirements Specification (SRS) with the Purchaser and Subject Matter Experts to establish the requirements baseline for NEDB-NG.

3.1.3 The Contractor shall review the current NEDB applications to design the solution with the functional and non-functional requirements defined in the SRS.

3.1.4 Within this Work Package the Contractor shall:

- design the overall system architecture;
- design the NEDB-NG SQL repository
- design look-and-feel of the Human-Machine Interface for NEDB-NG according to the NATO HMI Style Guide for Rich C4ISR Applications ;

3.1.5 Work Package Performance Start Date (WP PSD):

- To be started on EDC,
- To be completed within three (3) months.

3.2 System Requirements Analysis

3.2.1 The Contractor shall perform system requirements analysis based on the System Requirements Statement and additional information acquired using requirements elicitation techniques defined in SOW Section 4.4.

3.2.2 The contractor shall capture the results of the System Requirements Analysis in the following deliverables:

- Requirements Traceability Matrix (RTM)
- Software Requirements Specification (SWRS)
- User Interface Specification (UIS)
- System Security Design Specification (SSDS)
- System-Specific Security Requirements Statement (SSRS)
- System Interconnecting Security Requirements Statement (SISRS)

3.2.3 Requirements Traceability Matrix

3.2.3.1 The Contractor shall develop a Requirements Traceability Matrix, as described in the SOW, Section 4.5.

3.2.3.2 The Contractor shall update the Requirements Traceability Matrix to maintain the relation between requirements, implementation and tests, based on the contents of the Requirements Management Database.

3.2.3.3 The Requirements Traceability Matrix (RTM) shall show decomposition of all the system-level requirements listed in the SRS into software requirements, system design and existing COTS implementation described in the following specifications:

- Software Requirements specification;
- User Interface specification;
- COTS specifications;
- System Architecture Description (SAD).

3.2.3.4 The Contractor shall present the RTM at all formal reviews within Work Package 2.

3.2.4 Software Requirements specification

3.2.4.1 The Contractor shall develop Software Requirements specification according to the SOW Section 4.4.

3.2.4.2 In case the requirements analysis indicated the need for change in the SRS, the Contractor shall use the formal change management process. Any Change Requests to the SRS shall be the subject to approval from the Purchaser’s Contracting Authority.

3.2.4.3 The Contractor shall use an approved Software Requirements specification as an input for the NEDB-NG Software Design Specification.

3.2.5 User Interface specification

3.2.5.1 The Contractor shall develop User Interface specification according to the SOW Section 4.4.

3.2.5.2 The Contractor shall develop and extend the User Interface specification during the System Development and Integration Sprints.

3.2.5.3 The Contractor shall provide the initial version of the User Interface specification to the Purchaser for review at SRR and the final version for approval at PDR.

3.2.6 System Security Design Specification

3.2.6.1 The Contractor shall provide the initial version of the System Security Design Specification to the Purchaser after SRR and the final version for approval at WP-4

3.2.7 System-Specific Security Requirements Statement (SSRS)

3.2.7.1 The Contractor shall provide the initial version of the System-Specific Security Requirements Statement to the Purchaser after SRR and the final version for approval at WP-4

3.2.8 System Interconnecting Security Requirements Statement (SISRS)

3.2.8.1 The Contractor shall provide the initial version of the System Interconnecting Security Requirements Statement to the Purchaser after SRR and the final version for approval at WP-4

3.3 System Design

3.3.1 System Architecture Description (SAD)

3.3.1.1 The Contractor shall establish the SAD, as described in Section 4 of the SOW.

3.3.1.2 The Contractor shall provide the initial version of the SAD for Purchaser review at SRR and the final version for approval at PDR.

3.3.2 Software Design Specification

3.3.2.1 The Contractor shall establish the Software Design Specification (SDS), as described in Section 4 of the SOW.

3.3.2.2 The SDS shall clearly identify the following design components:

- COTS (unchanged)
- COTS modified by the Contractor to implement NEDB-NG
- New software developments

- Customizable settings, not requiring software (re)build

3.3.3 Interface Control Documents

3.3.3.1 The Contractor shall establish the NEDB-NG Interface Control Document (ICD), as described in Section 4 of the SOW.

3.3.3.2 The ICD shall describe all external interfaces supported by NEDB-NG. It can be provided as a set of documents.

3.3.3.3 The Contractor shall provide the ICD as an annex to the SDS.

3.4 Reviews

3.4.1 Preliminary System Requirements Review (PSSR)

3.4.1.1 The Contractor shall conduct a four-day Preliminary Systems Requirements Review (PSRR) to jointly review the set of requirements as documented in the initial SRS.

3.4.1.2 The Contractor shall deliver the following items within one week after the PSRR: meeting minutes, updated issues log, and any resulting proposed Change Requests.

3.4.2 System Requirements Review (SRR)

3.4.2.1 The Contractor shall conduct SRR, as specified in Section 4.4 of the SOW.

3.4.2.2 The SRR shall verify the deliverables of the System Requirements Analysis and, if needed to propose changes to the System Requirements Specification (the contract document).

3.4.2.3 The SRR shall be carried out after collecting users' inputs by means of NEDB-NG Project Working Group (PWG) Workshop.

3.4.2.4 The SRR shall be held not later than eight (8) weeks after the start of the NEDB-NG Project at the Purchaser's location.

3.4.3 Preliminary Design Review (PDR)

3.4.3.1 The Contractor shall conduct PDR, as specified in Section 4 of the SOW.

3.4.3.2 The PDR shall verify the high-level design and user interface proposal.

3.4.3.3 The PDR shall be held at the Purchaser's location no later than four (4) months after the start of the NEDB-NG Project.

4 WORK PACKAGE 3 – SYSTEM DEVELOPMENT AND IMPLEMENTATION

4.1 General

4.1.1 The Contractor shall design and develop NEDB-NG software using the process described in SOW, Section 4.2.

4.1.2 Within this Work Package the Contractor shall fully design, develop and test the Product Baselines as defined for the System Engineering of the NEDB-

NG.

4.1.3 Within this Work Package the Contractor shall:

- customise the available COTS;
- agree general look and behaviour of the Human-Machine Interface for NEDB-NG;
- implement all necessary developments and customisation of the NEDB-NG software;
- successfully complete internal and factory (FAT) tests;
- deploy the system at the Integration Testbed and successfully complete integration test (SIT) and support and maintenance acceptance test (SSMAT).

4.1.4 Work Package Performance Start Date (WP PSD):

- To be started after EDC,
- To be completed within 12 months.

4.1.5 Work Package Deliverables:

- System Architecture Description (SAD)
- Software Design Specification (SDS)
- Interface Control Document (ICD)
- Test Plan
- FAT Test Procedures
- FAT Test Report
- SIT Test Procedures
- SIT Test Report
- SSMAT Test Procedures
- SSMAT Test Report
- UAT Test Procedures

4.1.5.1 SAD, SDS, ICD deliverables shall be delivered during each System Development and Integration Sprint and further extended during the next Sprint.

4.1.6 All test documents shall be delivered before Factory Acceptance Tasting.

4.1.7 Within this Work Package, the Contractor shall implement the following NEDB-NG development tasks:

- System Requirements Analysis,
- System Design,

- Software Implementation,
- Test Planning
- Factory Acceptance Testing,
- System Integration Testing,
- Support and Maintenance Acceptance Test.

4.1.8 While performing software engineering activities the contractor shall propose a decomposition of the contract requirements defined in the System Requirements Specification following the guidance provided on Figure 3

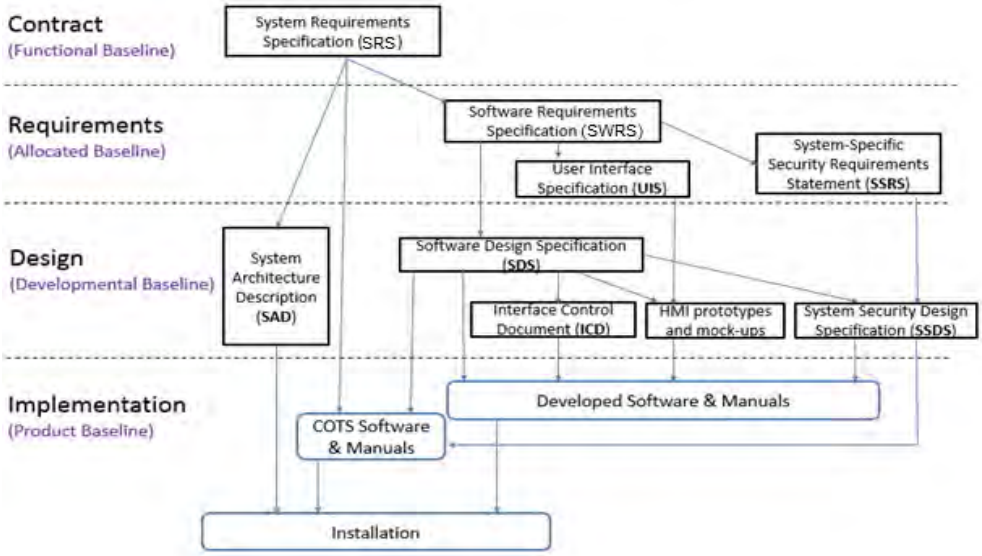

Figure 2 - Expected requirements decomposition

4.2 System Implementation

4.2.1 The Contractor shall implement NEDB-NG software in conformance with the contract requirements and agreed design specifications.

4.2.2 System Engineering

4.2.2.1 The Contractor shall develop NEDB-NG software following the process described in the SOW, Section 4.2.

4.2.2.2 The System Requirements are organised as Functional Blocks. Engineering of each Functional Block is allocated to one or more Sprint(s). This allocation is referred to as the Functional Roadmap. A preliminary allocation of Functional Blocks to Sprints is defined in Table 2 Functional Roadmap. The activities to be completed as part of each Sprint include a functional analysis and design

step, an installation and testing step and reporting and follow up step. The Contractor shall implement all these steps, for each Sprint with Purchaser's assistance and endorsement. During the functional analysis step the Contractor shall propose the revised list of requirements to be implemented in the Sprint and seek Purchaser's endorsement of the functional scope of the Sprint. The Contractor shall conduct installation and testing of the capability delivered at the respective Sprint at the Purchaser's facility. The Contractor shall collect all the observations made during the testing step (with the user community) and prepare a report and implement action items required to receive Purchaser's approval of the Sprint delivery.

4.2.2.3 Any changes to this roadmap shall be agreed between the Purchaser and the Contractor as any reduction to the scope may impact the payment associated to the delivery of a Sprint Candidate Product Baseline.

Block	Function	Sprint 1	Sprint 2	Sprint 3	Sprint 4
Manage Emitters	Manage Emitters and Related Data	x			
	Read Emitter and Related Data	x			
	Perform quality control on data			x	
	Create reports				x
	Manage archived emitter parametric data				x
Manage Queries	Manage Data Queries		x		
Support Network and Stand-Alone architectures	Work stand-alone (not connected to Bi-SC AIS)			x	
Support Operational Processes	Manage User Accounts		x		
	Approve Data		x		
	Coordinate tasks related to data updates (Active Items)		x		
	Manage NEDB-NG system			x	
Interaction with other systems	Compatibility				x
	Compliance				x
	Interoperability (API, Web Services and GIS)				x
Export and Import of	Import bulk data			x	

Data					
	Data export			x	
Data Migration	Migrate data form current NEDB into NEDB-NG				x

Table 2 Functional Roadmap

4.2.3 Population of the Internal Databases

4.2.3.1 The Contractor shall populate NEDB-NG internal databases with the initial set of data approved by the Purchaser.

4.2.3.2 For the selected internal databases, the Contractor shall import the available data from the databases provided by the Purchaser.

4.2.4 Integration Testbed System Implementation

4.2.4.1 The Contractor shall install NEDB-NG software in the Integration Testbed at the Purchaser facility, as specified in the SOW Section 3, following the approved Site Installation and Activation Procedures.

4.2.4.2 During the software development, the Contractor shall use remote access to the Integration Testbed to support remote monitoring and control of the NEDB-NG version used at the testbed. The VPN connection will be provided by the Purchaser.

4.2.4.3 Contractor may request to perform remotely selected testing of the software deployed at the Integration Testbed.

4.2.4.4 With the NEDB-NG deployed at the Integration Testbed, the Contractor shall support:

- Software integration with NATO environment.
- System Integration Testing (SIT)
- System Support and Acceptance Maintenance Testing (SSMAT)
- User Acceptance Test (UAT)

4.3 System Testing

4.3.1 Test Plan

4.3.1.1 The Contractor shall develop the Test Plan following the guidance from SOW Section 4.7.

4.3.1.2 The Plan shall describe the general approach for the testing of NEDB-NG baselines and describe all the test events listed in Table 2.

4.3.1.3 The Contractor shall plan the use of test management and test automation tools to support the testing.

4.3.2 Test Management and Test Automation Tools

4.3.2.1 The Contractor shall make the Test Management Tool (see Section 4.7.11 of the SOW) available via a link on the Project Website no later than two (2) weeks after PDR.

4.3.2.2 The Contractor shall maintain up-to date access to Test Management Tool for the Purchaser until the Final System Acceptance (FSA).

4.3.3 Test Procedures

4.3.3.1 The Contractor shall develop test procedures corresponding to the following sets of requirements:

Test Event	Test Scope	Requirement's Scope
Internal Test	-	SDS
		ICD
		SSDS
FAT	Functionality testing	SRS
		UIS
	Security testing	SSRS
	Integration testing	ICD
SIT	Functionality testing	SRS
		UIS
	Security testing	SSRS
	Integration testing	ICD
SSMAT	-	Deployment of NEDB-NG S/W integration environment Maintainability and RAM demonstration
UAT	-	SRS
		UIS
IV&V Testing	Performance testing	Selected performance tests in accordance with SRS
	Functional testing	Basic functionality tests in accordance with SRS
	Compatibility testing	Software installation process and compatibility with NATO baseline
	Security test	Penetration testing, vulnerability assessment, compliancy with the security settings, role-based access verification
SAT	Functional testing	Basic functionality
	Integration testing	Basic tests for verifying interfaces with site's infrastructure and deployed system
	Security accreditation testing	ST&V Plan

	Performance testing	Selected performance tests in accordance with SRS
T&E	-	System verification in use

Table 3 : Scope of Testing

4.3.3.2 For each test proposed in the Test Plan for NEDB-NG, the Contractor shall develop and maintain procedures using the Test Tool as specified in Section 4 of the SOW.

4.3.3.3 Based on the general Test Procedures the Contractor shall generate Test Procedure documents specific for each test event listed in Table 2.

4.3.3.4 The Contractor shall enable the Purchaser access to the Test Tool, with the test data, including test inputs.

4.3.3.5 The Contractor shall provide the initial version of the Test Procedures within the Work Package 3, for Purchaser review.

4.3.3.6 The final version of the Test Procedures shall be provided within the TRR and updated, upon Purchaser's request.

4.3.4 Test Reports

4.3.4.1 For each test proposed in the Test Plan for NEDB-NG, the Contractor shall record, as specified in Section 4 of the SOW, the test results. The Contractor shall note all test failures and waivers as required by the SOW.

4.3.4.2 The Contractor shall provide each Test Report no later than one (1) week after the completion of the related Test.

4.3.5 Factory Acceptance Test (FAT)

4.3.5.1 The Contractor shall conduct FAT for NEDB-NG in the Contractor's testing environment and report the results as specified in Section 4 of the SOW.

4.3.5.2 The prerequisite for the FAT is Purchaser's acceptance of the TRR deliverables.

4.3.5.3 The Contractor shall plan the test procedures for FAT in a FAT Test Procedures document.

4.3.5.4 The purpose of the FAT is to perform complete verification of the Product Baseline before starting formal approval process.

4.3.5.5 The Contractor shall conduct functionality tests within the FAT using the FAT Procedures, and report using the Test Report as specified in Section 4 of the SOW.

4.3.5.6 If requested by the Purchaser, the Contractor shall repeat the testing and run the tests with modified test procedure or test data.

4.4 Integration Testbed Implementation and Testing

4.4.1 System installation and activation at Integration Testbed

4.4.1.1 The Contractor shall provide, install, and activate the NEDB-NG system at the Integration Testbed at the Purchaser facility as part of the System Development and Integration.

4.4.1.2 The installation and activation of the NEDB-NG software shall follow the agreed Site Installation and Activation Procedures.

4.4.1.3 The Purchaser will provide the Integration Testbed comprising of a representative configuration of NATO software, deployed on virtual server infrastructure, as defined in the SOW Section 3.

4.4.1.4 The Contractor shall install the operating system software and complete NEDB-NG installation in the virtual environment provided by the Purchaser, in time - so as not to delay the System Integration Testing events.

4.4.1.5 The Contractor shall provide and install the Purchaser's approved test data, as required to support System Integration Testing.

4.4.1.6 The Contractor shall provide original equipment manufacturers manuals for all commercial off-the-shelf (COTS) software installed for the NEDB-NG system. At least one hard copy and one soft copy shall be provided for each software CI delivered.

4.4.2 System Integration Testing (SIT)

4.4.2.1 The Contractor shall conduct SIT for NEDB-NG at the Integration Testbed environment and report the results as specified in Section 4 of the SOW.

4.4.2.2 The Contractor in order to request the SIT shall have:

- shall successfully passed the FAT;
- installed the NEDB-NG software at the Integration Testbed;
- installed the test automation tool required to run the tests.

4.4.2.3 During the SIT, the Contractor shall follow the procedures defined in a SIT Test Procedures document.

4.4.2.4 If requested by the Purchaser, the Contractor shall repeat the testing and run the tests with modified test procedure or test data

4.4.2.5 The SIT shall be held within one (1) month after the respective FAT.

4.4.3 Support and Maintenance Acceptance Test (SSMAT)

4.4.3.1 The Contractor shall conduct the SSMAT in the Integration Testbed and report on the results as specified in Section 4 of the SOW.

4.4.3.2 The Contractor shall plan the test procedures for SSMAT in a SSMAT Test Procedures document.

4.4.3.3 The scope of the SSMAT shall include implementation and testing of all customisable elements of NEDB-NG offered by the Contractor.

4.4.3.4 If requested by the Purchaser, the Contractor shall run the tests with modified test procedure or test data.

4.4.3.5 The SSMAT shall be held before WP5, within two (2) weeks after the respective SIT.

4.5 Reviews

4.5.1 Joint Technical Reviews

4.5.1.1 The Contractor shall conduct Joint Technical Reviews at the Purchaser's facility as specified in Section 4 of the SOW.

4.5.1.2 The Joint Technical Review experts will perform a design review on the quality of the implemented functional blocks.

4.5.1.3 During the Joint Technical Review the Contractor shall:

4.5.1.3.1 demonstrate the requirements implemented during the System Development and Integration Sprint.

4.5.1.3.2 collect the remarks, from the experts, on the design of the function block to be implemented during the next Sprint.

4.5.1.4 The Joint Technical Reviews shall be held each System Development and Integration Sprint not later than two (2) months after the previous Sprint of the NEDB-NG implementation.

5 WORK PACKAGE 4 - SYSTEM IV&V AND ACCREDITATION

5.1 General

5.1.1 Within this Work Package the Contractor shall support Purchaser's activities leading to the approval of the NEDB-NG capability.

5.1.2 Within this Work Package the contractor shall:

- develop set of documentation required to receive security accreditation;
- support User Acceptance Testing (UAT);
- support IV&V Testing;
- fulfill the criteria for passing the Deployment Readiness Review (DRR).

5.1.3 Work Package Performance Start Date (WP PSD):

- To be started within eight (8) months after EDC,
- To be completed within eight (8) months.

5.1.4 Work Package Deliverables:

- Communications and Information System (CIS) Description
- Security Risk Assessment (SRA) Report
- System-Specific Security Requirements Statement (SSRS)

- System Security Design Specification
- Security Test and Evaluation Plan (ST&E)
- Security Operating Procedures (SecOPs)
- Security Test and Evaluation Plan (ST&E)
- Security Test Report
- System Interconnection Security Requirement Statement (SISRS)
- UAT Test Procedures

5.1.5 The contractor shall develop security documentation in coordination with the engineering activities defined in Work Package 2 and Installation activities defined in Work Package 4.

5.2 Implementation

5.2.1 Security Accreditation

5.2.1.1 The Contractors shall support security accreditation of the NEDB-NG following the NATO accreditation process described in the SOW, Section 4.

5.2.1.2 As part of the accreditation process, the contractor shall develop the following security documentation:

- Communications and Information System (CIS) Description
- Security Risk Assessment (SRA)
- System-Specific Security Requirements Statement (SSRS)
- System Security Design Specification (SSDS)
- Security Test and Evaluation Plan (ST&E)
- Security Operating Procedures (SecOPs)

5.2.1.3 The security accreditation deliverables shall be verified at the reviews included in Work Packages 2 and 4.

5.2.1.4 The SRA report will be subject to the approval by the respective NATO security accreditation authority. The Contractor is requested to update the document as requested to obtain security approval.

5.2.2 User Acceptance Test (UAT)

5.2.2.1 The Contractor shall support UAT organised at the Integration Testbed.

5.2.2.2 As part of the preparation to the UAT support, the Contractor shall:

- Develop the UAT procedures
- Develop NEDB-NG test environment to support the UAT
- Deploy NEDB-NG in the test environment
- Provide the necessary test data
- Provide operational training on NEDB-NG functionality to the NATO testers.

5.2.2.3 During the UAT the contractor shall be available for at least 15 working days to:

- Provide guidance to the testers on use of NEDB-NG
- Correct configuration issues related with the testing environment and NEDB-NG settings
- Collect user's remarks on their findings.

5.2.2.4 In case of failure of the testing, the Contractor may be request to provide additional support.

5.2.2.5 After the UAT, the Contractor shall analyze the results of the UAT testing and, in case of failures, recommend corrective actions.

5.2.2.6 A high level

5.2.3 Product Baseline Delivery

5.2.3.1 The Contractor shall correct at least all critical and major deficiencies in the NEDB-NG Development Baseline noted during the tests (FAT, SIT, SSMAT, UAT) and deliver this as the NEDB-NG Product Baseline.

5.2.3.2 The Contractor shall deliver the complete Product Baseline to the Purchaser for IV&V Testing.

5.2.4 Independent Verification and Validation (IV&V) Testing

5.2.4.1 The Contractor shall support the installation and configuration of the NEDB-NG capability (as delivered in the Product Baseline) at the Reference System at the Purchaser's test facility.

5.2.4.2 The Contractor shall support IV&V Testing of NEDB-NG Product Baseline at the Reference System and report the results as specified in Section 4 of the SOW.

5.2.4.3 The Contractor shall support IV&V Testing by providing qualified personnel for a minimum of fifteen (15) working days for IOC and FOC.

5.2.4.4 The Contractor shall correct all deficiencies reported during the tests and deliver the corrected Product Baseline.

5.2.4.5 In case of failure of the testing, the Contractor may be request to provide additional support.

5.2.4.6 Upon successful completion of the IV&V testing, including software security testing and testing results review, the Purchaser will declare the Product Baseline approved for implementation on the Bi-SC AIS, at the NEDB-NG designated sites.

5.3 Reviews

5.3.1 Test Readiness Review (TRR)

5.3.1.1 The Contractor shall conduct TRR at the Purchasers facility as specified in Section 4 of the SOW.

5.3.1.2 The TRR shall verify if the Product Baseline satisfies the contract requirements and complies with NATO quality criteria.

5.3.1.3 The TRR shall be held for the System, not later than twelve (12) months after the start of the NEDB-NG Project.

5.3.2 Deployment Readiness Review (DRR)

5.3.2.1 The Contractor shall conduct DRR, as specified in Section 4.8 of the SOW.

5.3.2.2 Successful result of the DRR is the prerequisite for starting system deployment to the installation site.

5.3.2.3 The DRR shall be held at the Contractor's location, not later than one (1) month after IV&V Testing of the respective baseline.

6 WORK PACKAGE 5 – SITE SURVEY AND SITE ACTIVATION

6.1 General

6.1.1 As specified in Sections 4 and 5 of the SOW, the Contractor shall plan and execute the implementation of the NEDB-NG Product baseline to be delivered at FOC

6.1.2 Within this Work Package the contractor shall:

- plan installation activities
- perform site surveys;
- install the system at the server locations;
- activate the system;
- verify and validate the system installation and its availability for the users at their locations

6.1.3 Work Package Performance Start Date (WP PSD):

- To be started after Purchaser approval within Work Package 4,
- To be completed within eight (8) months.

6.1.4 Work Package Deliverables:

- System Implementation Plan (SIP)
- Site Survey Questionnaire
- Site Survey Report
- Software Distribution List
- Configuration Management Database (CMDB)
- Material Data Sheet

- As Built Documentation
- Site Activation Test Report
- Data Migration Test Report
- Data Migration Log File

6.2 NEDB-NG Sites

6.2.1 The NEDB-NG sites (Servers) are listed in Table 3

Id	Name	Location	Qty	Domain	Servers	Clients
NCSS (Static Commands)						
1	JEWCS	UK	-	NS	1	8
2	JFC HQ	Netherlands	-	NS		2
3	JFC HQ	Italy	-	NS		2
4	MARCOM	UK	-	NS		2
5	LANDCOM	Turkey	-	NS		2
6	AIRCOM	Germany	-	NS		2
7	CAOC	Germany	-	NS		2
8	CAOC	Spain	-	NS		2
9	E3A Component	Germany	-	NS		4
10	NHQC3S	Belgium	-	NS		2
11	NIFC	UK	-	NS		2
12	NATO Nations	-	-	NS		21
13	NATO Data Centre	-	-	NS	1	-
Training, exercise and maintenance systems						
1	JWC	Norway	-	NS		2
2	JFTC	Poland	-	NS		2
3	NATO School	Germany	-	NS		2
4	NCIA-DIS	Belgium	-	NS	1	2
5	NCIA-DAS (PMIC)	Netherlands	-	NS	1	2
Sub-total					**4**	**61**
NATO Nations (stand-alone)						

NATO Nations national EW network	**21**[1]	**143**
TOTAL	**25**	**204**

Table 4 – NEDB-NG Authorised Locations and Estimated Number of Users

6.2.2 The Contract includes installation of 4 servers at 4 locations:

6.2.2.1 The static configuration (NCS) is to be deployed at one (1) Data Centre with one (1) server deployed.

6.2.2.2 The stand-alone configuration shall consist of twenty-one (21) sets, with one (1) server each, where:

- Twenty-one (21) sets are to be deployed at NATO Nations infrastructure at twenty-one (21) different locations.
- Five (5) stand-alone configurations shall be delivered for future deployment.

6.2.2.3 The installation of the stand-alone configuration shall be fully automated to allow National CIS departments to do the installation on National EW network servers.

6.2.2.4 The supporting systems used for training and maintenance:

- One (1) system deployed at the Integration Testbed used during the project implementation for supporting system integration and testing, and after the implementation to be used as a Support Environment used for system support and maintenance.
- One (1) system deployed at Reference System, for IV&V testing of NEDB-NG and later other Functional Services interfacing NEDB-NG.
- One (1) system deployed at JEWCS facility for training.

6.2.3 The IOC and FOC installation scopes

6.2.3.1 Within the IOC, the Contractor shall deploy the IOC Product Baseline at one (1) location of the NATO Data Centres and allow remote access from users at selected four (4) locations. The locations accessing the IOC baseline of NEDB-NG are to be called the Pilot locations.

6.2.3.2 In addition to the installation, the Contractor shall install and activate software as required for training on one (1) selected NATO site. The system deployment and support effort related with the training is included in WP 6.

6.2.3.3 During IOC, the Contractor shall capture the lessons learned to update the implementation documentation to be delivered at the FOC.

[1] Note: The NATO Nations (stand-alone) client users (DBA and DBP) are distributed over 21 different national EW network servers.

6.2.3.4 At the FOC the Contractor shall deploy the final version of the system at all NATO sites authorised for server installations, as listed in the Table 3, including the update of the baseline installed at the NATO Data Centre.

6.2.3.5 The Installation at NATO Nations (Stand-alone) is a National issue. The Contractor shall support the NATO Nations to resolve unexpected problems.

6.3 Site Surveys

6.3.1 System Implementation Plan (SIP)

6.3.1.1 The Contractor shall develop the SIP, detailing the overall schedule for site implementation activities as defined in SOW, Section 4.

6.3.1.2 The SIP shall include site survey workbook with a Site Survey Questionnaire, to be executed during the site surveys.

6.3.1.3 The Contractor shall develop and maintain Site Installation and Activation Procedures as part of the System Implementation Plan.

6.3.1.4 The Contractor shall provide the initial version of the SIP for Purchaser review within NEDB-NG Project Working Group during IOC.

6.3.1.5 The initial SIP shall be approved at respective TRR. The Contractor shall update the SIP and provide the final version to be approved at the DRR.

6.3.2 Site Survey Preparation

6.3.2.1 The Contractor shall execute site surveys at all authorised sites using the process described by the Contractor in the SIP, and approved by the Purchaser.

6.3.2.2 As the prerequisite to start site surveys, the Contractor shall have provided generic site survey workbook and checklists with fill-in forms, being the part of the System Implementation Plan, to the designated Purchaser's Point of Contacts (POCs), and had the survey schedule tentatively agreed.

6.3.2.3 The Contractor shall convey initial information about the site configuration from Purchaser's representation at the Implementation Working Group.

6.3.3 Site Survey Execution

6.3.3.1 The Contractor shall perform site surveys at all sites planned for deployment during the period from eigth (8) to twelve (12) months before the planned installations.

6.3.4 Site Survey Report

6.3.4.1 The Contractor shall develop Site Survey Report, separately for each site, and deliver it to the Purchaser at latest one (1) week after the survey.

6.3.4.2 The report shall include description of the site, as specified in Section 4.8 of the SOW.

6.4 Preparation, Installation and Activation

6.4.1 Site Preparation

6.4.1.1 Prior to Site Installation, the Contractor shall verify that the Purchaser's staff at the sites has performed all agreed preparation activities necessary to start site installation and the required infrastructure and services are available.

6.4.2 Site Installation

6.4.2.1 At each of the sites, the Contractor shall install the required Contractor- and Purchaser-furnished COTS packages, and configure the equipment to host the NEDB-NG Product Baseline, and perform all other installation tasks as specified in Section 4.8 of the SOW.

6.4.3 Site Activation

6.4.3.1 At each site, the Contractor shall perform site activation of the NEDB-NG capability, as specified in Section 4.8 of the SOW. On completion of all work at the site, the Contractor shall demonstrate that the site is ready for operational use.

6.4.3.2 The Contractor shall install Test Databases used to support subsequent testing.

6.4.3.3 The Contractor shall install Training Databases to support Training Sessions.

6.4.3.4 The Contractor shall plan and execute site activation to avoid disturbance for operational users and ensure that no operational data is lost.

6.4.3.5 The Contractor shall coordinate site activation, included in the Work Package with support and training activities performed in WP6 and WP7.

6.4.4 Site Activation Test (SAT)

6.4.4.1 The Contractor shall conduct the SAT to demonstrate that the NEDB-NG capability at the installed site is accessible to authorized local and remote users.

6.4.4.2 The Contractor shall perform and report the results of the site activation testing in the in the Site Activation Test Report.

6.4.5 Data Migration Test

6.4.5.1 The Contractor shall conduct Data Migration to demonstrate that NEDB data, NEDB-EO data and Active Items will be migrated into the NEDB-NG without any loss of data and data integrity.

6.4.5.2 The Contractor shall provide a Migration Test Report of the migration result including a Log File of the migration with data which is not compliant with the NEDB-NG structure and/or constraints.

6.4.6 Final System Acceptance

6.4.6.1 Final System Acceptance for NEDB-NG will be declared after the FOC when all NEDB-NG sites and user locations have been activated and trained to use the software in the full NEDB-NG scope.

7 WORK PACKAGE 6 - TRAINING SUPPORT

7.1 General

7.1.1 As specified in Section 6 of the SOW, the Contractor shall develop training courses and deliver training session to NATO Users and Trainers.

7.1.2 Work Package Performance Start Date (WP PSD):

- To be started not later than eight (8) months after EDC,
- To be completed before FSA.

7.1.3 Work Package Deliverables:

- Training Plan (TP) (draft version to be delivered at CDR)
- Training Programme
- Training Materials
- Computer Based Training (CBT)

7.1.4 The Contractor shall deliver draft versions of the Work Package deliverables following the delivery methodology (as described in Section 4 of the SOW), in alignment with the NEDB-NG Project Working Group (PWG) Workshops.

7.1.5 The Contractor shall develop training materials and support the initial delivery of training classes in support of NEDB-NG and any subsequent modifications to the training materials during the period of performance of this Work Package.

7.1.6 If needed, the Contractor staff may work at designated Purchaser's sites, as required to produce deliverables of this Work Package.

7.1.7 The Contractor shall report on activities under this Work Package as part of all Project Highlight Reports and Reviews conducted during the period of performance of this Work Package.

7.2 Training course development

7.2.1 Training Plan

7.2.1.1 The Contractor shall provide Training Plan as specified in Section 6 of the SOW.

7.2.1.2 The Contractor shall provide the final version of the Training Plan for Purchaser review at Training Material Review (TMR).

7.2.2 Training Programme

7.2.2.1 The Training Needs Analysis will be conducted by the Purchaser. The Contractor shall support that process by providing information for the analysis.

7.2.2.2 The Contractor shall support developing a Training Programme Based on the Training Needs Analysis, as specified in Section 6 of the SOW.

7.2.3 Training Material

7.2.3.1 The Contractor shall develop training material as described in Section 6 of the SOW, to be delivered during the following types of courses:

- NEDB-NG Administrators Training (Admin Training)
- NEDB-NG User (DBM/DBA/DBP/DBR) Training (User Training)
- NEDB-NG Trainers Training

7.2.3.2 The Contractor shall configure the Training Materials to allow training customisation depending on the user roles, to be defined in the Training Needs Analysis.

7.2.3.3 As part of the training material, the Contractor shall prepare the training data allowing replaying of training scenarios.

7.2.3.4 The Contractor shall develop the Training Materials in close collaboration with Purchaser Staff.

7.2.3.5 The final version of the training material shall be provided at TMR.

7.3 Training Delivery

7.3.1 Training Organisation

7.3.1.1 The Contractor shall deliver the training courses based on the developed training course materials.

7.3.1.2 The Contractor shall provide a hard and an electronic copy of all course materials to each trainee before the training event.

7.3.1.3 The Contractor shall be able to deliver multiple sessions of each course.

7.3.1.4 The training sessions shall be delivered by accessing the NEDB-NG system deployed during WP5 - Site Activation and the assigned training location.

7.3.1.5 The Contractor shall be able to deliver the training classes with up to fifteen (15) trainees participating in one training event.

7.3.1.6 During the training sessions, the following elements shall be validated:

- Training environment and equipment,
- Training material (courseware),
- Training Database,
- Training plan,
- Assessments.

7.3.2 NEDB-NG Administrators Training

7.3.2.1 The contractor shall provide NEDB-NG Administrators Training to the NATO team responsible for operational support and maintenance of the NEDB-NG capability.

7.3.2.2 The NEDB-NG Administrators Training shall last from one (1) to two (2) days.

7.3.2.3 The NEDB-NG Administrators Training shall address all the administrators tasks defined for the NEDB-NG in the System Requirements Specification Section xx.

7.3.2.4 The NEDB-NG Administrators Training shall allow the Purchaser to (re)install and maintain the NEDB-NG without the Contractor's support.

7.3.3 NEDB-NG Users Training

7.3.3.1 The Contractor shall provide NEDB-NG Users Training to the users of the NEDB-NG capability to work efficiently in their respective role (DBM/DBA/DBP/DBR).

7.3.3.2 The training shall include:

- System demonstration,
- Hands-on exercises with predefined testing scenarios,
- Questions and answers session

7.3.3.3 The NEDB-NG User Training shall last from one (1) to four (4) days.

7.3.4 NEDB-NG Trainers Training

7.3.4.1 The Contractor shall provide NEDB-NG Trainers Training to enable Purchasesr's trainers to train NEDB-NG Users after FSA.

7.3.4.2 The NEDB-NG Trainers Training shall last from three (3) to five (5) days.

7.3.4.3 The NEDB-NG Trainers Training shall include:

- NEDB-NG advanced user training
- Practical training on training delivery method

7.3.5 Updating Training Materials

7.3.5.1 During the IOC training sessions, the following elements shall be validated:

- Training environment and equipment,
- Training material (courseware),
- Training plan,
- Assessments.

7.3.5.2 The Contractor shall collect from course participants' feedback on the quality of the provided courses and used training materials.

7.3.5.3 The Contractor shall update the training materials based on the collected feedback information. The changes have to be authorised by the Purchaser.

7.4 Reviews

7.4.1 Training Material Review (TMR)

7.4.1.1 The Contractor shall conduct TMR at the Purchaser's facility as described in the Section 6 of the SOW.

7.4.1.2 The TMR shall verify the quality of the training materials corresponding to the scope delivered during the System Engineering.

7.4.1.3 The successful result of the TMR is the prerequisite for starting delivery of the NEDB-NG training for FOC.

7.4.1.4 The Contractor shall ensure stakeholder involvement and input into the Training Planning and development of Training Programme, by facilitating their participation in the NEDB-NG Project Working Group.

7.4.1.5 The TMR shall be held not later than fifteen (15) months after EDC.

8 WORK PACKAGE 7 – SYSTEM SUPPORT

8.1 General

8.1.1 The Contractor shall design, in accordance with the ILS and LSA requirements described in the SOW, the appropriate Logistic support to the system.

8.1.2 The contractor shall develop the System Support documentation and deliver support to Testing and Evaluation, as described in the SOW Section 6

8.1.3 The Contractor shall support Initial NEDB-NG Testing and Evaluation (IOT&E) at the IOC Site.

8.1.4 The Contractor shall support NEDB-NG Testing and Evaluation (OT&E) at all authorised sites.

8.1.5 Work Package Performance Start Date (WP PSD):

- To be started not later than eight (8) months after EDC,
- To be completed at the FSA.

8.1.6 Some of the system support activities shall be initiated during the system development phase, and the design of logistics service and design of the system shall go in parallel. Deliverables of WP7 will be provided in a draft form at earlies stages to support the development of the integrated logistic support.

8.1.7 Work Package Deliverables:

- Maintenance Concept (draft version to be provided at CDR)

- Support Concept (draft version to be provided at CDR)
- Transition Plan
- Integrated Logistics Support Plan (ILSP) (also covered through the WP1)
- System Operational Test (SOT) report
- Support to initial NEDB-NG T&E and NEDB-NG T&E
- Operation Installation and Maintenance Manuals

8.2 Development of NEDB-NG System Support Documentation

8.2.1 The Contractor shall support the Purchaser in planning the support and maintenance of the NEDB-NG system. This shall include development of the support documentation defined in the SOW Section 6.

8.2.2 The contractor shall present the draft NEDB-NG System Support Documentation for the NEDB-NG Project Working Group at TRR. The documents shall be formally reviewed and accepted at the DRR review.

8.2.3 The acceptance of the System Support Documentation is the prerequisite for starting system installation within WP5.

8.3 Organisation of Support

8.3.1 Support to initial NEDB-NG Testing and Evaluation (T&E)

8.3.1.1 The Contractor shall support initial T&E of the NEDB-NG capability at the IOC Site by providing assistance for usage of the system by NEDB-NG operational users and system administrators.

8.3.1.2 The Contractor shall be able to support initial NEDB-NG T&E with intervals assuming to the total effort of up to 5 man-weeks, with up to two (2) Contractor experts working at the same time.

8.3.1.3 The Contractor shall ensure the designated individuals are available to begin work at the Purchaser's facility within one (1) week of the start of WP4. The exact date will be agreed with the Purchaser.

8.3.1.4 The purpose of this activity is to provide early support to the NEDB-NG software deployed as part of the IOC, identify any discrepancies between the system delivered and its operational needs, and capture them as deficiencies or recommended changes to be considered in the implementation for the FOC.

8.3.2 Support to NEDB-NG Testing and Evaluation (T&E)

8.3.2.1 The Contractor shall support T&E of the NEDB-NG capability at all authorised sites by providing assistance for usage of the system by NEDB-NG Users and system administrators.

8.3.2.2 The Contractor shall be able to support NEDB-NG T&E with intervals assuming to the total effort of up to 2 man-weeks, with up to two (2) Contractor experts working at the same time, during the time between DRR and FSA.

8.3.2.3 The Contractor shall ensure the designated individuals are available to begin work at the Purchaser's facility within one (1) week after the first installation of the FSA Product Baseline. The exact date will be agreed with the Purchaser.

8.3.2.4 The purpose of this activity is to provide early support to the NEDB-NG software deployed as part of the FOC, identify any discrepancies between the system delivered and its operational needs, and capture them as deficiencies or recommended changes.

8.3.3 Managing Contractor's Effort

8.3.3.1 The Contractor's support to NEDB-NG T&E shall be provided on the Level of Effort (LoE) basis, in multiple portions of full-time effort.

8.3.3.2 During the performance of the NEDB-NG T&E the Contractor shall work at least eight (8) hours per business day within the normal business hours at the Purchaser's facility.

8.3.3.3 In order to align the use the Contractor's resources with the project implementation schedule, the Purchaser may request to postpone the delivery of a portion of the NEDB-NG T&E Support for the agreed duration.

8.3.3.4 The Contractor shall be responsible for any preparation and training required to bring the individual(s) to the performance level required to fulfil their roles.

8.3.3.5 The Purchaser's on-site representative will assign and monitor progress on specific tasks within the scope of this Contract and this Work Package.

8.3.3.6 The principal location of delivery of the NEDB-NG T&E Support is Mons, Belgium.

8.3.3.7 The objective of the Contractor NEDB-NG T&E support is to resolve any technical issues related with operational use of the NEDB-NG system and to facilitate the use of the system to support On the Job Training (OJT).

8.4 Support Tasks

8.4.1 Support to System Administration

8.4.1.1 During the performance of this Work Package, the contractor shall provide T&E support to the NEDB-NG baseline deployed during IOC and FOC.

8.4.1.2 Before the formal hand-over of the NEDB-NG capability at FSA, the contractor has full responsibility over the performance of the NEDB-NG system. However, as part of the transition the Purchaser's support organisation shall be involved in the support activities, according to the Transition Plan.

8.4.1.3 The Contractor personnel shall be intimately familiar with the NEDB-NG system capabilities and construct, and prepared to assist site support staff.

8.4.1.4 Since the Purchaser is implementing a centralised system support organisation, most of the System Administration's support task will be performed at the NCI Agency in Mons, Belgium.

8.4.2 Support to Users

8.4.2.1 The Contractor shall support all NEDB-NG Users and be able to execute other ad-hoc tasks, related with the use of the NEDB-NG capability.

8.4.2.2 Within the task of providing Support to Users, the Contractor shall visit major NEDB-NG locations to introduce the NEDB-NG system to its users and support the Testing and Evaluation of NEDB-NG capability.

8.4.3 System Operational Test (SOT) report

8.4.3.1 The Contractor shall support the identification, recording and initial investigation of issues and deficiencies surfaced during the NEDB-NG T&E period.

8.4.3.2 The Contractor personnel shall capture results of the NEDB-NG Testing in the System Test report, which shall be approved by the Purchaser.

9 WORK PACKAGE 8 – THIRD LEVEL SOFTWARE SUPPORT (OPTIONAL)

9.1 General

9.1.1 The 3rd Level Software Support is to provide corrective, adaptive and preventive O&M based on a prolonged software warranty.

9.1.2 The contractor shall provide 3rd level support and implementation of necessary changes in the software necessary to keep it operational and interoperable, considering the changes in the technical environment, including upgrades in the underlying COTS and Operating System, as well as adaptations in NATO and international standards defining system interfaces.

9.1.3 Through the whole duration of the work package, the Contractor shall maintain the NEDB-NG baseline, and if required by the Purchaser, integrate adjustments made by the Purchaser

9.1.4 Work Package Performance Start Date (WP PSD):

- To be started after expiration of software warranty period,
- To be delivered in one year increments, up to five (5) years in total.

9.1.5 Work Package Deliverables:

- NEDB-NG software patches and upgrades, distributed at least once a year.
- Updates to NEDB-NG product baseline documentation.
- Updates to the manuals and training materials.
- Support to the approval of the updated version.

9.2 Extended Warranty

9.2.1 Within the scope of this work package, the Contractor shall provide extended warranty for the complete NEDB-NG software, to include resolution, testing and validation of any faults and deficiencies identified in

the NEDB-NG product baseline

9.2.2 The Contractor shall deliver the 3rd Level Support from its own location. If necessary, in relation of providing the support, the Contractor may visit selected Purchaser's locations.

9.3 Technology Refresh

9.3.1 As specified in Section 5 of the SOW, the Contractor shall update the NEDB-NG baseline to support necessary technology refresh resulting from changes in:

- Infrastructure software (e.g. the operating system and virtual machine software)
- 3rd party COTS components embedded in the NEDB-NG
- New releases of the COTS provided as part of the NEDB-NG solution
- NATO standards defining NEDB-NG interfaces (e.g. ATP-45)

9.3.2 During the duration of the Third Level Software Support and Technology Refresh contract, the Contractor shall provide to the Purchaser, with no additional costs, access to the new versions of the Contractor's NEDB-NG COTS used to build the NEDB-NG solution.

9.3.3 Either the Purchaser or the Contractor may request implementing the technology refresh of NEDB-NG product baseline.

9.3.4 The Contractor shall analyze business case for implementing technology refresh for NEDB-NG product baseline.

9.3.5 The decision on implementing new versions of NEDB-NG software depends on the Purchaser.

9.4 Support to the Approval of NEDB-NG System Upgrades

9.4.1 The Contractor shall update system documentation and training materials to reflect the changes implemented in the software as part of warranty repair and technology refresh.

9.4.2 The new NEDB-NG version shall comply with the security setting valid for the time of the deployment.

9.4.3 Any new versions of NEDB-NG software, including the maintenance patches, must pass the formal approval process, including as minimum the IV&V testing as described in the SOW Section 4.7.

9.4.4 The Contractor shall come to the Purchaser's location to support the approval of the new versions of the NEDB-NG software at the Purchaser's location, including testing support.

9.4.5 In case during testing major errors are found, that prevent the new version from being approved, the contractor shall correct the failures.

10 WORK PACKAGE 9 – HARDWARE AND SOFTWARE LICENSES (CONTRACT OPTION)

10.1 General

10.1.1 This Work Package and associated sub-CLINs addresses Hardware and Software Licenses provided by the Purchaser.

10.1.2 Each sub-CLIN below this Work Package may be exercised from the Effective Date of Contract (EDC).

10.1.3 The performance start date for each sub CLIN of this Work Package shall be agreed once the Purchaser takes a decision to officially exercise this option.

10.2 Hardware provided by the Purchaser

10.2.1 NATO will provide hardware to host the NEDB-NG on the following sites:

10.2.1.1 One (1) system deployed at the Data Centre for operational use of the NEDB-NG.

10.2.1.2 One (1) system deployed at the Support Centre to provide support to the NEDB-NG.

10.2.1.3 One (1) system deployed at the Integration Testbed for IV&V testing of NEDB-NG and later other Functional Services interfacing NEDB-NG.

10.2.1.4 One (1) system deployed at JEWCS facility for training.

10.3 Software Licences provided by the Purchaser

10.3.1 NATO currently has an Enterprise Agreement regarding the following products:

10.3.1.1 Windows 2008 Server Enterprise Edition Software and Client Access License.

10.3.1.2 SQL Server 2008 Enterprise Software and Client Access License.

10.3.1.3 Internet Information Server (Version 6 or higher) provided as part of Windows 2008 Server Enterprise.

10.3.1.4 McAfee License.

10.3.1.5 ARCGIS Server License.

10.3.1.6 Team Foundation Server Software and Client Access License.

10.3.2 The above licences are to be provided as Purchaser Furnished Items **but only** for NEDB-NG Product Baseline delivered to NATO.

10.3.3 Other licences shall be provided by the Contractor.

11 WORK PACKAGE 10 – SOFTWARE DEVELOPMENT AND TECHNICAL SUPPORT (CONTRACT OPTION)

11.1 General

11.1.1 This Work Package and associated sub-CLINs addresses Software Development and Technical Support for minor adaptations in the NEDB-NG software.

11.1.2 This Work Package is not intended to support corrective actions taken by the Contractor to address test failures.

11.1.3 Each sub-CLIN below this Work Package may be exercised between IOC and FSA. The Level of Effort envisioned for this WP is not to exceed 160 man-days.

11.2 Software Development

11.2.1 The Contractor shall support the implementation of adaptations to the NEDB-NG software based on the Purchaser agreed changes identified during testing and piloting.

11.2.2 It shall be considered that the system adaptations will be significant enough to be a Minor Release as defined in Section 5.2 of the SOW.

11.2.3 Activities in this WP will follow the processes defined in WP3

11.3 Technical Support

11.3.1 The Contractor shall provide technical support to the approval of the adaptations in the NEDB-NG software, including testing support.

11.3.2 In case during testing major deficiencies are found, that prevent the adaptations from being approved, the contractor shall correct the deficiencies.