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NCIA/ACQ/ASG/15/1843
04 January 2016

To: Prospective Bidders
From: The General Manager, NATO Communications and Information Agency (NCI Agency)

Subject: **AMENDMENT NO. 2 TO THE INVITATION FOR BID NO. IFB-CO-13733-BRASS-BGR**
PURCHASER ANSWERS TO CLARIFICATION REQUESTS

'Provide Broadcast, Maritime Rear Link and Ship-Shore Baseline Implementation South in Bulgaria (BRASS-BGR)'

References:
A- AC/4-2261 (1996 Edition)
B- AC/4(PP)D/26580-ADD1, AC/4-DS(2012)0028
C- AC/4(PP)D/26580-ADD2, AC/4-DS(2013)0022
D- AC/4(PP)D/26580-ADD3, AC/4-DS(2015)0012
E- NCIA/ACQ/ASG/2015/832, dated 20 February 2015
F- NCIA/ACQ/ASG/2015/1607, dated 29 October 2015
G- NCIA/ACQ/ASG/2015/1766, dated 1 December 2015

Prospective Bidders:

1. At Reference (F) your firm was invited to participate in an *International Competitive Bid* (IFB) for the provision of Broadcast, Maritime Rear Link (MRL) And Ship-Shore Baseline Implementation South in Bulgaria.

2. At Reference (G) the NCI Agency issued, through Amendment No. 1 to the IFB, the slides presented during the Bidders Conference held in Varna (Bulgaria) on 26 November 2015.

3. The purpose of this Amendment No. 2 to the IFB is to publish the answers to the Clarification Requests received from Prospective Bidders (Attachment (B), CRs A1-A4, T1-T88), and to amend the subject IFB accordingly (Attachments (C) to (H)).

4. In order to give a further opportunity for Prospective Bidders to submit Clarification Requests, and in response to the Request for Extension received from one of the Prospective Bidders, **THE BID CLOSING DATE IS HEREWITH EXTENDED BY TWENTY-ONE (21) CALENDAR DAYS AND IS NOW AS FOLLOWS: 15:00 HOURS (BRUSSELS TIME) ON 11 FEBRUARY 2016**.

NATO Communications and Information Agency
Agence OTAN d'information et de communication
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1140 Brussels, Belgium
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5. As a direct or indirect result of the Clarification Requests, Book I (Attachments (C) and (D)), Book II Part I Contract Schedules (Attachment (E)), Book II Part II Contract Special Provisions (Attachment (F)), Book II Part IV Statement of Work (Attachment (G)) and its Annexes A (Attachment (H)) and C, have been amended and are re-issued in their entirety. The changes have been marked in yellow.

6. With the exception of the revisions mentioned above, all other IFB documents remain unchanged from their last issued version.

7. Bidders are reminded to treat classified material under subject IFB in accordance with the applicable Security regulations. When received by the Bidders, such classified material shall be under their responsibility and Bidders shall be responsible, in accordance with NATO and National Security regulations, for the proper handling, storage and control of this classified material, including any transmission to partners and sub-contractors. **Bidders are cautioned that any classified material cannot be transmitted through electronic transmission over the Internet nor published on the Internet**.

8. To receive a copy of amended SOW Annex C by commercial courier, Prospective Bidders shall request this document by filling out and sending the **Certificate of Security Obligation**, which is in Book I Annex B-6, **no later than within fourteen (14) working days** of the release of this IFB Amendment No. 2. Additional details are provided in Book I Section 1.4. Prospective Bidders which have already received the original version of the SOW Annex C at Reference (F) are not requested to re-submit the Certificate of Security Obligation, but only to send an e-mail request of the amended document.

9. For companies which have not yet done so, you are kindly reminded to complete and return the **Acknowledgement of Receipt** form at Reference (F), informing the NCI Agency of your intention to bid/not to bid.

10. The NCI Agency sole Point of Contact (POC) for all information concerning this IFB is:

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Avenue du Bourget 140
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NCIA/ACQ/ASG/15/1843

FOR THE GENERAL MANAGER:

L.T. Herway
Chief of Contracts

Attachments:

(A) Distribution List
(B) Purchaser answers to the Clarification Requests (first release)
(C) Electronic Soft Copy (PDF) of IFB-CO-13733-BRASS-BGR-AMD2 Book I Bidding Instructions
(D) Electronic Soft Copy (.XLS) of IFB-CO-13733-BRASS-BGR-AMD2 Book I Bidding Instructions Annex A-2
(E) Electronic Soft Copy (PDF) of IFB-CO-13733-BRASS-BGR-AMD2 Book II Part I Contract Schedules
(F) Electronic Soft Copy (PDF) of IFB-CO-13733-BRASS-BGR-AMD2 Book II Part II Contract Special Provisions
(G) Electronic Soft Copy (PDF) of IFB-CO-13733-BRASS-BGR-AMD2 Book II Part IV Statement of Work
(H) Electronic Soft Copy (PDF) of IFB-CO-13733-BRASS-BGR-AMD2 Book II Part IV Statement of Work Annex A

Attachment A
Distribution List for
IFB-CO-13733-BRASS-BGR-AMD2

NOMINATED BIDDERS	1 Each
NATO Delegations (Attn: Investment Adviser):	
Belgium	1
Bulgaria	1
Canada	1
Czech Republic	1
Denmark	1
Estonia	1
Germany	1
Greece	1
Hungary	1
Iceland	1
Italy	1
Latvia	1
Lithuania	1
Luxembourg	1
Netherlands	1
Norway	1
Poland	1
Portugal	1
Romania	1
Slovakia	1
Slovenia	1
Spain	1
Turkey	1
The United Kingdom	1
The United States	1
Belgian Ministry of Economic Affairs	1
Embassies in Brussels (Attn: Commercial Attaché):	
Bulgaria	1
Canada	1
Czech Republic	1
Denmark	1
Estonia	1
Germany	1
Greece	1
Hungary	1
Iceland	1
Italy	1
Latvia	1

Lithuania	1
Luxembourg	1
Netherlands	1
Norway	1
Poland	1
Portugal	1
Romania	1
Slovakia	1
Slovenia	1
Spain	1
Turkey	1
The United Kingdom	1
The United States	1

Distribution for Information (Blind to Bidders):

NATO HQ

NATO Office of Resources
Management and Implementation Branch – Attn: Deputy Branch Chief 1

Director, NATO HQ Communications and Information Staff
Attn: Executive Co-ordinator 1

SACTREPEUR
Attn: Investment Assistant 1

Strategic Commands
HQ SACT Attn: ACOS C4ISR 1
ACO AGSIO Attn: SPT CIS Director 1

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ACQ Chief of Contracts – Mr L.T. Herway 1
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ACQ Senior Contracting Assistant – Ms V. Navikaitė 1
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SStrat NLO – Mr C. Ulsh (via Mr E. Pecorella, Mr. D. Harman) 1
Legal Adviser – Ms S. Rocchi (through Mr V. Roobaert) 1
FMU – Ms I. Nechelput 1
Service Strategy – Mr C. Shawcross 1
DM – Mr. E. Lesbaupin 1
NSII SL Chief – Mr T. Plachecki 1
NSII SL WMSA – Mr. D. Kallgren 1

Registry 1

NCI Agency - NATEXs
All NATEXs (except Albania, Croatia, France) 1 Each

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
A.1	Book I Par. 2.15.2, 4.2.3 and 4.3.1a, Bidders' Conference Presentation related to Contractual matters	Could you please clarify the "conditioned" offers with an example?	Conditioning the Delivery Dates set by Prospective Contract SSS, imposing particular conditions to the pricing listed in the Bidding Sheets, Supplemental Agreements inconsistent with the terms of the Prospective Contract.	No
A.2	Book I Annex B-13	Can an entity (firm, company, professional expert etc) for the present IFB, to participate as a subcontractor with more than one bidders?	Yes, one entity may be identified as a subcontractor by multiple Prime Bidders.	No
A.3	SOW Annex-C	What if it results that the height of a DLOS mast is too low?	Engineering Changes after Contract Award will be dealt in accordance with the stipulations of the Contract General/Special Conditions.	No
A.4	Appendix 1 to Book II Part IV Annex-A Section 2	In the referred document is reported: "2.5. The design, production and installation of the antenna masts shall comply with following standards: 2.5.1. EN ISO 1461 –. Hot dip galvanized coatings on fabricated iron and steel articles; 2.5.2. EN 10204 Metallic materials. Types of inspection documents 2.5.3. EN 10025 – Hot rolled products of structural steels. General technical delivery conditions;	1. It is the Contractor's responsibility to verify and demonstrate, to the satisfaction of the Purchaser, that structures, equipment and/or systems can be designed, built and installed on the territory of HN even though they are designed, built and/or installed according to US and/or CANADA standards.	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
		2.5.4. EN ISO 14 713 (Part 1, 2 and 3) – Zinc coatings -- Guidelines and recommendations for the protection against corrosion of iron and steel in structures; 2.5.5. EN 10210-1 – Hot finished structural hollow sections of non-alloy and fine grain steels; 2.5.6. ISO 898 (part 1, 2 and 5) – Mechanical properties of fasteners made of carbon steel and alloy steel; 2.5.7. ISO 5817 – Welding -- Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) -- Quality levels for imperfections; 2.5.8. ISO 6520-1 – Welding and allied processes -- Classification of geometric imperfections in metallic materials -- Part 1: Fusion welding-" Taking in consideration that most of the antenna manufacturing are USA companies and most of the primary products available in the market are compliant with the American and Canadian Standards , already and widely used in the NATO existing system, considering also that, despite all the efforts spent we have not been able to find a formal cross reference among the American and European standards, considering, finally, that the available literatures reports that the two standards American and European, in principle are fully compatible unless a few slight differences, Question: With respect to the following comparison table we ask, if the USA and Canada standards as mentioned in the table could be accepted as an valid alternative to the EU Standards?	2. If requirement 1. is met in accordance with HN local respective laws and regulations, USA and Canada standards could be accepted as a valid alternative to the EU Standards on the condition that: - USA and Canada standards stipulate requirements equivalent to or exceeding requirements stipulated in the EU standards. Verification and demonstration of this condition, to the satisfaction of the Purchaser, is sole responsibility of the Contractor; - All contractual requirements stipulated in the SOW are met although USA and CANADA standards are applied. 3. NOTE: Please pay attention to BOOK II PART III (GEN.PROV.), paragraph 6 AUTHORISATION TO PERFORM/CONFORMANCE TO NATIONAL LAWS AND REGULATIONS, particularly sub-paragraph 6.2.	

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*

REF	DESCRIPTION	EU STDS	USA SDTS
2.5.1	Hot dip galvanized coatings on fabricated iron and steel articles;	EN ISO 1461	ASTM A 123
2.5.2	Metallic materials. Types of inspection documents	EN 10204	ASTM A36 or CSA G40.21
2.5.3	Hot rolled products of structural steels. General technical delivery conditions;	EN 10025	ASTM A36 or CSA G40.21
2.5.4	Zinc coatings -- Guidelines and recommendations for the protection against corrosion of iron and steel in structures;	EN ISO 14 713	ASTM A 123
2.5.5	Hot finished structural hollow sections of non-alloy and fine grain steels;	EN 10210-1	Hot dipped galvanize per ASTM A 123
2.5.6	Mechanical properties of fasteners made of carbon steel and alloy steel;	ISO 898	ASTM A325, ASTM A307

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
		2.5.7 Welding -- Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) -- Quality levels for imperfections; ISO 5817 CSA W59-Steel, CSA W59.2 Aluminum 2.5.8 Welding and allied processes -- Classification of geometric imperfections in metallic materials -- Part 1: Fusion welding 2.2.8 ISO 6520-1 CSA W59-Steel, CSA W59.2 Aluminum		
T.1	SOW Annex-C	Where will the main power supply be located in the ACMS?	The MPDB will be located in room 021.1 (see new drawing File: IFB AMD1_Figure-2 of Appendix 1 to SOW Annex-C)	Yes - IFB AMD2
T.2	SOW Annex-C	Can the Contractor use the current mast for DLOS antenna in ACMS and other sites?	No	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.3	SOW paragraph 3.4 and 3.5	Is it Contractor responsibility to make the wall penetrations for the cable to the DLOS antenna?	It is HN civil works contractor's responsibility Please see SOW paragraph 3.4.4.hh. DLOS radios shall be installed by the Contractor at the adjacent room unless self-contained DLOS radios are installed on the antenna mast.	No
T.4	SOW Annex-C	Is there line of sight between the three sites?	Yes, there is line of sight between the three sites with proper masts.	No
T.5	SOW Annex-C	Will the outdoor fuel storage tanks be removed in the ACMS?	Yes, they will be removed.	No
T.6	SOW Annex-C	If it requires, can HN provide to use a second room for BRASS equipment?	Yes, only for the black equipment	No
T.7	SOW Annex-C	What is the dimension of the area for BRASS system in the Tx? There is a minor mismatch in the drawings in Annex C. The drawing says that there are 6 windows, but in reality there are 7.	The revised set of drawings will be released in the updated version of SOW Annex C (File: IFB AMD1_Figure 4 of Appendix 1 to SOW Annex-C). Please disregard the number of the Windows at Figure 6 of Appendix-1 to SOW Annex-C.	Yes, IFB AMD2

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.8	SOW Annex-C	What is the border of antenna field and Military area? There are just 2 drawings and one google picture which do not provide many details. Is there sufficient space? Please provide scaled drawings for antenna fields of Tx and Rx sites	The revised set of drawings will be released in the updated version of Annex C. Please see Revised Figure-3 (Tx site Antenna Field) and Figure 7 (Rx site Antenna Field) of Appendix-1 to SOW Annex-C	Yes, IFB AMD2
T.9	SOW Annex-C	What is the height of the existing national HF radio antennas mast in Tx and Rx sites?	The height of the existing national HF radio antennas mast : - in Tx site – 40 m - in Rx site – 20 m	No
T.10	SOW Annex-C	Will old national DLOS antennas mast be removed from the transmitter site?	No, it will not be removed. An additional DLOS antenna mast shall be installed by the Contractor	No
T.11	SOW Annex-C	Will the dimensions of the room stay the same in ACMS?	No, a raised floor will be installed 40 cm above the concrete floor. It will be done for BRASS and Crypto rooms	No
T.12	SOW Annex-C	Will there be an equipment storage for all sites? If so, what are the dimensions for storage rooms for ACMS, Tx and Rx sites	The storage will be provided to the equipment such as large volume antenna mast, there will be no storage available. ACMS site. There are two possible storage facilities: The first one is situated 2 km from the ACMS	Yes, IFB AMD2

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
			site. It is a vehicle cage with dimensions: height – 4m., width – 4m., and length – 18.7m. The entering check-point is 4.4 meters wide and 4.2 meters high. The second one is a room in ACMS site building. It's dimensions are: height – 2.8m., width –3 m. and length – 4.m. The front door is 1 m in width and 2 m in height. Tx site. There are two possible storage facilities: The first one is a room situated in TX site building. Its dimensions are: height – 3m, width – 6.2m and length – 13.2m. The front door is 1.6m in width and 2.2m in height. The second one is an old mess-room situated 5-6 km from the transmitting site. Its dimensions are: height – 3.5m, width – 7.2m, and length – 23.2m. The front door is 1.6m in width and 2.2m in height. There are two	

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
			stairs in front of the front door. Rx site. There is one possible storage facilities: It is an old mess-room situated 2 km from the receiving site. It's dimensions are: height – 3.5m, width – 7.2m and length – 23.2m. The front door is 1.6m in width and 2.2m in height. There are two stairs in front of the front door. On all of the three sites it is possible large-scale spare parts to be stored outdoor. Each site is a military armed zone.	
T.13	SOW Annex-C	Is a fibre connection possible between the sites?	No, it is not possible.	No
T.14	SOW Annex-C	Will Elevated concrete floor in the Crypto room in ACMS site be removed?	Yes, it will be removed	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.15	SOW Annex-C	Has the connectivity of three sites been tested?	Yes it was tested	No
T.16	SOW Annex-C	Will National Crypto be used for this project?	No, only NATO Crypto will be used for BRASS BGR project.	No
T.17	SOW Annex-C	Is it possible to add places where antennas will not be removed into the drawings?	Please see Revised Figure-3 and Figure 7 of Appendix-1 to SOW Annex-C	Yes IFB AMD2
T.18	SOW Annex-C	Will HN prepare access roads to Antennas in Rx and Tx sites? Such as 30 tones capacity cranes can ride to the rotatable antennas	Yes, it is HN's responsibility. Please see SOW paragraph 3.4.4.x.	No
T.19	Book II Part I Section 1 CLIN 5.1.11	What is the TEMPEST protection in SSS	TEMPEST protection covers the additional hardware required such as TEMPEST enclosures/racks and filters. Please see Book II Part IV (SOW) paragraphs 3.5.20; 4.5; 12.5.1.h as well as SOW Annex-A paragraphs 5.2.8.a; 6.5.3.h; 6.5.14; 6.7.10.d.ii; 6.10.	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.20	Book II Part I Section 1 CLIN 5.1.11	Is it Contractor responsibility to design a TEMPEST room in the ACMS?	It is not the Contractor's responsibility to design a TEMPEST room in the ACMS. TEMPEST requirements shall be met by using TEMPEST hardware and/or TEMPEST enclosures/racks. Contractor's Tempest Responsibilities are clearly indicated in SOW paragraphs 3.5.20; 4.5; 12.5.1.h as well as SOW Annex-A paragraphs 5.2.8.a; 6.5.3.h; 6.5.14; 6.7.10.d.ii; 6.10.	No
T.21	SOW Annex-C Paragraph 2.1 Figure-2	Figure-2 shows ACMS Site/Rx site. Please clarify.	Relevant place in Figure 2 shall be as to read "ACMS Site".	Yes IFB AMD2
T.22	-	Is there OTAM antenna in ACMS?	All BRASS Receiver related equipment (receivers, receiver antennas, etc…) shall be located in the Receiver site. ACMS will have only DLOS Antennas.	No
T.23	SOW paragraph 3.4 AND 3.5	Is fire extinguishing system HN responsibility?	Yes providing Fire Extinguishing System is HN's responsibility. Please see SOW paragraphs 3.4.2; 3.4.4.q; 3.4.4.mm	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.24	Sow Annex-C	Is it possible to have enhanced drawings of the sites and rooms?	Yes, figures 1,2,3, 4,7,8 in Appendix-1 to SOW Annex-C were revised and enhanced.	Yes, IFB AMD2
T.25	SOW Annex-C	Can the top of the building in the ACMS site be considered as an option for DLOS antenna? And are there any restrictions to do it (warranty)?	No, top of the building in ACMS site cannot be considered as an option for DLOS antenna.	No
T.26	SOW paragraph 3.4	Who should provide the trenching from the DLOS antenna to building?	HN's civil works contractor. Please see SOW paragraphs 3.4.2; 3.4.4.x; 12.5.1.o.	No
T.27	SOW paragraph 3.5	Who is responsible for connection between mast tower and power supply?	It is Contractor's responsibility. Please see SOW paragraphs 3.5.12.	No
T.28	SOW Annex-A	What is the starting frequency for Rotatable Horizontal LOG-periodic (RLP) antenna?	The RLP antenna shall be designed for use 4-30 MHz	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.29	SOW paragraph 3.4 and 3.5	Who will provide cabling in different rooms? Who will make the holes in the wall?	Book II Part II (Contract Special provisions Article 27: The Contractor shall be responsible for connecting, mounting, installing, integrating and cabling of the delivered equipment within the sites and at the interface with the National Defense Network (NDN) and at the interface with Power Supply System. The Contractor shall be responsible for connecting all the BRASS equipment with the requisite utility outlets. In addition, please also see SOW paragraphs 3.4.4.L; 3.4.4.kk; 3.5.13.a; 3.5.18 and 4.7. Host Nation's Civil Work Contractor will make the wall penetrations. Please see SOW 3.4.4.hh and 3.4.4.ii.	No
T.30	SOW paragraph 3.4	Who is responsible for civil works contractor performance?	The contact point is NCI Agency, please consider that civil works can be fine-tuned after they are done, in order to address the requirements HN has contract with civil works contractor.	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.31	SOW Annex-C	a. How many existing national equipment will be used in transmitter room? What is the power for each? b. What are the Electromagnetic field and Local regulations in terms of pollution? c. What is the level of radiation in this room prior to installation?	a. There are 15 pcs old transmitters. Not more than 3 pcs of which simultaneously operates with transmission power of 1 kW each b, c : Electromagnetic feed measurements done inside and around radio hall, returned values meeting the requirements of hygiene standards BDS 17137 and BDS 1425-90.	No
T.32	SOW Annex-C	SOW Annex C Figure 5 to Appendix-1 bubble drawing: please clarify what different signs mean.	Bubble drawings indicates trees, lines represent antenna cables etc.	No
T.33	SOW Annex-C	Will the material in transmitter building room no. 3 be removed from the room?	Yes, the material will be removed by the Host Nation from Room Nr. 3 in transmitter building.	No
T.34	SOW Annex-C	Will the antenna feeder lines be removed?	The feeders to the antennas that are removed will also be removed. The other feeders remain.	No
T.35	SOW Annex-C	Annex C drawing showing rhombic underground antenna (in red): will that antenna be removed?	Yes, it will be removed	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.36	SOW Annex-C	Can the DLOS rooms in ACMS, Tx and Rx sites be used for other equipment?	Yes, DLOS rooms in ACMS, Tx and Rx sites can be used for other BRASS equipment.	No
T.37	--	At which phase the Contractor needs to submit a request to the Host Nation asking for the antennas size and location boundaries?	The Boundaries for the antennas are specified in the Tx and Rx site drawings. Bidders must propose antenna size and location in their bid.	No
T.38	SOW Annex-C	Can you specify the place for the entry point of cabling to the receiver room? Are the cabling/antenna feeder under the floor, the walls?	Contractor shall choose the entry point according to the location of antennas. Please also see Revised Figure 8 Appendix-1 to SOW Annex-C. The entry point will be below the first floor.	Yes, IFB AMD2
T.39	SOW Annex-C	How many meters to the end of the compound in Rx site? The road is flat or goes up?	300Meters. The road is flat (it will be levelled by the HN)	No
T.40	SOW Annex-C	Where will the generator be located in receiver site?	Generator will be located in a different building, not in receiver building. Please see revised Figure 7 Appendix-1 to SOW Annex-C	Yes, IFB AMD2

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.41	Appendix 1 to Book II Part IV Annex-A Section 3	At the point 3.4 is said: " The mast shall be constructed according to quality craftsmanship standards and shall be of a tubular construction." Typically, the type of the construction is related to the design of the mast and it does not affect to the functionality of the antenna either for the radio electric and mechanical specifications. Is it accepted the mast construction in angular section instead of tubular section for what concern main structure of the mast and, eventually, in tubular section for what concerns braces of lattice tower masts?	The paragraph 3.4 of the Appendix-1 to Book II Part IV will be amended as to read: The mast shall be constructed according to quality craftsmanship standards ~~and shall be of a tubular construction~~	Yes IFB AMD2
T.42	SOW Annex-C	What are the heights of the existing mast DLOS in ACMS, Rx site and Tx sites?	Height of the existing antenna masts: **ACMS:** - DLOS - 28м **Tx site** - DLOS – 15m - HF - 40m. **Rx site** - DLOS - 10 m. - HF – 20 m.	No
T.43	SOW Annex-C	Will the floor be raised in transmitter room?	Yes, the floor in transmitter room will be raised approximately 35-40com	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.44	SOW Annex-C	Who is responsible to dismantle the old antennas and mounting the new ones?	HN will dismantle the old antennas. Please see SOW 3.4.2 and 3.4.4.y. Contractor shall mount the new antennas. Please see SOW paragraph 3.5.10	No
T.45	SOW 12.5	Where will the wall penetrations be?	After the Contractor site survey the wall penetrations will be determined. Please see SOW paragraph 12.5.1.r.	No
T.46	SOW Annex-A 6.11.10.f.ii 6.14.2.b.ii	What will happen if the antenna field is not large enough to ensure 30 DB separation?	Regarding SOW Annex-A 6.11.10.f.ii: If this is not technically possible, Bidder has to inform NCIA through clarification requests. The Agency will make an assessment of whether NCIA/HN must reduce the number of antennas, or NCIA/HN will reduce the requirement for 30DB Regarding SOW Annex-A 6.14.2.b.ii: The requirement for 30 dB link margin for the DLOS remains.	No
T.47	SOW Annex-C	Are there any receivers in the transmitter site apart from BRASS.	Yes, DLOS receivers	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.48	SOW Annex-A	Digital antenna matrix is used only for BRASS transmitters and antennas, or for existing equipment as well?	Digital antenna matrix is used only for BRASS.	No
T.49	SOW Annex-C	To which UPS will be anti-collision light be connected?	The anti-collision lights shall receive power from the BRASS dedicated MPDB provided by the Contractor.	No
T.50	SOW Annex-C	Who is responsible for UPS?	There are 2 types of UPS. HN is responsible in the prime power supply system, while the Contractor is responsible for BRASS rack UPSs.	No
T.51	SOW Annex-C	Where is the main power distribution board in the ACMS?	Main PDB is in the generator room, while the BRASS PDB will have to be placed by the contractor in the BRASS room.	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.52	SOW 3.5	a. Who is responsible to cut the trees in the transmitter and receiver antenna field? b. Who has a permission? c. How long does it take?	a. Contractor is responsible to cut the trees. Please see Book II Part II Articles 6.1; 30.1 as well as SOW Annex-A Appendix-1 Section 2.4. b. SOW Annex-A Appendix-1 Section 1.2 will be amended as follows: "Contractor is responsible for obtaining all military and Civil permissions for the installation and operation of antenna masts and all related installation activities such as cutting the trees. c. The permission procedure could last about one month in accordance with the national legislation.	Yes, IFB AMD2
T.53	SOW 3.4	Will the DPOL antenna be removed from transmitter antenna field?	Dipoles highlighted in red at Figure-5 Appendix-1 to SOW Annex-C will be removed.	No
T.54	SOW Annex-C	Direction of DPOL antenna shall be specified. In which direction should the DPOL antennas be pointed?	Antennas orientation shall be 2 each East, 2 each Southeast and 2 each south	Yes, IFB AMD2

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.55	-	Who is responsible to make DLOS calculation study?	Contractor is responsible to make DLOS calculation study. Please see SOW paragraphs 3.1; 3.5.8; 3.5.9; 3.5.10; 3.5.13 and 3.5.22	No
T.56	SOW Annex-C	Is there visibility between ACMS and transmitter antennas?	Yes	No
T.57	SOW 3.4	Who takes responsibility of the civil works responsibility?	HN will take responsibility for the civil works which will be completed before the system installation begins.	No
T.58	SOW Annex-C	Is there a requirement for a specific routing of cables between DLOS, mast and building such as trenching or cable level?	HN will provide trenching as required for the ducting between DLOS antenna mast and the wall penetration into the room 16. There are no existing cables on/in the ground in this area.	No
T.59	SOW Annex-C	Was the frequency used for the test different from the requirement?	Yes. The frequency was different however, the test confirmed line of sight visibility.	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.60	SOW Annex-C	Where is the power supply located in the generator room in ACMS?	Outside of the building, downstairs. However, the civil works contractor will provide an adequate power feed to BRASS room. The contractor shall terminate this power feed in a BRASS distribution panel. Please also see T-1.	No
T.61	SOW Annex-C	How high is the building outside of the fences in the ACMS? And, how high is the existing tower?	The existing building is not in the line of sight path toward the transmitter and receiver sites. A successful trial has been performed using mobile DLOS equipment positioned where a new antenna mast will be installed. The existing antenna mast is 28 meters.	No
T.62	-	Will the BRASS room be tempested by Contractor?	No, The zoning of the ACMS has been determined by the HN. Contractor shall therefore provide fully tempested (equipment, etc) installation. Please also see T-19 and T-20.	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.63	Book II Part IV SOW Part 3.4.4.x Appendix-1 Annex-A	a. NCIA/HN to confirm that the complete preparation of the antenna farms for BRASS and DLOS is under HN responsibility including the clearing of any vegetation (like trees and bush) and the ground levelling. b. NCIA/HN to confirm that paragraph 2.4 of Appendix-1 Annex-A shall not be considered.	a. Cutting trees and getting permissions to cut trees are Contractor's responsibility. Complete preparation of BRASS and DLOS antenna farms (excluding cutting trees) are Host Nation's responsibility. Please also see T-52 b. Not confirmed. SOW Annex-A Appendix-1 paragraph 2.4 will be modified accordingly as to read: Execution of some of the site preparation works including cutting trees ~~bush and vegetation clearing, demolition works and rubble removal, ground levelling and compacting~~	Yes IFB AMD2
T.64	Book II Part IV SOW Par 3.4.4 (bb)	NCIA/HN to confirm that secured areas allocated to store all BRASS equipment will be located close to the installation areas and to provide the relevant limitations/dimensions.	Please see T-12	No
T.65	Book II Part IV SOW Paragraph 3.5.19	NCIA/HN to confirm that contractor is not responsible to run any power cable from BRASS electrical power distribution board to MPDP.	Not confirmed. Contractor is responsible to provide power cable as stipulated in SOW paragraph 3.5.13.a and 3.5.19	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.66		Do we actually require anti-collision lights?	Yes, anti-collision lights are required.	No
T.67	Book II Part IV Annex-B, Section I General paragraph 1.2	At the end of the paragraph, it says the following: The Contractor shall be fully responsible to rectify any deficiency found in the system that stems from the BICC software. Does it mean that the Contractor will be responsible for the deficiencies in the software due to the adaptation for this project, but not done previously in other projects.	Please see SOW annex-A paragraph 5.1.28	No
T.68	Book II Part IV Annex-A Page 68 paragraph 6.14	A new Digital Line of Sight Connectivity (DLOS) between sites shall be implemented by the Contractor. Can you confirm that DLOS exists between Tx and Rx sites? Can you confirm that crypto is not necessary for DLOS? Can you confirm that we are specifying about the frequency of work for this microwave link?	No, there is Analog LOS existing between Tx and Rx sites. It is confirmed that a separate crypto is not necessary for Digital Line of Sight. See also T-78 Contractor shall choose the frequency band for the DLOS whereas the HN will obtain permission for specific frequencies.	No
T.69	SOW Annex-C	Is it possible to add the places where antennas will not be removed into the drawings?	Please see revised Figure 3 Appendix-1 to SOW Annex-C	Yes, IFB AMD2

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.70	Book II Part II	Number of ACMS UPS is 3; Tx UPS is 4; Rx UPS is 3 Can you please give the rationale for these quantities?	3 UPS are for ACMS MPS equipment (Book II Part II CLIN 5.1.9); 3 UPS are for ACMS RSC equipment (Book II Part II CLIN 5.3.7); 2 UPS are for TX RSC equipment (Book II Part II CLIN 6.2.4) 2 UPS are for Tx Radio equipment (Book II Part II CLIN 6.3.7) 1 UPS are for Rx RSC equipment (Book II Part II CLIN 7.2.3) 2 UPS are for Rx radio equipment (Book II Part II CLIN 7.3.6) SOW 3.5.16: The Contractor shall connect all BRASS equipment (except for the 5Kw transmitters) to BRASS dedicated UPS. Please also see SOW Annex-A 6.10.6	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.71	SOW Annex-C	In SOW Annex-C; the site layouts have notes which asks for information including "radiation diagrams" Is HN or NCIA going to do isolation and coupling calculations as well as do antenna farm plans?	No, They are the Contractor's responsibility. Please see SOW paragraphs 4.2.2.k.; 12.2.4.a; 13.7.9.c; as well as SOW Annex-A paragraph 6.11.10.b; 6.11.10.f.ii; 6.11.10.g; 6.12.4.k; Appendix-2 to SOW Annex-A paragraph 1.3 and 3.1 Book-I paragraph 4.4.9.b.xvii	No
T.72	SOW Section 12	HN Civil Contract Works: If HN is responsible of antenna farm excavation and leveling, how this work will be scheduled to cover BRASS contractor's requirements for the antennas to be implemented at Tx and Rx sites? Please explain the process and timeline of both contracts (HN local Contract and Contract of this IFB for BRASS BGR).	Please see SOW paragraph 12.5.1.o. At Contract Award, the proposal provided by the successful Contractor will outline the requirement for excavation and levelling to be performed by the Host Nation. After receipt of the SPDP, the HN will have the details required for executing the civil works to be completed prior to start of implementation (just after Factory Acceptance Tests)	No
T.73	SOW Annex-C	Scaled drawings of Tx and Rx sites are needed for antenna farm design. It will be best if HN can mark the areas for antennas on the drawings.	Some of the drawings were revised in Appendix-1 to SOW Annex-C	Yes, IFB AMD2

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.74	SOW Annex-C	Autocad drawings of all the buildings at ACMS, Tx and Rx sites are required to design room layouts.	Autocad drawings shall be prepared by the Contractor. Please see SOW paragraph 13.12.3	No
T.75	Book II 6.11.7 HF transmitters d.x	According to reference standard ITU-R SIM 329-7, which category shall be considered for spurious limit value A/B or C?	With reference to Standard ITU-R SM.329-7, the spurious emission limits should be considered Category A. Moreover, the bidder is reminded that MIL STD 188 141 B also applies, namely its broadband and discrete spurious suppression requirements that the HF transmitters shall comply with	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.76	* Book II Part IV (SOW) Page 20 - Item 3.4. Purchaser's and Host Nations' Responsibilities . * Book II Part IV (SOW) Page 110 - Item 13.1.5.a Technical Manuals	Considering the Purchaser's and Host Nations' Responsibilities table, we understand that "Providing and Building responsibility of BRASS dedicated HVAC and Fire Extinguisher System belongs to Host Nation. However the item 13.1.5. states that "The Contractor shall furnish BRASS BGR system user manuals and maintenance manuals … Whenever in section 13, BRASS BGR system or BRASS BGR system/equipment is mentioned the definitions include BRASS BGR Supporting Systems***, provided by the Contractor***, such as SB and NB PSS, BRASS dedicated ***HVAC and FES***, antenna masts, Aircraft Warning Lights, Lightning Protection, and Grounding." Please clarify if the item 3.4 and 13.1.5 conflicts or not and that the providing and building responsibility of HVAC and FES systems belongs to HN.	SOW paragraph 13.1.5.a will be revised as to read: "…..Whenever in section 13, BRASS BGR system or BRASS BGR system/equipment is mentioned the definitions include BRASS BGR Supporting Systems, provided by the Contractor, such as BRASS dedicated ~~SB and~~ NB PSS, ~~BRASS dedicated HVAC and FES,~~ antenna masts, Aircraft Warning Lights, Lightning Protection, and Grounding"	Yes, IFB AMD2
T.77	* Book II Part IV ANNEX-A Page 2 - Item 1.2.4.	In Item 1.2.4 It is stated that "The Asparuhovo transmitter site is in an elevated position about 100m above the nearest inhabited areas. Contractor shall take necessary precautions to avoid risk of interference with other commercial, public safety or international users. In the event of unexpected interference being identified, corrective action shall be taken by the Contractor." If unexpected interference is identified, is it possible to assign another place for building antenna or acceptable to decrease HF 5-kw output power?	If unexpected interference is identified, It is possible to assign another place in the antenna field by the Contractor for building antenna. Decrease of HF 5KW output power is not considered.	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.78	* Book II Part IV ANNEX-A Page 23 - Figure 5: BRASS BGR Overview and System Architecture	In figure 5 It is shown that the encryption of DLOS system is provided by commercial encryption. Please clarify this encryption is just for the communication of BRASS related network.	This encryption is only used for the point to point connection and is to be provided by the DLOS equipment. Please also see T-68	No
T.79	* Book II Part IV ANNEX-A Page 28 - Item 6.5.9.b.ii	In Item 6.5.9.b.ii: it is stated that "voice-communications sets to carry on internal operator-to-operator communication and external voice telephony." Please clarify if these communication sets are the voice terminals of the Voice Management Sub System. If these are another communication sets, please provide the specs of the workstation communication sets.	Confirmed. Voice communications sets are voice terminals of the Voice Management Subsystem.	No
T.80	* Book II Part IV Annex A Page 1 Appendix-2 - Item 1.1	In Item 1. 1 It is stated that "The BRASS BGR System shall be designed to operate with concurrent transmissions and receptions at any frequencies within the HF band 2 MHz to 30 MHz." Most of the manufacturer produces RLP antenna with the frequency range 4-30 MHz. Is it acceptable to offer transmit RLP Antennas with a frequency range of 4-30 MHz.	Yes, 4-30 MHz for RLP antenna is acceptable	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.81	* Book II Part IV (SOW) Page 30 - Item 3.5.8	In Item 3.5.8 it is stated that "The Contractor shall provide the required DLOS connectivity to provide connection between the ACMS, Tx and Rx sites as stipulated in SOW Annex-A". However, this requirement is not shown in ACMS site CLIN List. Please clarify it.	This requirement shall be considered in CLIN 5.7.1 ACMS DLOS Base station.	No
T.82	Book II Part IV Paragraph 3.4 PFE Equipment List	What is meant/requested by this kind of "3 TADPOLE Cryptographic Devices" ?	TADPOLE Crypto Devices will be provided by the NCIA to the Contractor for Ship-Shore and Maritime Rear Link (MRL) secure communications. Please see SOW 3.4.4.h; SOW Annex-A paragraph 6.6.14.b.iii; SOW Annex-B Appendix-2 Paragraphs 13.8; 14.8 and other relevant parts of the SOW Annex-A.	No
T.83	Book II Part I CLIN 5.7	Please clarify if the called point is related to PTFS or DLOS?	CLIN 5.7 is related to ACMS DLOS Connection	Yes, IFB AMD2
T.84	Book II Part 1 Section 1 SOW Ann A Sect. 5,6 and Annex B	In order to allow the bidder to make a correct evaluation of the economical effort to provide for items 8.11 and 8.14, would you provide to us the information about the number of function points for ACMS and RCS SW ?	The purchaser will deliver the available engineering documents (SDDs and DBDD) and manuals to the bidders upon request. Source code will be given to the Contractor.	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.85	Book II Part IV Annex –A point 6.11.10 -b.	For the transmitting antenna is required to foreseen an antenna farm including 2 additional antenna, for future enhancement. Would you please clarify which antenna type are you expecting (between wide band dipole and RLP ?	Not only transmitter site but also receiver site needs two additional antenna locations for the future. Please see SOW 3.5.9. Space for two additional RLP antenna locations shall be foreseen.	No
T.86	Book II Part IV Annex –A point 6.11.10 -g.	Please clarify that the antenna foundation for the 2 future antenna of future enhancement has not to be provided	Confirmed. With this BRASS BGR project, only the locations of the additional antennas will be determined. Antenna foundation will be provided with the future project, as stated in SOW Annex-A 6.11.10.g for Tx site and 6.12.4.k for Rx site. Typo will be corrected at SOW Annex-A 6.12.4.k	Yes, IFB AMD2
T.87	Book II Part IV Annex –A point 6.12.4 –k..	For the receiving antenna is required to foreseen an antenna farm including 2 additional antenna, for future enhancement. a. Would you please clarify which antenna type are you expecting (between wide band dipole and RLP ? b. Please clarify that the antenna foundation for the 2 future antenna of future enhancement has not to be provided ?	a. Please see T-85 b. Please see T-86.	No

Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
T.88	BOOK II PART IV ANNEX-A PAGE 53 point 6.11.2	Based on the requirements, the transmit RLP Antennas should have a power handling capacity of 5 kW over the full frequency range of 2-30 MHz. According to our experience, antenna manufacturers do not offer RLPAs that operate over 2-30 MHz with full efficiency at the 5 kW power level. Since RLPAs are generally used to communicate over medium to long distances, for which operating frequencies are 4 MHz or higher, the frequency range of a fully efficient 5 kW RLPAs is typically 4-30 MHz. Question: Is it acceptable to offer transmit RLPAs that have a frequency range of 4-30 MHz?	Yes, it is acceptable to offer transmit RLPAs that have a frequency range of 4-30 MHz	No

A= Administrative/Contractual; P= Price; T= Technical
* Status: Is Amendment to IFB required as a direct result of the Clarification Request?

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SECTION 1 INTRODUCTION

1.1. INVITATION FOR BID (IFB) PROCEDURE

1.1.1. This IFB consists of procurement and implementation of Broadcast, Maritime Rear Link (MRL) and Ship Shore (BRASS) system in Bulgaria.

1.1.2. Bulgaria (BGR) is Host Nation (HN) under the NATO Security Investment Programme for BRASS project[1] and has the overall financial authority for the programme. The NATO Communications and Information Agency (NCI Agency) has been authorised to act as Procurement Agent on behalf of the HN and is vested with the acquisition authority to conduct the NATO International Competitive Bidding (ICB) Procedure, and to award and administer the resulting Contract.

1.1.3. This solicitation is an International Invitation for Bid (IFB) and is issued in accordance with the NATO procedures: AC/4-D-2261 (1996 Edition). Award of a Contract pursuant to this IFB will be made to the firm that has offered the lowest evaluated price and has been determined to be technically compliant with the requirements of the IFB in accordance with the evaluation criteria. The bid evaluation criteria and the detailed evaluation procedure are described in Section 4 of these Bidding Instructions.

1.1.4. This IFB will not be the subject of a public bid opening.

1.1.5. Award of the resulting Contract will be made on a firm fixed price basis.

1.1.6. The solicitation, evaluation and award processes will be conducted in accordance with the terms and conditions contained herein.

1.1.7. All Bidders shall provide the required certifications.

1.1.8. A single contract will be placed with one Contractor. No partial bidding shall be allowed.

1.2. SCOPE

1.2.1. Background

a. The purpose of the project is to modernise the current BGR Navy Surface High Frequency (HF) maritime communication system, to provide adequate HF

[1] Complete BRASS Baseline Implementation South (BGR), serial 2007/9CM80092-04

capability, monitoring and control facilities and to increase management flexibility and communications availability, according to the requirements and standards established for BRASS Baseline in the Statement of Work (SOW) Book II Part IV with the aim of achieving the necessary North Atlantic Treaty Organisation (NATO) and National Maritime Command and Control (C2) operational capability. However, there will be an enhancement (under BRE1TA - BRASS Enhancement 1 Target Architecture) to BRASS Baseline systems in near future with which the BRASS systems will be called Beyond Line of Sight System (BLOS). Therefore, compatibility of this IFB requirements with BRE1TA were taken into account.

b. The SOW and the System Requirements Specification are part of the Prospective Contract, which is Book II of this IFB. The successful Contractor shall be responsible for the procurement, design, manufacture, delivery, installation, and integration, testing and preparing for acceptance of the systems and shall be obligated to maintain the systems and provide logistics support for the life cycle of the systems up to nine (9) years after expiry of the Contract Warranty provisions if HN decides to exercise the CLS options.

c. The majority of the works related to Civil Works will be contracted by Bulgaria through national competitive bidding and are outside of the scope of this IFB. The scope of this IFB will encompass the design, procurement, delivering, installation, testing and preparing for acceptance (the whole implementation) of the BRASS system on Transmitter (Tx) and Receiver (Rx) sites including some civil work components.

1.2.2. Contract Scope

a. The Prospective Contract is structured in the following manner:

i. A Firm Fixed Price Part for the acquisition of CLIN(s) 1 to 9.

ii. Firm Fixed Price for Option (CLIN 10.1) as stated in the Bidding Sheets.

b. Price evaluation will be based on the total firm fixed price for all CLINs 1 to 9. CLS Option CLIN 10 will not be evaluated. If CLS option is exercised by HN after completion of warranty, the final prices for CLS Options 10.2 and 10.3 shall be determined according the methodology described at Book II Part II, Article 22.

1.3. SCHEDULE FOR CONTRACT AWARD AND IMPLEMENTATION

1.3.1. The target date for Contract award is 2nd Quarter 2016.

1.3.2. The Contractor shall achieve Final System Acceptance within sixteen (16) months after the Effective Date of Contract (EDC).

1.4. SECURITY

1.4.1. The overall security classification of this IFB is "NATO UNCLASSIFIED". However the document will be considered "NATO RESTRICTED" when SOW ANNEX-C is included. The package may be communicated on Internet without Annex C. **The SOW Annex C will only be released to Bidders upon request and following receipt by the Purchaser of the Certificate of Security Obligation, which is in BOOK I Annex B-6, no later than within seven (7) working days of the release of this IFB**. The Purchaser POC at Par. 2.16 below shall receive the completed and signed BOOK I Annex B-6 by e-mail within the afore-mentioned deadline. **Failure to request SOW Annex C and to provide the Certificate of Security Obligation within the stated time will not be considered as a reason for any request of extension of the Bid Closig Date**. SOW Annex-C (Site Information Data Package) consists of detailed information about BRASS Automated Control and Management System (ACMS) and Tx and Rx sites as to comprise Purchaser Furnished Equipment (PFE), inter site connectivity, civil works and electrical power provision as well as technical drawings.

1.4.2. The resulting Contract will require the Prospective Contractor handling, processing and storing material classified "NATO SECRET", at NATO and HN Bulgaria facilities. The Contractor shall have the appropriate clearances **at the time of Contract award**.

1.4.3. The resultant Contractor's project manager and personnel working at HN or Purchaser premises/sites shall be security cleared to "NATO SECRET" level. Prospective Contractor personnel without such a clearance, confirmed by the appropriate national security authority and transmitted to the cognizant NATO/HN security officer at least fourteen (14) calendar days prior to any site visit, will be denied access to any of the HN or Purchaser premises/sites. 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 and/or a determination of Termination for Default by the Purchaser.

1.4.4. This requirement applies also to all personnel involved in this project as a result of subcontracts issued by the Contractor for effort under the prime Contract.

1.4.5. Bidders are advised that Contract signature will not be delayed in order to allow the processing of 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 compliant Bidder. In such a case, the Bidder who would not sign the Contract shall be liable for forfeiture of the Bid Guarantee.

1.4.6. Prospective bidders and their sub-contractors shall comply with the security instructions presented in Book II Part IV SOW Annex D (Security Aspect Letter & Project Security Instructions).

1.4.7. All NATO CLASSIFIED material entrusted to the Contractor shall be handled and safeguarded in accordance with applicable security regulations. The Contractor shall be required to possess a Facility clearance of "NATO SECRET" for those sites in which it intends to handle and store NATO classified material in the conduct of work under this Contract, **at the time of Contract award**.

1.5. SITE SURVEYS AND BIDDERS CONFERENCE

1.5.1. Prospective Bidders are invited to participate in a **two-day Site Survey** that will be held on **24-25 November 2015** at the BRASS sites in Bulgaria and to participate in a **one-day Bidders' Conference** that will be held on **26 November 2015** at the Host Nation's facilities in Bulgaria. The Site Surveys and Bidders' Conference will be chaired by the NCI Agency in coordination with HN Bulgaria.

1.5.2. The purpose of the Bidders Conference is to present the Project and the key members of the Purchaser and HN project management team, as well as to allow the Prospective Bidders to clarify aspects of the Invitation for Bid for which they may have questions at that time. There may be a nominal fee for the participation to the Conference, covering administrative costs.

1.5.3. The participation in the Site Surveys and Bidders' Conference is limited to a maximum of two (2) persons per company. In addition, Bidders may request to bring one (1) subcontractor representative to the Bidders Conference.

1.5.4. The Site Surveys and the Bidders' Conference will be held in Bulgaria in accordance with the tentative schedule below:

Site Survey:

24 November 2015 (Gorna Traka ACMS)

Between 09:00- 17:00

25 November 2015 (Asparuhovo-Tx site and Galata Rx site)

Between 09:00- 17:00

Bidder's Conference:

26 November 2015 (HN's Facilities in Bulgaria – 9000 Varna, bul. "Vladislav Varnenchik" 2, Navy officers club):

Between 09:00- 17:00

1.5.5. Those Bidders, who wish to participate in the Site Survey visits in Bulgaria BRASS sites, shall indicate their intention to attend stating the company representatives who will attend by forwarding their security information using the **"Request for Visit (RFV)" form, which is enclosed to the cover letter of this IFB, no later than within seven (7) calendar days of the release of this IFB**. Bidders shall validate that individuals have clearances up to NATO CONFIDENTIAL to the HN Point of Contact (POC) to the address mentioned in paragraph 1.5.11 below and to NCI Agency to the address mentioned in paragraph 2.16 below. All other security requirements of this IFB remain unchanged.

1.5.6. Prospective Bidders are informed that the participation to the Site Surveys is not mandatory for bidding purposes, however it is strongly recommended to participate in the scheduled Site Visits and Bidders' Conference as the successful Bidder will be barred under the resulting Contract from making claims for differing site conditions if the basis of the claim is a matter that could have been discovered in the Bidding Stage by participation in the Site Surveys. The HN will confirm before the visit if transportation can be arranged to the sites. The HN will provide access to the sites for each visit in accordance with the security regulations. There may be a nominal fee for the transportation to and from the sites. The Bidders are responsible for the costs of travel, lodging and per diem for its representatives visiting the sites.

1.5.7. During the Site Visits the Bidders will be able to ask questions to the Agency representatives, and will have to submit the questions asked in written form at the end of Site Survey. Any additional questions that were not raised during the Site Visit may be submitted officially in written any time during the Bidders' Conference, or after the conference in accordance with paragraph 1.5.~~9~~8 below.

1.5.8. Any question that the potential Bidders would like to have answered after the Bidders' Conference must be submitted in writing within one (1) week after the Bidders' Conference, but not later than twenty eight (28) calendar days prior to the Bid closing date, to the IFB POC at the address mentioned in paragraph 2.16.

1.5.9. The Purchaser will attempt to provide immediate answers to the questions that are asked by the potential Bidders during the the Bidders' Conference, but any answer that might appear to amend terms, conditions and/or specifications of the Prospective Contract shall be considered to be formally included in the IFB only when a written amendment to the IFB is issued in writing by the Purchaser.

1.5.10. Answers to all questions will be issued in writing to all Bidders as soon as practicable, whether or not the Bidders have attended Site Visit(s) and/or the Bidders' Conference. The formal written answers will be the official response of the Purchaser, even if the written answer differs from the verbal response provided at the Site Visits or the Bidders' Conference. Similarly, any information provided by the HN Bulgaria or the Purchaser during the Site Visits will not be considered contractually binding, unless they have been officially provided in writing by the Purchaser to all Bidders.

1.5.11. Notwithstanding the written answers provided by the Purchaser after the Bidders' Conference, the terms, conditions and language of the IFB remains unaltered unless a formal IFB amendment is issued by the Purchaser, and is identified as such.

1.5.12. During the Site Survey the Purchaser will provide TEMPEST Facility Zoning information to the Bidders upon request.

1.5.13. The Point of Contact of HN for the Site Visits as well as Bidders Conference is as follows:

Col. Milen HRISTOV

Telephone: + 359 2922 0746

Email address: m.hristov@mod.bg

CC to: Viktorija.Navikaite@ncia.nato.int

1.5.14. **The HN Point of Contact above can be contacted for the submission of Request for Visit only**. All the other questions related to this IFB shall be addressed to the Purchaser POC at Par. 12.6 below.

SECTION 2 GENERAL BIDDING INFORMATION AND REQUIREMENTS FOR BID SUBMISSION

2.1. GENERAL

2.1.1. Bidders shall prepare and submit their Bid in accordance with the requirements and format set forth in this IFB.

2.2. DEFINITIONS

2.2.1. “Assembly”: As used herein, the term “Assembly” means an item forming a portion of equipment that can be provisioned and replaced as an entity and that normally incorporates replaceable parts or groups of parts.

2.2.2. “Bid”: The term “Bid” as used herein means a binding offer to perform the work specified in the attached Prospective Contract (Book II).

2.2.3. “Bidder”: The term "Bidder" as used herein refers to a firm, consortium, or joint venture that submits an offer in response to this solicitation. Bidders are free to sub-contract to eligible firms within the Participating Nations as specified in paragraphs 2.2.8 and 2.2.11 below. Such subcontracts shall be on a Prime Contract-Subcontract basis only. Temporary legal associations, consortia and joint ventures established to secure and perform the contract are not considered “Bidders” for purposes of this competition and bids will not be accepted from such entities.

2.2.4. “BRASS BGR System”: As used herein, “BRASS BGR System” refers to all hardware and software provided for modernising and increasing the High Frequency (HF) capability of the Bulgarian Navy according to the requirements and standards established for Broadcast and Ship-Shore baseline, to achieve the necessary NATO and National Maritime Command Control (C2) operational capability.

2.2.5. “Compliance”: The term "Compliance" as used herein means strict conformity to the requirements and standards specified in this Invitation For Bid.

2.2.6. “Component”: The term “Component” as used herein, means a part or combination of parts, having a specified function that can only be installed or replaced as a whole, and is also generally expendable.

2.2.7. “Contractor”: The term "Contractor" refers to a firm of a Participating Country that will sign the Prospective Contract (Book II of this IFB) under which it will perform a service, manufacture a product, or carry out works specified in this IFB for NATO.

2.2.8. “Firm of Eligible Participating Country”: A firm legally constituted or chartered under the laws of, and geographically located in, or falling under the jurisdiction of eligible Participating Country; the work cannot be physically undertaken in a non-participating country.

2.2.9. “Host Nation”: A Participating Country, major NATO Command or a NATO Agency which is responsible for implementing a Security Investment project. In this particular IFB, Host Nation refers to Bulgaria (BGR).

2.2.10. “Manufacturer”: The term “Manufacturer” as used herein refers to a firm producing the goods on an industrial scale.

2.2.11. “Participating Countries”: The term “Participating Country” as used herein means one of the NATO Nations (excluding France, Albania and Croatia) that have undertaken to share the cost of this Security Investment Project. These 25 nations are namely (in alphabetical order): BELGIUM, BULGARIA, CANADA, CZECH REPUBLIC, DENMARK, ESTONIA, 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.

2.2.12. “Procurement Agent”: The term “Procurement Agent” as used herein refers to an Agency that conducts an International Competitive Bidding (ICB) exercise or procurement on behalf of one or more Host Nations. In this particular IFB, Procurement Agent refers to the NCI Agency.

2.2.13. “Purchaser”: The term “Purchaser” as used herein refers to the authority issuing the IFB and/or awarding the Contract. In this particular IFB, Purchaser refers to the NCI Agency.

2.2.14. “Sub-Assembly”: The term “Sub-Assembly” as used herein refers to 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 as defined in ACodP-1.

2.3. ELIGIBILITY

2.3.1. Only firms that have been nominated by their respective National Delegations are eligible to engage in this competitive bidding process. In addition, all Contractors, sub-Contractors and manufacturers, at any tier, must be from within the Participating Countries defined in paragraph 2.2.11 above.

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

2.3.3. 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.

2.3.4. The intellectual property rights to all design documentation and related system operating software shall reside in NATO on behalf of the HN Bulgaria, and no license fees or royalty charges shall be paid by the Contractor to firms, individuals or governments other than within the stated NATO Participating Countries.

2.4. BID DELIVERY ADDRESS

2.4.1. The complete Bid shall be delivered or mailed in hard copy on paper to the address given below in paragraph 2.4.2.

2.4.2. Bids shall be hand-carried or sent by express courier or sent via national or international postal system to the following address:

NATO Communications and Information Agency (NCI Agency)

Bâtiment Z

Avenue du Bourget, 140

B-1110 Brussels, BELGIUM

ATTN: Ms. Viktorija Navikaitė

Acquisition

Telephone: +32 2 707 8210

2.5. BID PACKAGING AND MARKING

2.5.1. The Bid Package shall be sealed and marked as follows:

~~a. The words "NATO RESTRICTED";~~

~~b.~~a. Name and address of the Bidder;

~~c.~~b. The words "SEALED BID – NOTIFY CONTRACTING OFFICER (Ms. Viktorija Navikaitė, extension: 8210) UPON RECEIPT!"

~~d.~~c. The Bid Number attributed to this Invitation for Bid, "IFB-CO-13733-BRASS-BGR".

2.5.2. The Bid Package Content

a. The complete Bid shall consist of three (3) separate packages as follows:

i. Administrative Package

ii. Price Proposal Package

iii. Technical Proposal Package

2.5.3. **Bidders shall mark their Technical Proposal Packages as NATO RESTRICTED**. Technical Proposals shall be packaged separately from the Administrative and Price Proposal Packages. All three (3) packages shall be placed together in a suitable container that shall be sealed. **Administravite and Price Proposal Packages shall be marked NATO UNCLASSIFED.**

2.5.4. Detailed requirements for the structure and content of each of these packages are contained in the following paragraphs.

2.5.5. Bid language shall be English.

2.6. BID CLOSING DATE

2.6.1. All Bids shall be in the possession of the Purchaser at the address given above **before 15:00 Central European Time (CET) on ~~21~~ 11 ~~January~~ February 201~~5~~6**, at which time and date bidding shall be closed. Bidders are advised that the closing time and date for the receipt of Bids by the Purchaser includes receipt of any material of a security classified nature. Therefore Bidders shall take care to ensure that such material is transmitted in accordance with national security procedures in adequate time to be certain it arrives in the hands of the Purchaser by the date for Bid closing.

2.6.2. **Bids submitted by electronic transmission (fax or e-mail) are not permitted and will not be considered**. Bidders shall note that electronic copies (CD-ROM) of their bids are required to be submitted with their “hard copy”.

2.6.3. Bids that are delivered to the Purchaser after the exact time and date set forth 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.

2.6.4. 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 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:

a. A Contract has not already been awarded pursuant to the IFB; and

b. 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

c. The Bid was hand carried, or delivered by a private courier service and the Bidder can produce a receipt that 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; or

d. Due to restricted, bid must be submitted in accordance with security regulations. The portion of the Bid that is security classified shall have been introduced into the proper national channels for transmission of such material in due time. The Bidder shall maintain a record of such transmission to demonstrate that delay of receipt of such material by the Purchaser is due to the handling of such materials by national or NATO security authorities.

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

2.6.6. Bidders are advised that personnel remaining on the Purchaser's premises outside of normal business hours may decline to sign or issue receipts for delivered items.

2.7. REQUESTS FOR EXTENSION OF THE BID CLOSING DATE

2.7.1. Any request for extension of the closing date for the IFB shall be submitted by the Bidder **through their respective NATO Delegation** to the Point of Contact specified in paragraph 2.16 below. The Bidder shall submit the request to the National Delegation in sufficient time, so as to allow the Delegation to deliver Bidder's formal request to the Purchaser **no later than fourteen (14) calendar days prior to the stated Bid Closing Date**. The Purchaser is under no obligation to answer requests submitted after this time.

2.8. BID VALIDITY

2.8.1. Bidders shall be bound by the terms of their offer for a period of twelwe (12) months, following the stated Bid Closing Date or any extension of the Bid Closing Date.

2.8.2. In order to comply with this requirement, the Bidder shall complete the Certificate of Bid Validity set forth in Annex B-3 to these Bidding Instructions. Bids offering a Bid Validity period of less than twelwe (12) months shall be considered non-compliant.

2.8.3. The Purchaser will endeavour to complete the evaluation and make the Contract award within the Bid Validity period of twelwe (12) months. However, should that period of time prove to be insufficient to render an award, the Purchaser reserves the right to request an extension of the Bid Validity period of all bids which remain under consideration for award.

2.8.4. Upon notification by the Purchaser of such a request for a time extension, a Bidder shall be at liberty to:

a. accept this extension of time in which case the Bidder shall be bound by the terms of its offer for the extended period of time and the Bid Guarantee extended accordingly;

b. refuse this extension of time and withdraw its offer, in which case the Purchaser will return the Bid Guarantee in the full amount without penalty.

2.8.5. 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.

2.9. BID GUARANTEE

2.9.1. The Bidder shall furnish with his Bid a guarantee in an amount equal to **THREE HUNDRED THOUSAND** Euros **(€ 300,000.00)**. The Bid Guarantee shall be in the form of an irrevocable, unqualified and unconditional **Bid Bond, i.e. 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, NCI Agency.

2.9.2. Alternatively, a Bidder may elect to post the required Guarantee **in cash** (via direct bank deposit) or by **certified cheque** to be submitted in the Bidders Bid Administrative Package. If the latter method is selected, Bidders are informed that the Purchaser will cash the cheque on the Bid Closing Date. Instructions regarding direct bank deposit can be obtained from the Para 2.16 designated Point of Contact.

2.9.3. 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.

2.9.4. Failure to furnish the required Bid Guarantee by the Bid Closing Date in the proper amount, and in the proper form and for the appropriate duration may be cause for the Bid to be determined non-compliant. 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~~ Administrative Package.

2.9.5. The NCI Agency will make a drawing against the SLC as Bid Guarantee under the following conditions:

a. The 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, withdraws his Bid, or states that he does not consider his Bid valid or agree to be bound by his Bid.

b. The Bidder has submitted a Bid determined by the NCI Agency to be the lowest priced, technically compliant Bid, but the Bidder declines to execute the Contract offered by the NCI Agency, such Contract being consistent with the terms of the Invitation for Bid.

c. 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.

d. 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.

2.9.6. “Standby Letter of Credit" 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/Bidder can revoke or condition the Standby Letter of Credit. The term “Belgian financial institution” includes non-Belgian financial institutions licensed to operate in Belgium.

2.9.7. The following format may be used by the issuing financial institution to create a Standby Letter of Credit acceptable to the Purchaser:

BID GUARANTEE - STANDBY LETTER OF CREDIT

Standby Letter of Credit Number: _____

Issue Date: _____

Account Party's name:

Account Party's address:

Beneficiary: NCI Agency, Financial Management Office

Boulevard Leopold III, B-1110, Brussels, Belgium

***Expiry Date**:* _____

For Contract No: IFB-CO-13733-BRASS-BGR BRASS Bulgaria Project

(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 € 300,000.00** (THREE HUNDRED Thousand Euro). We are advised this Guarantee fulfils a requirement under Invitation for Bid CO-13733-BRASS-BGR 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 NCI Agency Contracting Officer that:*

(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 its Bid, or stated that it does not consider its Bid valid or agree to be bound by its Bid, or

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

The NCI 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

The NCI 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 NCI 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 NCI 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 NCI Agency Contracting Officer that 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 BIDDER), and the NCI Agency, as beneficiary, hereby draws on the standby letter of credit number _____ in the amount of 300,000 € (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)."

(7) 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 6 above until 20 (twenty) calendar days prior to*

1. *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,*

2. *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 this letter of credit.

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

(11) 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 98 (ISP98) 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.

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

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

2.9.8. The validity period of the Bid Guarantee shall be of the same duration as the Bid Validity.

2.9.9. If the successful Bidder withdraws its Bid within the period of Bid Validity, or upon acceptance of the Bid by the Purchaser, or fails to enter into the Contract, it shall forfeit the Bid Guarantee in total.

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

a. to non-compliant Bidders forty-five (45) calendar 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) calendar days after a final determination of non-compliance);

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

c. 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.

d. pursuant to paragraph 2.8.4 above.

2.10. MODIFICATION OF THE IFB

2.10.1. The Purchaser reserves the right to revise, correct or amend the terms, conditions or provisions of this IFB and its specifications prior to the date set for the Bid Closing Date. Such revisions or amendments, if any, will be announced by an official amendment or amendments to this IFB.

2.10.2. This process may be part of the clarification procedures set forth in paragraph 2.14 below or may be an independent action on the part of the Purchaser.

2.10.3. If the revisions or amendments to the IFB are of a nature that requires significant changes in the Bidders' proposal, the date set for the Bid Closing Date may be postponed by such number of days as in the opinion of the Purchaser, will permit Bidders to revise their Bids. In such event, the amendment will include an announcement of the new Bid Closing Date.

2.10.4. All revision or amendments issued by the Purchaser shall be acknowledged by the Bidder in its Bid by completing the Acknowledgement of Receipt form at BOOK I Annex B-9. Failure to acknowledge receipt of all amendments may be grounds to determine the Bid to be non-compliant. The modified IFB Amendment Sheet shall be included in the Administrative Package.

2.11. CANCELLATION OR WITHDRAWAL OF THE IFB

2.11.1. The Purchaser reserves the right to cancel, suspend, or to withdraw for re-issuance 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 submitting a Bid in response to this IFB.

2.12. MODIFICATION OF THE BID

2.12.1. Bids, once submitted, may be modified by the 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 exact time and date established for Bid Closing. Such modifications shall be considered as an integral part of the submitted Bid.

2.12.2. Modifications to Bids that arrive after the Bid Closing Date will be considered as "Late Modifications" and will be processed in accordance with the procedure set forth above concerning "Late Bids" (paragraph 2.6), except that unlike a "Late Bid", the Purchaser will retain the modification until a selection is made.

2.12.3. A modification to a Bid that 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 favorable to the Purchaser, the modified Bid may be used as the basis of Contract award.

2.12.4. 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.

2.13. WITHDRAWAL OF THE BID

2.13.1. A Bidder may withdraw its Bid at any time prior to the Bid Closing Date 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 remove the Bid from the Purchaser's premises.

2.13.2. Except as provided in paragraph 2.8.4 (b) above a Bidder may withdraw his Bid after the Bid Closing Date only by forfeiture of the Bid Guarantee.

2.14. REQUESTS FOR IFB CLARIFICATIONS

2.14.1. Bidders, at the earliest stage possible during the solicitation period, are **strongly encouraged to query and seek clarifications** pertaining any matters of a contractual, administrative and technical nature relevant to this IFB.

2.14.2. All questions and requests for clarification shall be forwarded to the Purchaser via email using the Clarification Request Form provided at BOOK I Annex D. All questions and requests must reference the section(s) in the IFB subject for clarifications. Such questions shall be forwarded to the Point of Contact specified in paragraph 2.16 and shall be received **not later than twenty-eight (28) calendar days prior to the stated "Bid Closing Date"**. The Purchaser is under no obligation to answer questions submitted after this deadline has elapsed. Requests for clarification must address the totality of the concerns of the Bidder for the IFB, as the Bidder will generally not be permitted to revisit areas of the IFB for additional clarification except as noted in paragraph 2.14.3 below.

2.14.3. 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 prior to the stated "Bid Closing Date".

2.14.4. It is the responsibility of the Bidders to ensure that all Clarification Requests submitted bear no mark, logo or any other form or sign that may lead to reveal the Bidders' identity in the language constituting the clarification itself. This prescription is not applicable to the mean used for the transmission of the clarification (i.e. email).

2.14.5. The Purchaser declines all responsibilities associated to any and all circumstances regardless of the nature or subject matter arising from the Bidders' failure or inability to abide to the prescription in paragraph 2.14.4 above.

2.14.6. The Purchaser may provide for the removal of any form of identification in the body of the clarification request in those instances in which such practice is feasible as well as providing for a re-wording of the clarification request in those cases in which the original language submitted is deemed ambiguous, unclear, subject to different interpretation or revelatory of the Bidders identity.

2.14.7. Bidders are advised that subsequent questions and/or requests for clarification included in a Bid shall neither be answered or considered for evaluation and may be considered by the Purchaser as grounds for a determination of non-compliance.

2.14.8. Except as provided above, all questions will be answered by the Purchaser, and the questions and answers (deprived of any mean of identification of the questioner) will be issued in writing to all prospective Bidders.

2.14.9. The published answers issued by the Purchaser shall be regarded as the authoritative interpretation of the Invitation For Bids, and may lead to a formal amendment to the IFB. Such amendment may also contain changes to the language, terms, conditions and/or specifications of the IFB.

2.14.10. Amendment to the language of the IFB included in the answers of the Purchaser, and/or the formal IFB amendment, shall be incorporated by the Bidder in its offer. The Bidders are requested to acknowledge the receipt of each IFB amendment and Purchaser answer to Clarification Requests by signing Book I Annex B-9.

2.14.11. The Purchaser reserves the right to decline to accept Clarification Requests clearly devised or submitted for the purpose of artificially extending the bidding time (e.g. clarifications re-submitted using different wording where such wording does not change the essence of the clarification being requested).

2.15. REQUEST FOR WAIVERS AND DEVIATIONS

2.15.1. Bidders shall note that requests for alteration to, waivers of, or deviations from the Schedules, the Special Contract Provisions, the Contract General Provisions, the Technical Specifications, the Statement of Work and any other Terms and Conditions of the Prospective Contract will not be considered after the Request for Clarification process. Requests for alterations to the other requirements, terms or conditions of the IFB or the Prospective Contract may only be considered as part of the clarification process set forth in paragraph 2.14 above.

2.15.2. Requests for alterations to the specifications, terms and conditions of the Contract that 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.

2.16. PURCHASER POINT OF CONTACT

The exclusive Purchaser Point of Contact for all information concerning this IFB is:

NATO CI Agency

ACQ/ASG

Avenue du Bourget 140

B-1110 Brussels, Belgium

Attn: Ms. Viktorija Navikaitė

Fax: +32 (0)2 707 8770

Tel: +32 (0)2 707 8210

E-mail: viktorija.navikaite@ncia.nato.int

2.17. ELECTRONIC TRANSMISSION OF INFORMATION AND DATA

2.17.1. The Purchaser will endeavor to communicate answers to questions and requests for clarification and amendments to this IFB to the prospective Bidders by the fastest means possible including the use of e-mail where companies have forwarded the necessary address information.

2.17.2. Bids received by e-mail will not be considered.

SECTION 3 BID PREPARATION INSTRUCTIONS

3.1. GENERAL

3.1.1. Bids shall be prepared in accordance with the instructions set forth herein. Failure to comply with these instructions may result in the Bid being declared non-compliant.

3.1.2. Bidders shall prepare a complete Bid that comprehensively addresses all requirements stated herein. The Bid shall demonstrate the Bidder's understanding of the IFB and its ability to provide all the deliverables and services listed in the Schedule of Supplies and Services.

3.1.3. Partial Bids will be determined to be non-compliant.

3.1.4. **The Bidder shall not restate the IFB requirements in confirmatory terms only.** Bids shall provide the level of detail necessary for the Purchaser to make an objective assessment of what is being offered and whether such an offer meets the requirements of the Prospective Contract. Bidders are admonished that Bids that fail to provide such a level of detail or that address salient aspects of the IFB in a cursory manner **may be declared non-compliant** without recourse to further clarification.

3.1.5. Bidders shall prepare their Bid, in three (3) parts, in the following quantities:

a. The Administrative Envelope: One (1) Original Paper copy

b. The Price Quotation: One (1) Original Paper and two (2) Electronic Soft Copies (on CD ROM or DVD ROM)

c. The Technical Proposal: One (1) Original Paper and two (2) Electronic Soft Copies (on CD ROM or DVD ROM)

3.1.6. Documents submitted in accordance with paragraph 3.1.5 above shall be classified no higher to the level specified in paragraph 2.5.

3.1.7. Bid language shall be English.

3.1.8. Bidders are advised that the Purchaser reserves the right to incorporate the successful Bidders Technical Proposal in whole or in part in the resulting Contract.

3.2. ADMINISTRATIVE ENVELOPE

3.2.1. The Administrative Envelope shall contain signed originals of the Required Certifications and the original of the Bid Guarantee.

3.2.2. Bid Guarantee

a. The Bidder shall provide the original of the Bid Guarantee required at paragraph 2.9 of these 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.

b. Bidders are reminded that the Bid Guarantee shall reflect any extensions to the Bid Validity Date due to extensions in the Bid Closing Date.

3.2.3. Bid Certificates

a. The Bidder shall complete and return, signed in original, the following certificates attached at BOOK I Annex B to this IFB- (BOOK I Annex B-1 through BOOK I Annex B-15) in order to certify that they will abide by all Terms and Conditions of Book II:

i. Certificate of Legal Name of Bidder (BOOK I Annex B-1);

ii. Certificate of Independent Determination (BOOK I Annex B-2);

iii. Certificate of Bid Validity (BOOK I Annex B-3);

iv. Certificate of Understanding (BOOK I Annex B-4);

v. Certificate of Exclusion of Taxes and Charges (BOOK I Annex B-5);

vi. Certificate of Security Obligation (BOOK I Annex B-6);

vii. Certificate of Compliance with AQAP 2110 or ISO 9001 (BOOK I Annex B-7). **The Bidder shall attach a copy of the company's AQAP 2110 or ISO 9001 Certification**.

viii. Disclosure of Requirements for the NCI Agency Execution of Supplemental Agreements (BOOK I Annex B-8)

ix. Acknowledgment of Receipt of Amendments to the IFB ~~and Purchaser Answers to Clarification Requests~~ (BOOK I Annex B-9)

x. Certification of NATO Member Country Origin of Delivered Equipment, Services, Materials and Intellectual Property Rights (BOOK I Annex B-10)

xi. Certification on Security Clearance (BOOK I Annex B-11)

xii. List of Proposed Key Personnel (BOOK I Annex B-12). **The list shall be in line with SOW Section 2 requirements**.

xiii. List of Prospective Subcontractors (BOOK I Annex B-13)

xiv. Bidder Background IPR (BOOK I Annex B-14)

xv. List of Subcontractor IPR (BOOK I Annex B-15)

b. Bidders are required, in accordance with the certificate at **Annex B-8** 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. Supplemental Agreements are typically associated with, but not necessarily limited to, national export control regulations, technology transfer restrictions, Technical Assistance Agreements, and end user agreements or undertakings. 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. The terms of supplemental agreements, if necessary, are the Bidders / Contractors responsibility and shall be totally consistent with the terms of the (Prospective) Contract, and shall not duplicate, negate, or further interpret any provisions of this Contract. The terms of the (Prospective) Contract shall take precedence over the Supplemental Agreement.

c. Concerning the certificate at **Annex B-12**, a separate table shall be prepared for subcontractor personnel if applicable, in accordance with paragraph 1.4.4 above.

d. As for certificate at **Annex B-13**, Bidders shall identify by name, project role, and country of origin all significant sub-contractors whose estimated **value of the subcontract is expected to equal or exceed EUR 125,000**. If there are no sub-contractors involved, the Bidder shall state this separately. **The subcontractors listed in this certificate shall be traceable in the Bidding Sheets**.

3.3. PRICE PROPOSAL PACKAGE

3.3.1. Bidders shall prepare their Price Proposal by completing the Bidding Sheets enclosed herein (BOOK I Annex A-2). Bidder shall propose an accurate and complete price quotation in completing the Bidding Sheets as defined in the Book I. **No alteration of the form and pre-filled content of the Bidding Sheets is allowed, unless otherwise specified**.

3.3.2. Price Proposal Package must contain the following documentation and media:

a. One (1) printed, completed and signed original of Book I Annex A-2 Cover Page;

~~a.~~b. One (1) printed original of Book I Annex A-2 "Bidding Sheets" completed as per Book I Annex A-1 instructions. **Please note that both, CLIN Summary tab of the Bidding Sheets, as well as CLIN Price Breakdown tabs per each CLIN need to be printed out and included in the Package**;

~~b.~~c. Two (2) CD-ROMs or DVDs containing an electronic version in Ms Excel of the Bidding Sheets as per Book I Annex A-2.

3.3.3. Bidders shall furnish firm fixed prices for all required CLINs (including Optional CLIN 10) in accordance with the format set forth in the instructions for preparation of the Bidding Sheets (BOOK I Annex A-1).

3.3.4. **Bidders shall provide a breakdown of the cost for each CLIN by completing the CLIN Price Breakdown sheets** (see CLIN Price Breakdown Instructions in BOOK I Annex A-1) and entering the resultant Firm Fixed price in the appropriate columns. The quoted prices for each individual CLIN element must be realistic and accurate as defined in Book I paragraphs 3.3.1~~7~~8 and 4.3.4.

3.3.5. The Bidder shall identify for each CLIN all significant sub-contractors and provide required information about their prospective sub-contractors whose estimated value of the subcontract is expected to equal or exceed EUR 125,000 using the “List of Prospective sub-contractors” form attached to Book I Annex B-13.

3.3.6. Bidders shall separately price the cost of Warranty. Zero values or the statement that the Bid price includes the cost of warranty are not allowed.

3.3.7. 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:

a. the currency is of a “Participating Country" in the project, and

b. 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 sub-Contracts and their approximate anticipated value shall be listed on a separate sheet and included with the Price Proposal Package.

c. Bidders are advised that a Bid made in multiple currencies may result in a Contract expressed in such currencies and amounts, and payment will be made in such currencies and amounts.

3.3.8. Bidders are informed that the Purchaser is exempt from all direct taxes (including VAT), and all customs duties on merchandise imported or exported. Bidders shall therefore exclude from their Price Quotation all taxes, duties and customs charges from which the Purchaser is exempted by international agreement. Bidders are reminded of the requirement to complete the certification to this effect in BOOK I Annex B-5. The Contractor shall be responsible for ensuring that its respective Sub-contractors are aware that the Purchaser is exempt from taxes and customs duties. The Contractor (and its 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 NCI Agency under this Contract.

3.3.9. All prices quoted in the proposal shall be DDP (Delivered Duty Paid destination) for delivery to final destinations in accordance with the International Chamber of Commerce INCOTERMS. They shall also cover all packaging, packing, preservation, insurance and transportation charges. Prices quoted shall include all costs for items supplied and delivered to final destination.

3.3.10. Except as required in the Bidding Instructions, no other documentation besides the Bidding Sheets shall be included in the Price Quotation. Any other document of a contractual or technical nature will not be considered during evaluation and may be cause for a determination of non-compliance by the Purchaser.

3.3.11. Partial Bids or partial price quotations will be rejected and may be cause of determination of non-compliance by the Purchaser.

3.3.12. Bidders shall insert Firm Fixed Prices for the first option period (first three years) of the Contractor Logistics Support Option.

3.3.13. When completing the Bidding Sheets the Bidder shall insert information in all yellow cells of the Bidding Sheets for each relevant CLIN. 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. If the price of a line item is expressed in different currencies, these shall be identified, and there shall be as many totals on that line item as there are currencies. In preparing the Price Quotation, Bidders shall ensure that the prices of the Sub-items total the price of the major item of which they constitute a part. The accuracy of the inputs of the Priced Proposal Sheets is the responsibility of the Bidder. The Purchaser in its favor may resolve ambiguous computation of prices.

3.3.14. Where an item specified in the requirement is no longer available, Bidders shall provide the nearest available equivalent that meets or exceeds the specifications of the item that it replaces. Bidders shall provide technical data on the alternative product and justifying its inclusion.

3.3.15. The Bidder shall furnish firm fixed price quotations, for all proposed items including all options provided for in this IFB with any and all appropriate additions. Partial quotations shall be rejected.

3.3.16. The Bidder 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.

3.3.17. The Bidder shall provide a sub-section that sets forth the current financial condition of the Prime Contractor, demonstrating and proving that the Corporation has sufficient financial resources to undertake the Project and perform the contract or the ability to obtain them. In this sub-section, the Bidder also shall state whether or not he is now in receivership or has filed with legal authorities for protection from creditors. Where the Prime Contractor is a publicly held corporation, the Bidder shall provide the latest quarterly or annual financial report that it issues to its shareholders. If the Prime Contractor has issued debt instruments such as corporate bonds or other credit devices, the Bidder shall provide evidence of its current debt rating made by an independent third party assessor. The Purchaser does not ask for submissions containing confidential internal business analyses, projections or strategies, but requires evidence available to the business community that demonstrates that the Prime Contractor maintains a solid financial basis with which it may complete the Contract.

3.3.18. Should the Lowest Offered Price appear to be substantially different from the next lowest prices offered, the Purchaser will review the Price Quotation to determine if a reasonable explanation for the differential is apparent. 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. Details about Price Realism Procedure are explained at Book I paragraph 4.3.

3.4. TECHNICAL PROPOSAL

3.4.1. Bidders shall demonstrate a detailed understanding of the objectives as well as of operational and technical requirements as defined in the IFB. Bidders shall prepare and submit a Technical Proposal that shall present their proposal for each of the following areas:

a. Table of Contents
b. Executive Summary
c. Section 1 Corporate Organisation/ Capital Facilities
d. Section 2 Corporate Experience
e. Section 3 Preliminary Project Implementation Plan (PIP)
    i. PIP Section 1 Project Management (PM) and Control
    ii. PIP Section 2 System Engineering and Design
    iii. PIP Section 3 Quality Assurance (QA)
    iv. PIP Section 4 Configuration Management (CM)
    v. PIP Section 5 Integrated Logistics Support (ILS)
    vi. PIP Section 6 Test and Evaluation
    vii. PIP Section 7 Documentation
    viii. PIP Section 8 System Acceptance
    ix. PIP Section 9 Training
    x. PIP Section 10 Reliability, Availability, Maintainability and Testability (RAMT)
    xi. PIP Section 11 Contractor Logistics Support (CLS)
    xii. PIP Section 12 Security Accreditation Plan (SAP)
    xiii. PIP Section 13 Risk Assessment and Management Plan (RAMP)
    xiv. PIP Section 14 Site Installation and Civil Works
f. Completed Book I Annex C – Technical Proposal Cross Reference ~~Matrix~~Table
g. Completed Book I Annex E - Requirement Traceability Matrix

3.4.2. Bidders shall include only material relating to the Table of Contents, Executive Summary and the Sections 1 through 3 above in the Technical Proposal. Additional materials such as brochures, sales literature, product endorsements and unrelated technical or descriptive narratives shall not be included in the Technical Proposal. These materials may be included in a separate volume but must not be labelled as the Technical Proposal.

3.4.3. **Table of Contents**: Bidder shall demonstrate a detailed understanding of the technical requirements. Bidders shall compile a detailed Table of Contents that lists not only the Section Headings but also the major sub-sections, and topic headings required as set forth in these Instructions or implicit in the organisation of the Technical Proposal.

3.4.4. Following the Table of Contents,

a. The Bidder shall include a completed **Technical Proposal Cross-Reference Table** (BOOK I Annex C). The Bidder shall confirm that it accepts and will perform the requirements described in the Statement of Work, if awarded the Contract, by completing and submitting the Cross Reference/Compliance Table as detailed in Annex C. The Bidder shall complete Column three (3) (Bid Reference) of the Table, citing the appropriate section of the Technical Proposal that corresponds to each paragraph of these Instructions for the Preparation of the Technical Proposal that describes how the respective requirements will be met. The completed Table serves as an index for the Purchaser's Technical Evaluation Panel and also as an aide memoire to the Bidder to ensure that all the required information has been provided in the Technical Proposal.

b. In addition to this Section (Book I paragraph 3.4.4.a), the Bidder shall prepare **Requirement Traceability Matrix** as per Book I Annex E that lists, in sequential order, every paragraph in Statement of Work (SOW) and all Annexes of the SOW of the Prospective Contract. Bidder shall clearly indicate where the relevant information of the SOW (and all Annexes) requirements can be found in its technical proposal by writing page/item numbers of this respective section in the proposal.

3.4.5. **Executive Summary**: Bidders shall provide an overview of the salient features of their technical proposal in the form of an executive summary.

a. This summary shall provide general description of the major points contained in each of the required sections of the Technical Proposal and shall demonstrate the Bidder's comprehension of BRASS system, their constraints, implementation environment and the problems and risks of project implementation.

b. The Bidder shall discuss not only how the proposal meets the requirements but also how the Bidder intends to overcome the problems and mitigate the risks.

3.4.6. **Section 1: Corporate Organisation/Capital Facilities**

a. This section shall describe the Corporate Structure and organization of the Prime Contractor and the administration of the Prospective Contract within the overall corporate structure. This section shall indicate the chain of authority within the Prime Contractor's organisation from the Project Manager to the Chief Executive Officer.

b. The Bidder shall describe the corporate resources (with posts or names) that are available to support the Contract that are resident in the organisation of the Prime Contractor but not directly under the authority of the Project Manager.

c. The Bidder shall describe the process by which the Project Manager may have access to these "in-house" corporate resources and what level of authority is required in the Corporation hierarchy to secure the needed resources.

d. The Bidder shall provide evidence that the proposed Project Manager and the Deputy Project Manager are experienced senior personnel with demonstrated capability in managing an acquisition programme of this magnitude. The positions shall have sufficient inherent authority and visibility in the overall corporate structure to properly execute the decisions that will be required to be made in the successful implementation of a project of this size and complexity.

e. The Bidder shall describe the responsibilities of its Project Management Office (PMO) and describe the associated staffing and resources.

f. The Bidder shall identify his major proposed prospective sub-Contractors for the Contract, in compliance with Book I Annex B-13. The Bidder shall also submit a detailed and thorough subcontracting plan that identifies subcontractors/sub-vendors and their areas of responsibility/delivery. The plan shall also demonstrate that the prospective sub-contractor(s) will agree to abide by the requirements of the prime Contract.

g. Major proposed sub-Contractors, for purposes of this sub-section, shall refer to the criteria set forth in the General Provisions of the Prospective Contract entitled “Sub-Contracts”.

h. The Bidder shall include a draft copy of the proposed sub-Contract and a summary of the supplies and or/services to be furnished by the prospective sub-contractor. The Bidder shall include a letter of intent from the proposed sub-Contractor that details its willingness to enter into a sub-Contract with the Bidder if the Bidder shall receive award of the Procpective Contract.

i. With regard to major sub-Contracts, the Bidder shall identify those items that are sub-Contracted (assemblies and sub-assemblies) and that are considered to be on the “Critical Path” to meeting the delivery schedule of the Contract.

j. For these sub-Contracted items, the Bidder shall provide a rationale for the selection of the sub-Contracted vendor, and an analysis of the vendor. 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.

k. The Bidder shall provide a sub-section that identifies the items (assemblies, sub-assemblies) and services that are to be fabricated and/or performed by the corporate resources of the Prime Contractor.

l. The Bidder shall identify the location of the production facilities which will be utilized, and/or the source within the corporate organisation of the services and expertise required.

m. The Bidder shall show existing capital assets and provide a detailed proposal of what additional equipment or facilities that will be acquired or constructed in order to meet the Contract schedule.

n. The Bidder shall further provide a description of any retooling efforts required and a time forecast of when these efforts can be completed.

o. The Bidder shall describe the distribution, warehousing, or order-processing capabilities the Bidder has that enables it to provide efficient and prompt delivery of hardware in satisfaction of short-notice or unpredictable customer orders.

3.4.7. **Section 2: Corporate Experience**

a. The Bidder shall in this section detail its experience in the design, development, fabrication, installation, maintenance and support of Defence Radio Frequency (RF) Systems Specifically, the Bidder shall describe:

i. the experience of the Bidder over the last five (5) years in the design, manufacture and installation of RF defence systems in general;

ii. the experience of the Bidder over the last five (5) years in the maintenance and support of similarly sized Defence Radio Frequency Systems;

iii. an RF defence system as offered in its proposal that has been delivered and accepted within the last five (5) years, or that the Bidder is currently under Contract to deliver such system.

b. The Bidder shall demonstrate that its sub-contracted source(s) for critical items have the same level of experience for their respective areas of expertise as is required of the Prime Contractor. Corporate experience encompasses sub-contractors.

c. The Bidder shall describe its experience and expertise in providing warranty support and repair-and-replacement service for similar Defence Radio Frequency systems for large, geographically-dispersed organisations.

d. The Bidder shall confirm its and its subcontractor's experience in providing the implementation +CLS+ Warranty demonstrating examples of work performed for either other NATO or National Contracts.

e. Individual skill and experience: The Bidder shall provide resumes of the proposed individuals to perform the technical tasks under the proposed Work Packages and the resumes of the individuals designated as Key Personnel in Annex B-12.

3.4.8. **Section 3: Preliminary Project Implementation Plan (PIP)**

The Preliminary PIP shall provide detailed descriptions of how the proposed design will meet each of the specific requirements of the IFB.

a. PIP Section 1: Project Management and Control Plan (PMCP)

i. The Bidder shall develop a preliminary Project Management and Control Plan (PMCP) in accordance with Statement of Work (SOW) paragraph 2.3.2 of the Prospective Contract. This plan shall identify the significant tasks required to be accomplished and the items to be delivered in the execution of the Contract. The Plan will centre on a preliminary Project Work Breakdown Structure (PWBS) and supporting charts in accordance with SOW paragraph 2.3.2 (c) of the Prospective Contract.

ii. The Contractor shall also develop a preliminary Project Master Schedule (PMS) in accordance with SOW paragraph 2.3.2 (f) of the Prospective Contract that shall contain all Contract events and milestones.

iii. The Bidder shall demonstrate the realism of approach to accomplish the work within the time schedule defined in the IFB.

iv. In PMS, the relationship between the Work Packages and project deliverables shall be clearly demonstrated as well as the schedule of sub-Contracted performance.

v. This preliminary PMCP shall also consider all aspects of project management and control and shall demonstrate how all the critical milestones defined in the BOOK II Part I Section 2 will be met.

vi. The Bidder shall not alter or amend the dates for Milestones (BOOK II Part I Section 2).

vii. The Bidder shall demonstrate the realism of approach to accomplish the work within the time schedule defined in the IFB. The dates set forth in BOOK II Part I Section 2 shall be fully supported and coherent by/with the Gantt/PERT diagrams as well as the PWBS.

viii. The Bidder shall demonstrate that it has taken into account the constraints of the implementation environment and reflect this understanding in his draft preliminary Project Management and Control Plan.

b. PIP Section 2: System Engineering and Design

i. In this Section, the Bidder shall submit a preliminary System Engineering and Design Plan including a preliminary System Safety Engineering Plan and a preliminary Electromagnetic Interference and Compatibility (EMI/EMC) Control Plan as sub plans describing the preliminary design of the proposed System.

ii. The Bidder shall support its design with such information as to convincingly demonstrate that the proposed design will meet the safety and security requirements as set forth in SOW Section 4 and Section 5 of the Prospective Contract as well as functional and technical requirements as set forth in SOW Annex A, Annex-B and Annex-D of the Prospective Contract.

iii. The Preliminary System Engineering and Design Plans shall provide detailed descriptions of how the proposed designs of both projects shall meet each of the specific performance requirements/parameters.

iv. The bidders shall take into account the constraints of the site and number of simultaneous transmissions, as well EMC, in his technical proposal.

v. The Preliminary System Engineering and Design Plans shall demonstrate that the system as delivered will meet the safety and security requirements.

vi. The Bidder shall describe the Bidder's approach to preparing and maintaining the Engineering Documentation Package.

vii. The Bidder shall provide equipment specification for each capability separately.

viii. The Bidder shall furnish drawings, diagrams and specifications.

ix. The Bidder shall provide predicted performance characteristics and specifications based on engineering analysis and/or extrapolations from previous data.

x. Bidder's technical proposed designs for BRASS system shall provide detailed information on how the Bidder intends to meet performance, functional or architectural requirements defined in the SOW and its all Annexes. Failure to provide detailed technical information any of the bidding requirements or omission of the critical information may result in a determination of non-compliance for the entire Bid.

xi. Bidder shall provide assurance that they understand both the requirements on the isolator functionality and viable methods for attaining accreditation for their solution in accordance with SOW Section 5 and SOW Annex-A Section 6. Failure to provide detailed technical information of these sensitive bidding requirements or omission of any critical information may result in a determination of non-compliance for the entire Bid.

xii. The Bidder shall agree to abide by and implement the security mechanism as defined in the NATO Security Policy and supporting directives as per the IFB references.

xiii. The Bidder shall propose automated tools to process classified data and information that shall meet the respective performance and security requirements as stated at Section 5 of the SOW.

xiv. This Section (security related) shall be submitted as a self-contained volume or volumes of the Technical Proposal and shall be segregated from the other materials insofar as the nature of the responses will be subject to Security Classification.

xv. The Bidder shall demonstrate and confirm that the hardware to be procured in accordance with this IFB meets the hardware specifications as defined in SOW Annex-A and SOW Annex-D.

xvi. The Bidder shall describe the Bidder's Risk Assessment including proposing any appropriate change requests against the Functional Baseline.

xvii. The Bidder shall provide a detailed plan for the antenna farms of the Transmit and Receive sites containing the location and physical arrangement of , but not limited to, antenna locations, ground planes (where applicable), and transmission cable layouts represented at a suitable scale on a site layout plan.

xviii. The Bidder shall provide a matrix with a justified calculation of expected worst-case antenna isolation values between all antenna port pairs, when measured at the antenna matrix output.

c. **PIP Section 3: Quality Assurance (QA)**

i. The Bidder shall develop a preliminary Quality Assurance Plan in accordance with Statement of Work (SOW) Section 6 of the Prospective Contract. The Bidder shall provide information sufficient to demonstrate that the Quality Assurance and Quality Control (QA/QC) Programme meets the requirements of the Prospective Contract. The Bidder shall provide certification confirming that the Quality Programme meets the equivalent national and/or international standards.

ii. The Bidder shall also describe the QA/QC organisation of his Company and the position it occupies within the management structure of the Company. This shall include the proposed overall QA Manager as well as detailing how the Software, Hardware and Documentation aspects of QA Management shall be exercised.

iii. The proposed Quality Assurance / Quality Control Plan shall show how procedures are developed, implemented and maintained to adequately control the design, integration, production, purchasing, installation, inspection, testing, configuration management and customer support of all services and all products (both management products and specialist products), in accordance with the requirements of this Contract.

iv. The proposed QA/QC Plan shall describe the quality criteria that will be applied to each of the deliverables under this Contract (i.e. the documentation as well as the system and all of its components).

v. The proposed QA/QC Plan shall describe the Bidder's internal process for the quality review of the deliverables before their release to the Purchaser.

vi. The proposed Quality Plan shall describe how all necessary assistance shall be provided to the Quality Assurance Representative or his delegated National QAR, and how quality records for the prime and any Sub-contractors or consortium members shall be made available for evaluation.

vii. The Bidder shall clearly indicate the Quality-related activities, responsibilities, and controls for the prime and any Sub-contractors and shall state how he intends to ensure compliance of his prospective sub-Contractors and, as applicable, of the prospective suppliers of Commercial-Off-The-Shelf (COTS) equipment with QA/QC requirements of the SOW of the Prospective Contract.

d. **PIP Section 4: Configuration Management**

i. The Bidder shall provide a preliminary version of the Bidder's Configuration Management (CM) Plan for BRASS in accordance with SOW Section 7 of the Prospective Contract that shall detail the processes, methods and procedures that would be used to implement the requirements as set forth in the SOW of the Prospective Contract.

ii. The Bidder shall outline how he adopts the Configuration Management processes and deliverables to the scope of this Contract as requested in the SOW Section 7.

iii. The Bidder shall demonstrate that the various baselines referred under SOW paragraph 7.5 will be established using automated tools.

iv. In addition, the Bidder shall demonstrate that a Configuration Status Accounting (CSA) database will be maintained using software tools during the Contract.

v. The Bidder shall describe the Bidder's approach to conduct the Physical Configuration Audit for each site, including the verification of delivered configuration items against the Product Baseline.

vi. The Bidder shall provide, as part of the CM Plan, A project specific, Configuration Control process description; an initial set of project specific Configuration Item selection criteria for the capabilities; an initial set of project specific Configuration Items (CI) including their attributes and relationships among each other for the Capabilities.

e. PIP Section 5: Integrated Logistics Support

i. The Bidder shall provide a high level description of the proposed Integrated Logistics Support Plan. This plan shall cover the requirements of the Prospective Contract as set forth in Section 8 of the Statement of Work.

ii. The Bidder shall describe its approach to the BRASS-BGR systems maintenance and Supply Support for both hardware and software and shall describe how it will meet the requirements in accordance with SOW paragraph 8.1 to 8.8 of the SOW of the Prospective Contract. The Bidder shall describe the proposed spares provisioning methodology.

iii. The Bidder shall prepare draft Customer Support Concept and outline how it adopts the Support processes and deliverables to the scope of this Contract.

iv. The Bidder shall also provide how it fulfil his roles and responsibilities in relation to each of the elements of the Contractor Logistics Support (CLS) concept during Contract Implementation and Warranty detailed at SOW paragraph 8.7 of the Prospective Contract. In addition, The Bidder shall provide a preliminary CLS Plan as set forth in SOW paragraph 8.7 and 8.8 of the Prospective Contract.,

f. **PIP Section 6: Test and Evaluation**

i. The Bidder shall describe in detail its approach to develop test and evaluation documentation.

ii. The Bidder shall identify its proposed test organisation and provide preliminary Test and Evaluation plan by WBS for the allocation of personnel and the time line for the Test activities set forth as requirements in SOW Section 10 of the Prospective Contract.

iii. This plan shall also include a preliminary Security Test and Evaluation Plan (STEP) that meets the requirements set forth as in SOW Section 5 of the Prospective Contract.

iv. The Bidder shall describe the major components, sub-assemblies and assemblies that proposed to be submitted for acceptance on the basis of prior testing and qualification and that are expected to undergo partial testing and extensive testing and evaluation.

v. If there are elements of the System that are proposed to be submitted on the basis of a Certificate of Conformity based on prior test and qualification, the Bidder shall provide a summary of the particulars and especially the dates of the prior tests and for whom the testing was executed.

vi. The Bidder shall describe how the proposed Certificate of Conformity or request for exemption of testing based on prior qualification will be processed from QA and CM aspects.

vii. The Bidder shall describe the preliminary version of procedures and controls to be employed for testing of components, sub-assemblies and assemblies that are sub-Contracted and tested at sub-Contractor's facilities.

g. **PIP Section 7: Documentation**

i. In this Section, the Bidder shall provide a preliminary Documentation Plan by WBS to detail the resources allocated and the schedule of work to deliver the documentation required in SOW Section 13 of the Prospective Contract.

ii. In this plan, The Bidder shall describe how it proposes to comply with each of the documentation requirements detailed in SOW Section 13 of the Prospective Contract.

iii. The Bidder shall also identify the documentation team and the individual responsible within its organisation for ensuring such documentation is delivered on schedule and to the Contract requirements.

h. **PIP Section 8: System Acceptance**

i. The Bidder shall develop a System Acceptance Plan in accordance with Statement of Work (SOW) Section 11 of the Prospective Contract. The Bidder shall provide a preliminary System Acceptance Plan by WBS for the allocation of personnel and the time schedule to accomplish all the activities required and ensure the timely delivery of all documentation and other deliverables required for successful Final Systems Acceptance (FSA).

i. **PIP Section 9: Training**

i. The Bidder shall provide a preliminary Training Plan in accordance with SOW Section 14 of the Prospective Contract, detailing the training methodology for training of test personnel, operators, maintainers and system administrators, schedules for the initial training of personnel, the proposed training materials and the proposed delivery schedule of those materials.

ii. The Bidder shall describe its training organisation and demonstrate that adequate staffing in its organisation will be available to train the student population and meet the schedule without impacting on other activities.

iii. The Bidder shall describe its approach regarding how support staff designated by the Site POC will be provided training on all tasks required to operate the system, perform daily maintenance and administration, disaster recovery, and problem isolation. The Bidder shall describe the Bidder's approach regarding how this training shall be structured according to the First, Second, and Third-Level support concept.

j. **PIP Section 10: Reliability, Availability, Maintainability and Testability**

i. The Bidder shall provide a preliminary Reliability, Availability, Maintainability and Testability (RAMT) plan compliant with the requirements stated in SOW Section 9 of the Prospective Contract.

ii. The Bidder shall provide calculations that demonstrate that the BRASS BGR and Systems meets the RAMT requirements set forth in SOW Section 9 of the Prospective Contract. The Bidders shall provide these calculations based as much as possible on actual data derived from operational experience of fielded systems and components and extrapolations therefrom, and shall provide a full description of the source data utilised, providing equipment numbers, owners, location and inclusive dates.

iii. The Bidder shall predict the MTBF (Main Time Between Failure) of the system it proposed and justify that the total availability of the system is within the requested values as specified at SOW.

iv. The Bidder shall provide DLOS Links reliability and availability figures.

k. **PIP Section 11: Contractor Logistics Support**

i. The Bidder shall develop a preliminary Contractor Logistics Support (CLS) Plan in accordance with optional Book III. In this section, the Bidder shall provide a preliminary ~~Contractor Logistic Support (~~CLS~~)~~ Plan for the maximum Support Period of the installed BRASS BGR System describing the roles and responsibilities of the Contractor to meet the requirements for CLS concept, as described in SOW paragraphs of the Prospective Contract.

ii. The Bidder shall demonstrate that it is capable of providing CLS after the Warranty period as specified in the SOW of the ~~p~~Prospective Contract and Book III. The Bidder shall provide firm fixed pricing for all CLS ensuring that system reliability, availability, and maintainability requirements, specified in the SOW, continue to be met ~~during~~ throughout the CLS period.

iii. As stipulated in Para 3.2.3.a.iv., the Bidder shall sign Book I Annex B-4 to certify that it is fully aware that the acceptance of Prospective Contract includes the potential responsibilities and obligations to perform CLS for a total of 9 years after the Contract warranty period, if the Host Nation decides to exercise the CLS option. The Bidder shall insert a copy of the signed certificate [Book I Annex-B-4] into its technical proposal.

iv. The Bidder shall identify those items (assemblies and subassemblies) that are to be sub-Contracted for repair, refurbishment, and/or modification, or other services to be performed through a sub-Contractor. The Bidder shall also identify its major proposed sub-contractors for the CLS contract.

v. The Bidder shall include a letter of intent from the proposed sub-contractor that details its willingness to enter into a sub-contract with the Bidder, if the CLS contract would be awarded to the Bidder.

vi. The Bidder shall demonstrate that the proposed Corporate Organisation, meaning the Prime Contractor and any sub-Contractors that are proposed for the CLS effort, shall have, in the aggregate, substantial experience in the maintenance and support of similarly sized RF defence systems over the last five (5) years. The description shall include the number of systems supported, the purchaser of the support, and point of contact with the purchaser for reference. The description shall identify any similarities between CLS contracts previously delivered and the requirements under this IFB.

vii. The Bidder shall provide a description of how its proposed Configuration Management procedures will continue to be implemented on the hardware and software/firmware during the CLS periods.

l. **PIP Section 12: Security Accreditation Plan (SAP)**

i. In this Section, the Bidder shall provide a preliminary Security Accreditation Plan (SAP) by WBS to detail the resources allocated and the schedule of work to obtain the Security Accreditation and to meet the security requirements set forth in SOW Section 5 of the Prospective Contract.

ii. The Bidder shall confirm that it understands and accepts security accreditation documentation review and approval procedures, as defined in the IFB Book II Part III Contract General Provisions, Clause 22.

m. **PIP Section 13: Risk Assessment and Management Plan (RAMP)**

i. In order to demonstrate overall comprehension of the requirements set forth in the Prospective Contract, the Bidder shall provide a preliminary Risk Assessment and Management Plan (RAMP) defining his strategy for risk management to meet the requirements as set forth in SOW paragraph 2.7 of the Prospective Contract.

n. **PIP Section 14: Site Installation and Civil Works**

i. In this Section, the Bidder shall provide a preliminary plan that thoroughly describes the civil works, power and site preparation requirements that must be accomplished to properly install and operate the proposed BRASS-BGR systems as set forth in SOW Section 12 and SOW Annex C of the Prospective Contract.

ii. The Bidder shall provide adequate information regarding the requirements in order to quantify the magnitude of total civil works that must be accomplished on site prior to arrival of the equipment for installation.

iii. The Bidder shall specify any characteristics of the BRASS-BGR systems that constrain the type of civil works that are to be performed to prepare the sites.

iv. In addition, in case of a potential disruption of national communications services due to the contractor activities, the Bidder shall also deliver a preliminary System Installation Transition Plan (SITP) to ensure minimum disruption of provision of national communications services between site preparation and ISAT for the purpose of reducing the risks of Contract cost overrun, and reducing the risks of lengthy disruption to mission-critical HN national communications services. Generally, the plan should provide possibility to close down services gradually. This transition Plan will be subject to the approval of HN Bulgaria, through the Purchaser.

v. Bidder shall confirm its understanding and acceptance of the site access requirements as defined in the IFB.

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. The evaluation of Bids and the determination as to the compliance or technical adequacy of the supplies and services offered will be based only on that information furnished by the Bidder and contained in its Bid. The Purchaser shall not be responsible for locating or securing any information that is not identified in the Bid. Bidders' responses to all IFB requirements and "shall" statements will be assessed for compliancy, completeness of response and quality of proposal.

4.1.3. The Bidder shall have demonstrated comprehension of technical requirements. Bidder shall have demonstrated that the Preliminary Project Implementation Plan provides detailed descriptions of how the proposed design will meet each of the specific requirements of the IFB.

4.1.4. To ensure that sufficient information is available, the Bidder shall have furnished with its Bid all information requested by the Purchaser in the section of this IFB entitled "Bid Preparation Instructions" in order to provide a complete description of the work that will be performed and/or the supplies to be delivered.

4.1.5. Since significant omissions and/or cursory submissions may result in a determination of non-compliance without recourse to further clarification, the information provided by the Bidder in its proposal shall have been to a level of detail necessary for the Purchaser to determine exactly what the Bidder proposes to furnish and whether the offer meets the technical, administrative and cContractual requirements of this IFB.

4.1.6. 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 determination based upon the facts. The purpose of such clarifications will be to resolve ambiguities in the Bid and to permit the Bidder to state its intentions regarding certain statements contained therein.

4.1.7. The purpose of the clarification stage is not to elicit additional information from the Bidder that was not contained in the original submission or not 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 its price quotation at any time.

4.1.8. The Bidder's prompt response to the Purchaser's clarification requests is important and therefore failure to provide the requested clarifications within the time-limits set forth in the specific Clarification Requests may cause the Bid to be deemed non-compliant.

4.1.9. 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 and by inspecting designs that are claimed to be in production, or fielded. This physical inspection shall also apply to assertions in the proposal made on behalf of proposed sub-Contractors. The Bidder shall be responsible for providing access to its own or sub-Contractors' facilities and within national security limitations, providing access to fielded equipment and systems.

4.1.10. The Contract resulting from this IFB will be awarded to the Bidder whose offer, as evaluated by the Purchaser, is the lowest priced Bid in compliance with the requirements of this IFB. The evaluation will be conducted in accordance with NATO Bidding Procedures as set forth in document AC/4-D/2261 (1996 Edition). Evaluation of this IFB will be conducted in accordance with the "One Envelope" procedure in which only the Technical Proposal of the lowest Bidder is evaluated for compliance with the requirements of the IFB. The Bidder who has offered the lowest priced, technically compliant Bid will then be offered the Contract for award.

4.1.11. Failure to satisfy any of the bidding requirements may result in a determination of non-compliance for the entire Bid. In such a case the technical proposal of the Bidder who has submitted the apparent second lowest priced bid will be evaluated.

4.2. ADMINISTRATIVE COMPLIANCE

4.2.1. Prior to opening the Price Proposal Package, Bids will be reviewed for compliance with the Bid Submission Requirements of this Invitation for Bid. These are as follows:

a. The Bid was received by the Bid Closing Date and Time;

b. The Bid was packaged and marked properly;

c. The Bidder has submitted a Bid Guarantee in the required form, in the required amount and for the required validity in the Administrative Package;

d. The Administrative Package contained all the information required in the originally signed copies of the required Certificates in BOOK I Annex B hereto.

e. Facility Security Clearance requirement is acknowledged by signing Annex B-11, and Key Personnel security clearance information is provided in Annex B-12.

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

4.2.3. If it is discovered, during either the Technical or Price evaluation, that the Bidder has taken exception to the Terms and Conditions of the Prospective Contract, or has qualified and/or otherwise conditioned its 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**.

4.3. PRICE EVALUATION

4.3.1. The Bid will be evaluated against the following criteria:

a. Compliance with the requirements for preparation and submission of the Price Quotation set forth in the Bid Preparation Section. To that extent Bidders are advised that the nature of the prices supplied is expected to be Firm Fixed for the fulfilment of all SOW objectives. Furthermore such prices shall not be conditional in nature (i.e. pricing caveated to a particular condition imposed by the bidder). Any comments supplied in the bidding sheets that are conditional in nature may render the bid non-compliant.

b. All pricing data, i.e., quantities, unit prices, shall be provided as reflected in the Bidding Sheets.

c. Bid prices shall include all costs for items supplied, delivered, and supported.

d. All prices shall be accurately entered into appropriate columns, and accurately totalled.

e. The Bidder shall provide accurate unit price (where required) and total price for each line item.

f. The grand total shall be accurate.

g. The currency of all line items shall be clearly indicated.

h. The Bidder shall indicate that in accordance with the treaties governing the terms of business with NATO, it has excluded from its prices all taxes, duties and customs charges from which the Purchaser has been exempted.

i. Price quotes for each individual item(s), and totalled prices shall be accurate and realistic (based on historic data, and/or market and competitive trends in the specified industrial sector(s)) as stated at Book I paragraph 4.4.

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

4.3.3. Determination of Lowest Firm Fixed Price

a. General: In order to determine the lowest offered price, the Purchaser will convert all prices quoted into Euro for purposes of comparison. 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, or any extension thereof.

b. Basis of Price Comparison:

i. Lowest determined total Firm Fixed Price offered for the Basic Contract effort (CLIN 1 through 9-including).

ii. The Total Price Offered for the Basic Contract for CLIN 1 through 9 (including) will be compared on the basis of the prices offered converted to Euro as stated in paragraph 4.3.2.a above.

4.3.4. **Price Realism**

a. Otherwise successful Bidders that submit a price quotation so low that it is not a realistic reflection of the objective cost of performance of the associated technical proposal may be considered by the Purchaser to have submitted an unrealistic offer and that offer may be determined to be non-compliant.

b. Indicators of an unrealistically low bid may be the following, amongst others:

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

   ii. 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.

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

   iv. Lowest Offered Price appear to be substantially different from the next lowest prices offered,

c. If the Purchaser has reason to suspect that a Bidder has artificially debased its prices in order to secure Contract award, the Purchaser will request clarification of the bid in this regard and the Bidder shall provide explanation on one of the following bases:

   i. 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 concerning the preparation of the Price Quotation that makes a convincing case that a mistake was made by the Bidder. In such a case, the Bidder shall petition the Purchaser to either remain in the competition and accept the Contract at the offered price, or to withdraw from the competition.

   ii. The Bidder has a competitive advantage due to prior experience or industrial/technological processes that demonstrably reduce the costs of Bidder performance and therefore the price offered is realistic. Such an argument must support the technical proposal offered and convincing and objectively describe the competitive advantage and the net savings achieved by this advantage over standard market practices and technology.

iii. The Bidder recognises that the submitted Price Quotation is unrealistically low compared to its cost of performance and, for business reasons, the Bidder is willing to absorb such a loss. Such as statement can only be made by the head of the business unit submitting the Bid and will normally be made at the level of Chief Operating Officer or Chief Executive Officer. In such a case, the Bidder shall estimate the potential loss and show that the financial resources of the Bidder are adequate to withstand such reduction in revenue.

d. If a Bidder fails to submit a comprehensive and compelling response on one of the bases above, the Purchaser may determine the Bid submitted as non-compliant. If the Bidder responds on the basis of paragraph 4.4.1.a) above and requests to withdraw from the competition, the Purchaser may, depending on the nature and gravity of the mistake, allow the Bidder to withdraw with or without penalty in terms of drawing on the Bid Guarantee.

e. If the Purchaser accepts the Bidder's explanation of mistake in paragraph 4.4.1.c above and allows the Bidder to accept the Contract at the offered price, or the Purchaser accepts the Bidder's explanation pursuant to paragraph 4.3.1 above the Bidder shall .agree that the supporting pricing data submitted with his Bid will be incorporated by reference in the resultant Contract. The Bidder shall agree as a condition of Contract signature, that the pricing data will be the basis of 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.

f. If the Bidder presents a convincing rationale pursuant to paragraph 4.4.1.c above no additional action will be warranted. The Purchaser, however, reserves its right to reject such an argument if the rationale is not compelling or capable of objective analysis. In such a case the Bid may be determined to be non-compliant.

g. The Purchaser reserves the right to request prime Contractors, or the sub-Contractor 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 sub-Contractor's orders from others for the same or similar items, including explanations for cost variations, 3) sub-Contractor's internal cost estimate, or documentation of whatever means the sub-Contractor used to arrive at the charge.

4.4. TECHNICAL EVALUATION

4.4.1. Upon determination of the lowest-priced Bid as described above, the Bid shall be evaluated to confirm compliance with the SOW associated with the respective sections of the Technical Proposal.

4.4.2. In order for a Bid to be determined to be technically compliant, the Bidder shall have submitted a Technical Proposal (TP) that has met the following criteria after evaluation by the Purchaser:

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

4.4.4. Following the Table of Contents;

a. The Bidder shall have included the completed Technical Proposal Cross-Reference Table at BOOK I Annex C. The Bidder shall have completed Column 3 (Bid Reference) of the Table referred above, citing the appropriate section of the Technical Proposal that corresponds to each paragraph of these Instructions for the Preparation of the Technical Proposal. The completed Table serves as an index for the Purchaser's Technical Evaluation Panel and also as an aide memoire to the Bidder to ensure that all the required information has been provided in the Technical Proposal.

b. In addition to this Section (Book I paragraph 4.5.4.a), the Bidder shall have prepared another Cross-Reference (Requirement Traceability) Matrix that lists, in sequential order, every paragraph in Statement of Work (SOW) and all Annexes of the SOW of the Prospective Contract. Bidder shall have clearly indicated where the relevant information of the SOW (and All Annexes) requirements can be found in his technical proposal by writing page/item numbers of this respective section in the proposal.

4.4.5. The Bidder shall have provided an overview of the salient features of their technical proposal in the form of an executive summary.

a. This summary shall have provided general description of the major points contained in each of the required sections of the Technical Proposal and shall have demonstrated the Bidder's understanding of the project, implementation environment and the problems and risks of project implementation.

b. The Bidder shall have discussed in detail not only how the proposal meets the requirements but also how the Bidder intends to overcome the problems and mitigate the risks.

4.4.6. The Technical Evaluation Criteria is cited in the following paragraphs below:

4.4.7. Section 1: Corporate Organisation/Capital Facilities

a. The Bidder shall have proposed a Corporate Structure and organization of the Prime Contractor and the administration demonstrating that the BRASS- BGR Systems Contract has high visibility within the overall corporate organisation. This section shall have indicated the chain of authority within the Prime Contractor's organisation from the Project Manager to the Chief Executive Officer. The Corporate Structure described shall have adequate depth of resources with the overall corporate organisation to ensure a reserve capability in order to successfully perform the Contract.

b. The Corporate Structure described shall have demonstrated that the Project Manager has sufficient authority and priority within the organisation to access in timely manner corporate resources that are not directly under his control as Project Manager.

c. The Bidder shall have described the process by which the Project Manager may have access to these “in-house” corporate resources and what level of authority is required in the Corporation hierarchy to secure the needed resources.

d. The Bidder shall have provided the comprehensive Curriculum Vitae (CV) for the Project Manager proposed for this project and also the Deputy Project Manager. The Bidder shall have provided a narrative describing the rationale for the selection of these individuals for these posts and have provided detailed descriptions of the experience of the individuals in managing procurement programmes of this magnitude. This section shall have described the authority and responsibility (and the limits) of the Project Manager and the Deputy Project Manager within the overall corporate organisation. The narrative shall have described the circumstances at which the Project Manager must refer decision-making authority to the next level of corporate management..

e. The Bidder shall have described the responsibilities of its Project Management Office (PMO) and described the associated staffing and resources. The description of the staffing and resources shall have covered everything needed 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.

f. The Bidder shall have identified his major proposed prospective sub-Contractors for the BRASS-BGR and System, as stated in Book I Annex-B-13. The Bidder shall have also submitted a detailed and thorough sub-Contracting plan that identifies major sub-Contractors/sub-vendors and their areas of responsibility/delivery. The plan shall have agreed with the Project Control Plan, in that delivery of sub-Contracted items and assemblies, critical components is identified. The plan shall have demonstrated that the Bidder can effectively manage, monitor and control the proposed sub-Contractors and that the sub-Contractors will agree to abide by the requirements of the prime Contract as pertains to flow-down provisions. Such a declaration of sub-contractors to abide by the requirements of the prime contract shall have been available in the Bidder’s proposal.

g. Major proposed sub-contractors, for purposes of this sub-section, shall have referred to the criteria set forth in the General Provision of the Prospective Contract entitled “Sub-Contracts”. The Bidder shall have identified 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.

h. The Bidder shall have included a draft copy of the proposed sub-contract, as applicable. The Bidder shall have included a letter of intent from the proposed sub-contractor that details its willingness to enter into a sub-contract with the Bidder if the Bidder shall receive award of the BRASS-BGR Systems Contract and a summary of the supplies and/or services to be furnished by the prospective sub-contractor.

i. With regard to major sub-Contracts, the Bidder shall have identified those items that are sub-Contracted (assemblies and sub-assemblies) and that are considered to be on the “Critical Path” to meeting the delivery schedule of the Contract.

j. The Bidder shall have provided a description of the parts of the project that he intends to sub-Contract and demonstrate that the chosen sub-Contractors have adequate assets and capacity to fulfil their role to that they have been allocated. The Bidder shall have demonstrated that such sub-Contracted facilities and assets are available to meet the anticipated schedule, and have provided sufficient alternative arrangements in case of the failure to deliver of critical sub-Contracted items.

k. The Bidder shall have provided a sub-section that identifies the items (assemblies, sub-assemblies) and services that are to be fabricated and/or performed by the corporate resources of the Prime Contractor.

l. The Bidder shall have identified the location of the production facilities that will be utilized, and/or the source within the corporate organisation of the services and expertise required. For corporate production facilities, the Bidder shall have provide analytical evidence that adequate capacity exists in order that the required items may be made within the time schedule of the Prospective Contract.

m. The Bidder shall have demonstrated existing capital assets and provide a detailed proposal of what additional equipment or facilities will be acquired or constructed in order to meet the Contract schedule.

n. The Bidder shall further have provided a description of any retooling efforts required and a time forecast of when these efforts can be completed.

o. The Bidder shall have described the distribution, warehousing, or order-processing capabilities the Bidder has that enables it to provide efficient and prompt delivery of hardware in satisfaction of short-notice or unpredictable customer orders. The description must have provide sufficient evidence to confirm that the Bidder will be able to meet the timelines and other shipment and task requirements of the SOW.

4.4.8. Section 2: Corporate Experience

a. The Bidder shall have been an established electronics manufacturer and systems integrator having substantial experience in the last five (5) years in the design, manufacturing, installation, maintenance and support of RF defence systems.

i. The Bidder shall have demonstrated that he has delivered within the last five (5) years, or is under Contract to deliver, RF Defence systems. Alternatively, the Bid shall be based on an existing design that has been operationally tested and the test results certified by national authorities. The design need not be identical to the requirements of this Contract but must be of sufficient similarity that cardinal modifications to the basic design will not have to be undertaken, thus increasing the confidence of the Bidder's ability to deliver within schedule.

ii. The Bidder shall have demonstrated the experience over the last five (5) years in the maintenance and support of similarly sized Defence Radio Frequency Systems;

iii. The Bidder shall have documented that. it has delivered an RF defence system as offered in its proposal and gained acceptance in the last five (5) years, or be currently under contract to deliver such system in an operational capacity. In this sense, “operational capacity” shall not include a current research and development contract or a contract for prototype system(s) but a system to be used and operated as part of a National and/or NATO communications system.

b. The Bidder shall have provided the same information required above for the major sub-contractors for critical assemblies and subassemblies. The sub-contractors need not be manufacturers of the Radio Frequency Systems as a whole, but must demonstrate the level of experience for which they are proposed to deliver or services for which they are proposed to perform..

c. The Bidder shall have described its experience and expertise in providing warranty support and repair-and-replacement service for similar Defence Radio Frequency systems for large, geographically-dispersed organisations. The bidder shall have proofed his experience and expertise for warranty support, repair and replacement service with required documentation.

d. The bidder shall have confirmed his and his subcontractor’s experience in providing the implementation + CLS + warranty by demonstrating examples of work performed for either other NATO or National Contracts.

e. Individual skill and experience: The Bidder shall have provided resumes of the proposed individuals to perform the technical tasks under the proposed Work Packages and the resumes of the individuals designated as Key Personnel in Annex B-12. For each role identified, the resumes shall have demonstrated that they have the expected knowledge, capability and experience to meet the requirements of this Contract.

4.4.9. Section 3: Preliminary Project Implementation Plan (PIP): Bidders shall have demonstrated that the Preliminary PIP provide detailed descriptions of how the proposed design will meet each of the specific requirements of the IFB. The preliminary PIP document shall have met the requirements detailed in Book I from 3.4.9 a through n as well as from 4.4.9.a through n.

a. PIP Section 1: Project Management and Control Plan (PMCP)

i. The Bidder shall have submitted a preliminary Project Management and Control Plan (PMCP) that conforms with the requirements of SOW paragraph 2.3.2 of the Prospective Contract. This plan shall have identified the significant tasks required to be accomplished and the items to be delivered in the execution of the Contract. The preliminary Project Work Breakdown Structure (PWBS), the preliminary Project Master Schedule (PMS) and supporting charts shall have thoroughly described the steps necessary to achieve delivery of the BRASS- BGR Systems within the Contract terms and schedule. The preliminary PMCP shall have been logical and realistic, demonstrating the Bidder's appreciation of the complexity of the Project and his experience in managing large programmes.

ii. The Contractor shall also have developed a preliminary Project Master Schedule (PMS) in accordance with SOW paragraph 2.3.2 (f) of the Prospective Contract that shall contain all Contract events and milestones. The PMS shall have correlated with the PWBS. The PMS shall have included activity network, activity GANTT / Program Evaluation Review Technique (PERT) charts, milestone, and critical path views of the project schedule, showing detailed and high level schedules with associated resources. This Plan shall have been detailed to the level at which all deliverable items required under the Contract are identified and accounted for by a work path that shows the interconnectivity of the various task.

iii. The Bidder shall have demonstrated the realism of approach to accomplish the work within the time schedule defined in the IFB. The Bidder shall have submitted a PMCP compliant with BOOK II Part I Section 2 and the Gantt/PERT diagrams set forth in BOOK II Part I Section 2.

iv. In PMS, the relationship between the Work Packages and project deliverables shall have been clearly demonstrated as well as the schedule of sub-Contracted performance and deliveries shall have been clearly integrated into this Plan.

v. This preliminary PMCP shall also have considered all aspects of project management and control and shall have demonstrated how all the critical milestones defined in the BOOK II Part I Section 2 will be met.

vi. The Bidder shall have not altered or amended the dates for Milestones (BOOK II Part I Section 2). These dates shall have been incorporated into the resultant Contract of the successful Bidder.

vii. The Bidder shall have demonstrated the realism of approach to accomplish the work within the time schedule defined in the IFB The dates set forth in BOOK II Part I Section 2 shall have been fully supported and coherent by/with the Gantt/PERT diagrams as well as the PWBS. Separately, Bidders may propose earlier delivery dates than those stated in BOOK II Part I Section 2. Where dates offered are earlier than those set forth in the Prospective Contract, the Purchaser may, at its discretion, accept such dates and the alternative Milestone Schedule will be inserted in the resultant contract.

viii. The Bidder shall have demonstrated that he has taken into account the constraints of the implementation environment and reflected this understanding in his draft preliminary Project Management and Control Plan.

b. PIP Section 2: System Engineering and Design

i. The Bidder shall have submitted a Preliminary System Engineering and Design Plan describing the preliminary design of the proposed System and including a preliminary System Safety Engineering Plan and a preliminary Electromagnetic Interference and Compatibility (EMI/EMC) Control Plan as sub-plans that conform with the requirements of SOW Section 4 of the Prospective Contract.

ii. The Bidder shall have supported this design with such information as to convincingly demonstrate that the proposed design will meet the safety and security requirements as set forth in SOW Section 4 and Section 5 of the Prospective Contract as well as functional and technical requirements as set forth in SOW Annex A, Annex-B and Annex-D of the Prospective Contract. Bidder's technical proposed design shall have provided detailed information on how the Bidder intends to meet performance, functional or architectural requirements defined in the IFB. **Failure to provide detailed technical information any of the bidding requirements or omission of the critical information may result in a determination of non-compliance for the entire Bid**.

iii. The Preliminary System Engineering and Design Plans shall have provided detailed descriptions of how the proposed designs of both projects shall have met each of the specific performance requirements/parameters of the areas detailed at SOW paragraph 4.2 of the Prospective Contract.

iv. The bidders shall have taken into account the constraints of the site and number of simultaneous transmissions, as well EMC, in his technical proposal. An EMC study of the transmitter site shall have been submitted as part of the bid to show that Public and Occupational exposure levels are within international and national guidelines.

v. The Preliminary System Engineering and Design Plans shall have contained as much detail as is practicable in order to demonstrate that the system as delivered will meet the safety and security requirements as set forth in SOW Section 4 and SOW Section 5 of the Prospective Contract as well as functional and technical requirements as set forth in SOW Annex A, Annex-B and Annex-D of the Prospective Contract.

vi. The Bidder shall have described the Bidder's approach to preparing and maintaining the Engineering Documentation Package throughout the design, integration, test and site surveys activities, ensuring consistency between all the documents included in that documentation package.

vii. Equipment specification: For each capability separately;

- For each Hardware Contract Line Item Number (CLIN); the Bidder shall have included in his bid a detailed list of the COTS components proposed to be supplied as part of that CLIN. The product name, manufacturer name, and manufacturer's part number, version, or release number shall have been stated. If a generic or non-vendor specific component is proposed, the Bidder shall have provided the item name.

- The Bidder shall have included in his bid a detailed specification sheet for each item of equipment the Bidder proposes to provide in satisfaction of contractual requirements.

viii. The Bidder shall furnish drawings, diagrams and specifications. If the proposed BRASS- BGR Systems are based on a design that has been tested and the results certified by a national authority, the test performance data shall also have been provided and data projections included for elements that were not tested.

ix. The Bidder shall have provided predicted performance characteristics and specifications based on engineering analysis and/or extrapolations from previous data.

x. Bidder's technical proposed designs for BRASS system shall have provided detailed information on how the Bidder intends to meet performance, functional or architectural requirements defined in the SOW and its all Annexes. Failure to provide detailed technical information any of the bidding requirements or omission of the critical information may result in a determination of non-compliance for the entire Bid

xi. Bidder shall have provided assurance that they understand both the requirements on the isolator functionality and viable methods for attaining accreditation for their solution in accordance with SOW Section 5 and SOW Annex-A Section 6. Failure to provide detailed technical information of these sensitive bidding requirements or omission of any critical information may result in a determination of non-compliance for the entire Bid.

xii. The Bidder shall have agreed to abide by and implement the security mechanism as defined in the NATO Security Policy and supporting directives as per Section 5 of the SOW.

xiii. The Bidder shall have proposed automated tools to process classified data and information that shall meet the respective security requirements as stated at Section 5 of the SOW.

xiv. The Section related to security shall have been submitted as a self-contained volume or volumes of the Technical Proposal and shall have been segregated from the other materials insofar as the nature of the responses will be subject to Security Classification.

xv. The Bidder shall have demonstrated and confirmed that the hardware to be procured in accordance with this IFB meets the hardware specifications as defined in SOW Annex-A and Annex-D.

xvi. .The Bidder shall have described the Bidder's Risk Assessment including proposing any appropriate change requests against the Functional Baseline.

xvii. The Bidder shall have provided a detailed plan for the antenna farms of the Transmit and Receive sites containing the location and physical arrangement of , but not limited to, antenna locations, ground planes (where applicable), and transmission cable layouts represented at a suitable scale on a site layout plan.

xviii. The Bidder shall have provided a matrix with a justified calculation of expected worst-case antenna isolation values between all antenna port pairs, when measured at the antenna matrix output.

c. PIP Section 3: Quality Assurance (QA)

i. The Bidder shall have submitted a preliminary version of the Quality Assurance/Quality Control (QA/QC) Plan in accordance with SOW Section 6 of the Prospective Contract. Within this plan, the Bidder shall have addressed all the requirements of the Contract concerning QA and QC as set forth in Article 25 of the Contract Special Provisions and SOW Section 6 of the Prospective Contract. The Bidder shall have also identified the QA/QC systems (NATO, National, company) that he intended to apply to the performance of this contract and shall demonstrate that his choice complies with the applicable requirements.

ii. The Bidder shall have provided that the QA/QC organization in his company has enough competence with demonstrated capability in managing Quality Programme of a project of this magnitude. The QA/QC organization and the QA Manager have sufficient inherent authority and visibility in the overall corporate structure to properly execute the Software, Hardware and Documentation aspects of QA Management of a project of this size and complexity.

iii. The proposed Quality Assurance / Quality Control Plan shall have demonstrated how procedures are developed, implemented and maintained to adequately control the design, integration, production, purchasing, installation, inspection, testing, configuration management and customer support of all services and all products (both management products and specialist products), in accordance with the requirements of this Contract.

iv. The proposed QA/QC Plan shall have described the quality criteria that will be applied to each of the deliverables under this contract (i.e. the documentation as well as the system and all of its components).

v. The proposed QA/QC Plan shall have described the Bidder's internal process for the quality review of the deliverables before their release to the Purchaser.

vi. The proposed Quality Plan shall have described how all necessary assistance shall be provided to the Quality Assurance Representative or his delegated National QAR, and how quality records for the prime and any Sub-contractors or consortium members shall be made available for evaluation.

vii. The Bidder shall have provided information similar to that set forth in sub-paragraphs of 4.4.9.c above in order to demonstrate the conformance to the QA/QC Contract requirements by the major sub-Contractors and suppliers and shall have stated how he intends to ensure compliance of his prospective sub-Contractors and, as applicable, of the prospective suppliers of Commercial-Off-The-Shelf (COTS) equipment with QA/QC requirements of the SOW of the Prospective Contract.

d. PIP Section 4: Configuration Management

i. The Bidder shall have submitted a preliminary Configuration Management Plan, for BRASS that conforms with the requirements of SOW Section 7 of the Prospective Contract. The Bidder shall have demonstrated that his proposed Configuration Management procedures meet the requirements of SOW Section 7 of the Prospective Contract. The Bidder shall further provide details of his existing CM organisation.

ii. The Bidder shall have outlined how he adopts the Configuration Management processes and deliverables to the scope of this contract as requested in the SOW Section 7.

iii. The Bidder shall have demonstrated that the various baselines referred under SOW paragraph 7.5 will be established using automated tools.

iv. In addition, the Bidder shall have demonstrated that a Configuration Status Accounting (CSA) database will be maintained using software tools during the Contract.

v. The Bidder shall have described the Bidder's approach to conducting the Physical Configuration Audit for each site, including the verification of delivered configuration items against the Product Baseline.

vi. The Bidder shall have provided, as part of the CM Plan, A project specific, Configuration Control process description; an initial set of project specific Configuration Item selection criteria for the capabilities; an initial set of project specific Configuration Items (CI) including their attributes and relationships among each other for the Capabilities.

e. PIP Section 5: Integrated Logistics Support

i. The Bidder shall have provided a high level description of the proposed Integrated Logistics Support Plan. This plan shall have covered the requirements of the Prospective Contract as set forth in Section 8 of the Statement of Work.

ii. The Bidder shall have described his approach and how he will meet the requirements for the BRASS-BGR systems maintenance and Supply Support for both hardware and software in accordance with SOW paragraph 8.1 to 8.8 of the Prospective Contract. The Bidder shall have described the proposed spares provisioning methodology.

iii. The Bidder shall have prepared draft Customer Support Concept and outlined how he adopts the Support processes and deliverables to the scope of this contract. The Bidder shall have provided as part of the Draft Support Concept:

- A project specific, Problem Management process description including all Bidder resources (number and labour categories of staff, nature and quantities of any other required resources) that he will use to provide this 2nd Level Support to the Capabilities 1, 3, 4, and 5.
- A "Problem Analysis Report"- Template
- Draft Maintenance Concept. The Bidder shall have outlined how he adapts the Maintenance processes and deliverables to the scope of this contract.

- Draft Transportation Plan. The Bidder shall have outlined how he adopts the Transportation processes and deliverables to the scope of this contract.

iv. The Bidder shall have provided how he fulfils his roles and responsibilities in accordance with the Contractor Logistics Support (CLS) concept during Contract Implementation and Warranty detailed at SOW paragraph 8.7 of the Prospective Contract. In addition, The Bidder shall also have provided a preliminary CLS Plan as set forth in SOW paragraph 8.7 and 8.8 of the Prospective Contract, describing the services Contractor shall perform during the Post Warranty period. The bidder shall have stated if he is capable of providing full CLS after warranty period, as specified in SOW of the prospective contract and Book III.

f. PIP Section 6: Test and Evaluation

i. The bidder shall have described in detail his approach to developing test and evaluation documentation.

ii. The Bidder shall have submitted a preliminary version of the Test and Evaluation Plan for FAT, ISAT and SAT for the allocation of personnel and the time line for the Test activities that meets the overall requirements and objectives of SOW Section 10 of the Prospective Contract.

iii. The Bidder shall have submitted as integral part of the testing activities provide a preliminary Security Test and Verification Plan (STVP) that meets the requirements set forth as in SOW Section 5 of the Prospective Contract.

iv. The Bidder shall have provided comprehensive information about the major components, sub-assemblies and assemblies that are expected to undergo partial testing and extensive testing and evaluation prior to FAT, ISAT and SAT.

v. If there are elements of the System that are proposed to be submitted on the basis of a Certificate of Conformity based on prior test and qualification, the Bidder shall also have provided a summary of the particulars and especially the dates of the prior tests and for whom the testing was executed.

vi. The Bidder shall have described how the proposed Certificate of Conformity will be processed from QA and CM aspects.

vii. The Bidder shall have adequately described his proposed methods to ensure the testing in compliance with Contract requirements of components, sub-assemblies and assemblies that are sub-Contracted and tested at sub-Contractor facilities.

g. PIP Section 7: Documentation

i. In this Section, the Bidder shall have provided a preliminary Documentation Plan by WBS to detail the resources allocated and the schedule of work to deliver the documentation required in SOW Section 13 of the Prospective Contract.

ii. In this plan, The Bidder shall have described how he proposes to comply with each of the documentation requirements detailed in SOW Section 13 of the Prospective Contract.

iii. The Bidder shall also have identified the documentation team and the individual responsible within his organisation for ensuring such documentation is delivered on schedule and to the Contract requirements.

h. PIP Section 8: System Acceptance

i. The Bidder shall have provided a preliminary System Acceptance e schedule to accomplish all the activities required and ensure the timely delivery of all documentation and other deliverables required for successful Final Systems Acceptance (FSA) in order to meet the requirements as set forth in SOW Section 11 of the Prospective Contract.

i. PIP Section 9: Training

i. The Bidder shall have submitted a preliminary Training Plan demonstrating that he fully understands the Training requirements set forth in SOW Section 14 of the Prospective Contract detailing the training methodology for training of test personnel, operators, maintainers and system administrators, schedules for the initial training of personnel, the proposed training materials and the proposed delivery schedule of those materials and thoroughly addresses the salient features of such requirements, such as schedule, material, media and content.

ii. The Bidder shall have described his training organisation and demonstrated that adequate staffing in his organisation will be available to train the student population and meet the schedule without impacting on other activities. The Bidder shall have described the medium/media to be utilised in his proposed training method.

iii. The Bidder shall have described his approach regarding how support staff designated by the Site POC will be provided training on all tasks required to operate the system, perform daily maintenance and administration, disaster recovery, and problem isolation. The Bid shall have described the Bidder's approach regarding how this training shall be structured according to the First, Second, and Third-Level support concept.

j. PIP Section 10: Reliability, Availability, Maintainability and Testability

i. The Bidder shall have provided a preliminary Reliability, Availability, Maintainability and Testability (RAMT) plan compliant with the requirements stated in SOW Section 9 of the Prospective Contract.

ii. The Bidder shall have provided calculations that convincingly demonstrating that the proposed BRASS-BGR system design will meet the Reliability, Availability, Maintainability and Testability (RAMT) requirements set forth in the SOW Section 9 of the Prospective Contract. The Bidders shall have provided these calculations based as much as possible on actual data derived from operational experience of fielded systems and components and extrapolations therefrom, and shall have provided a full description of the source data utilised, providing equipment numbers, owners, location and inclusive dates.

iii. The Bidder shall have predicted the MTBF of the system he proposed and justify that the total availability of the system is within the requested values as specified at SOW. The Bidder shall provide calculations that demonstrate that the BRASS- BGR System meets the RAMT requirements of the IFB.

iv. The Bidder shall have provided DLOS Links reliability and availability figures.

k. PIP Section 11: Contractor Logistics Support

i. The Bidder shall have provided a preliminary Contractor Logistic Support (CLS) Plan for the maximum Support Period of the installed BRASS-BGR System describing the roles and responsibilities of the Contractor to meet the requirements for CLS concept, as described in SOW paragraph 8.8 of the Prospective Contract, describing the services the Contractor shall perform during the Warranty period and during all Contracted CLS periods if exercised.

ii. The prospective CLS agreement will be executed by the HN Bulgaria (after FSA) or their representatives not later than the end of the Warranty Period, should the option for CLS be exercised. If exercised, The Prospective CLS agreement shall provide for an additional ten (10) years period when combined with the first one-year warranty. Bidders shall note that the post-warranty CLS agreement is an optional requirement of the Prospective Contract for manufacture and installation of the BRASS BGR and Systems. The Bidder shall demonstrate that he is capable of providing CLS after the Warranty period as specified in the SOW of the prospective Contract and Book III. The Bidder shall provide firm fixed pricing for CLS option CLIN 10.1 ensuring that system reliability, availability, and maintainability requirements, specified in the SOW continue to be met during CLS period.

iii. The bidder shall have signed Book I Annex B-4 to certify that he is fully aware that the acceptance of Contract CO-13733-BRASS-BGR includes the potential responsibilities and obligations to perform CLS for a total of 9 years after the BRASS-BGR Systems warranty period. The Bidder shall have inserted a copy of the signed certificate [Book I Annex-B-4] into his technical proposal

iv. Sub-Contractors: The Bidder shall identify those items (assemblies and subassemblies) that are to be sub-Contracted for repair, refurbishment, and/or modification, or other services to be performed through a sub-Contractor. The Bidder shall also have identified its major proposed sub-Contractors for the CLS Contract. The Bidder shall have demonstrated that firm commitments have been made with such subcontractors The Bidder shall identify the firm, the nation of origin, the major items (assemblies, sub-assemblies) or services that the proposed sub-Contractor will be required to furnish, repair, modify and perform.

v. The Bidder shall have included a letter of intent from the proposed sub-Contractor that details its willingness to enter into a sub-Contract with the Bidder if the CLS Contract would be awarded to the Bidder.

vi. The Bidder shall have demonstrated that the elements of the Bidder's proposed organisation that are proposed to carry out the CLS effort have adequate experience in the maintenance and support of major RF defence systems. The experience described shall have expanded on the Corporate Experience descriptions required by paragraph 3.4.8 above to specifically highlight the Prime Contractor's and subcontractors' Contracted maintenance and supply efforts for a similar size RF defence system over the last five (5) years. The description shall have included the number of systems supported, the purchaser of the support, and point of contact with the purchaser for reference. The description shall have identified any similarities between CLS Contracts previously delivered and the requirements under this IFB.

vii. The Bidder shall have convincingly demonstrated that the proposed Configuration Management procedures will effectively ensure configuration control during the CLS Periods.

l. PIP Section 12: Security Accreditation

i. The Bidder shall have submitted a preliminary Security Accreditation Plan and shall have convincingly demonstrated that the proposed plan will meet the Security requirements set forth in SOW Section 5 of the Prospective Contract.

ii. The Bidder shall have confirmed that he understands and accepts security accreditation documentation review and approval procedures, as defined in the IFB Book II Part III Contract General Provisions, Clause 22.

m. PIP Section 13: Risk Assessment and Management

i. The Bidder shall have provided a preliminary Risk Assessment and Management Plan (RAMP) defining his strategy for risk management to meet the requirements as set forth in SOW paragraph 2.7 of the Prospective Contract. The Bidder shall have demonstrated the adequacy of monitoring and control activities to ensure early detection of problem areas and to schedule risk. The Bidder shall have identified the possible risks involved in the performance of the Contract and shall have convincingly demonstrated that his approach offers adequate, logical and pragmatic means for risk identification, assessment, mitigation, monitoring, and reporting the risks, as well as methods for overcoming setbacks to the project throughout the Contract duration.

n. PIP Section 14: Site Installation and Civil Works

i. The Bidder shall have provided specific and comprehensive information concerning the civil works, Power and site preparation requirements that must be accomplished to properly install and operate the proposed BRASS- BGR systems as set forth in SOW Section 12 and SOW Annex C of the Prospective Contract. The bidder shall have demonstrated his concept and technical solutions including sufficient degree of details i.e. how the power generator daily tanks will be integrated/ interfaced with the main fuel tank or tanks. The Bidder shall also have provided specific and comprehensive information concerning the civil works, power and site preparation requirements necessary to have been completed prior to the installation of the delivered BRASS-BGR Systems.

ii. Requirements such as load bearing capacity of concrete, special structural supports, pilings, platforms, reinforcements, power supply requirements etc, shall have been indicated in order to verify the infrastructure capabilities provided by HN on TX and RX sites site prior to arrival of the equipment for installation. This information shall also have been indicated to quantify the magnitude of total civil works that must be accomplished on ACMS site by the Contractor.

iii. The Bidder shall have adequately specified any characteristics of the BRASS-BGR Systems that may constrain the type of civil works to be performed to prepare the sites. The type of constraints may be of the nature of working and implementation environment, special material requirements or prohibited materials, location of power supplies, location of conduits for cabling, or operating characteristics that require the maintenance of a specialised or customised environment (e.g., minimum distance from high tension lines, specific climate conditions etc). In his proposal, the Bidder shall have demonstrated an appropriate understanding of the user involvement and of required coordination with the user during the development of the implementation. The bidder shall have drawn an appropriate conclusion as to what and how was analysed to identify constrains for civil works and what are the constrains.

iv. The Bidder shall have delivered a preliminary System Installation Transition Plan (SITP) to ensure minimum disruption of provision of national communications services between site preparation and ISAT and to enable NCI Agency to assess the bidder's understanding of the installation requirements in the HN to reduce the risk of Contract cost overrun, and to reduce the risk of lengthy disruption to mission-critical HN communications services. Preliminary SITP shall include but not limited to; a work schedule and task list as well as analysis provided as to how to plan, organize and execute works for system installation that maximises the amount of on-air time and minimized off-air time for HN communications services, until the HN communications services could be supported as part of the BRASS- BGR systems.

v. The Bidder shall have confirmed his understanding and acceptance of the site access requirements as defined in the IFB.

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IFB-CO-13733-BRASS-BGR-AMD2

BOOK I - ANNEX A

A-1: BIDDING SHEETS FILLING INSTRUCTIONS

A-2: BIDDING SHEETS AND CONTRACTOR PRICING SUMMARY

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BOOK I ANNEX A-1

BIDDING SHEETS FILLING INSTRUCTIONS

SECTION 1 INTRODUCTION

1.1 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.

1.2 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.

1.3 Additional price columns may be added if multiple currencies are in bid, including extra provisions for all totals.

SECTION 2 GENERAL REQUIREMENTS

2.1 Bidders shall follow the specific instructions provided in each worksheet.

2.1.1. Bidders shall insert information for Unit Firm Fixed Price and Total Firm Fixed Price.

2.1.2. NSP is used in cases where the CLIN is “Not Separately Priced” (i.e., costs included as part of another CLIN).

2.1.3. All price cells that are highlighted in yellow, need to be filled in as defined above.

2.2 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.

2.3 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.

2.4 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 sites and Contractor facilities located within Europe and 8 hours/day at NATO sites and Contractor facilities located in the United States.

2.5 It is the Bidder’s responsibility to incorporate in the overall quotation any installation costs such as those costs associated with locating and maintaining personnel at the sites of performance including but not limited to costs linked to travel, administrative incumbencies, residence permits, lodging and subsistence.

2.6 Bidders are advised that ‘auto-calculation’ has been inserted in the electronic copies of the Bidding Sheets. However, Bidders are responsible for ensuring that their figures are correctly calculated, and shall not rely on the accuracy of the auto-calculation features configured in the spreadsheets.

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

2.8 Any discounted or reduced prices offered by the Bidder must be traceable to a CLIN or CLINs at the lowest level. Prices and detail of the traceability of application of the discount shall be clearly identified in the supporting detail sheets and applied at the unit price level.

2.9 Should the bid be in other than Euro currency, the award of the Contract will be made in the currency or currencies of the bid.

2.10 Bidders shall identify all significant sub-contractors and shall provide required information about their prospective sub-contractors using the "List of Prospective Sub-Contractors" form attached to this Book I Annex B-13.

SECTION 3 STRUCTURE OF BIDDING SHEETS

3.1 The Bidding Sheets provided in MS Office Excel format are organised according to the following structure:

3.1.1. Cover Page and Instructions

3.1.2. Section 1. CLIN Summary sheet

3.1.3. Section 2. Detailed Bidding sheets (CLINs 1-10)

SECTION 4 COMPLETING BIDDING SHEETS SECTION 1

4.1 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 Item Numbers (CLINs) included within the scope of the WP (Detailed bidding sheet tabs) and a detailed cost breakdown attached to each WP schedule.

4.2 Filling the CLIN Summary Sheet

4.2.1. Bidders shall fill in the CLIN summary sheet based on the information provided in the detailed bidding sheets (CLIN Price Breakdown sheets). The detailed bidding sheets are broken down in to the categories listed in Section 5 of these instructions. 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.

4.2.2. Bidders shall make sure that they comply with the delivery dates identified on the CLIN Summary sheet.

SECTION 5 . COMPLETING BIDDING SHEETS SECTION 2

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

5.2 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 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.

5.3 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.

5.4 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.

5.5 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.

5.6 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 basis for pricing.

SECTION 6 GRAND TOTAL

6.1 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.

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Book I Annex A-2 BIDDING SHEETS

[Provided under separate MS Excel File:

"IFB-CO-13733-BRASS-BGR_Bidding-sheets.xls"]

On behalf of the firm stated below I hereby offer the Purchaser the services and deliverables (collectively referred as "ITEMS") set forth in the attached schedules[2], at the specified prices, and subject to the terms and conditions stated in IFB-CO-13733-BRASS-BGR.

Date : .....

Signature : .....

Name & Title : .....

Company : .....

Bid Reference : .....

[2] Bidders must fill out, print, and attach to this cover page a hardcopy of the worksheets contained in the file "IFB-CO-13733-BRASS-BGR_Bidding-sheets.xls" that was submitted to them as part of the IFB package.

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INVITATION FOR BID

IFB-CO-13733-BRASS-BGR-AMD2

BOOK I

ANNEX B

REQUIRED CERTIFICATIONS

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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: _____

_____

_____

TEL NO: _____

FAX NO: _____

BOA NO. (IF ANY) _____

POINT OF CONTACT (POC) REGARDING THIS BID:

NAME: _____

POSITION: _____

TELEPHONE: _____

E-MAIL ADDRESS: _____

ALTERNATIVE POINT OF CONTACT:

NAME: _____

POSITION: _____

TELEPHONE: _____

E-MAIL ADDRESS: _____

_____ _____

Date Signature of Authorised Representative

_____

Printed Name

_____

Title

_____

Company

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ANNEX B-2
CERTIFICATE OF INDEPENDENT DETERMINATION

Each Bidder shall certify that in connection with this procurement:

a. This 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 this 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.

Each person signing this Bid shall also certify that:

(1) He is the person in the Bidder's organisation responsible within that organisation for the decision as to the Bid and that he has not participated and will not participate in any action contrary to a. through c. above, or

(2) (i) He is not the person in the Bidder's organisation responsible within that organisation for the Bid but that he has been authorised in writing to act as agent for the persons responsible for such a decision in certifying that such persons have not participated, and will not participate in any action contrary to a. through c. above, and as their agent does hereby so certify, and

(ii) He has not participated and will not participate in any action contrary to a. through c. above.

Date	Signature of Authorised Representative
	Printed Name
	Title
	Company

NOTE: IF THE BIDDER DELETES OR MODIFIES SUBPARAGRAPH (B) OF THIS ANNEX, THE BIDDER MUST FURNISH WITH ITS OFFER A SIGNED STATEMENT SETTING FORTH IN DETAIL THE CIRCUMSTANCES OF THE DISCLOSURE.

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ANNEX B-3
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 the offer in response to IFB-CO-13733-BRASS-BGR will remain valid for twelwe (12) months following the Bid Closing Date

Date	Signature of Authorised Representative
	Printed Name
	Title
	Company

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ANNEX B-4
CERTIFICATE OF UNDERSTANDING

I certify that

.....
.....

(*Company name*) has read and fully understands the requirements of this Invitation for Bid (IFB-CO-13733-BRASS-BGR) and that the Bid recognises these requirements in total, including the potential responsibilities and obligations to perform Contractor Logistics Support (CLS) for a total of 9 years after the end of Contract warranty period.

I also certify to the best of my expert knowledge that this Bid is within the "state of art" boundaries as they exist at the time of bidding for this project.

Date	Signature of Authorised Representative
	Printed Name
	Title
	Company

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ANNEX B-5
CERTIFICATE OF EXCLUSION OF TAXES AND CHARGES

I hereby certify that the prices offered in the price quotation of this Bid in response to IFB-CO-13733-BRASS-BGR exclude all taxes (including VAT), duties and customs charges from which the Purchaser has been exempted by international agreement.

Date	Signature of Authorised Representative
	Printed Name
	Title
	Company

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ANNEX B-6
CERTIFICATE OF SECURITY OBLIGATION

PROSPECTIVE CONTRACT NUMBER CO-13733-BRASS-BGR

DURATION OF PROSPECTIVE CONTRACT: _____

This is to certify that I:

FULL NAME: _____

MILITARY RANK AND NUMBER (where applicable): _____

DATE/PLACE OF BIRTH: _____

NATIONALITY: _____

WHERE EMPLOYED: `_____

PASSPORT/IDENTITY CARD NUMBER: _____

ISSUED AT: _____ DATED: _____

Have been fully briefed on NATO security procedures relating to the handling, storage and dissemination of NATO RESTRICTED information. In addition, I fully acknowledge my personal security responsibilities and obligations and the consequences that the law or administrative or executive order of my nation provides when classified information passes into unauthorized hands, whether by intent or through personal negligence.

Considering the above, we hereby request an Electronic Soft Copy (on CD ROM) of Book II Part IV SOW Annex C. We hereby confirm that our company shall safeguard such documents in accordance with NATO Security Regulations. Book II Part IV SOW Annex C shall be posted to the following address: _____ .

SIGNED: _____ DATE: _____

_____ _____
Date Signature of Authorised Representative

_____
Printed Name

_____
Title

_____
Company

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ANNEX B-7
CERTIFICATE OF AQAP 2110 OR ISO 9001 COMPLIANCE

I hereby certify that Company ..... possesses and applies Quality Assurance Procedures/Plans that are equivalent to AQAP 2110 or ISO 9001:2000 as evidenced through the attached documentation.

A copy of the quality certification is attached herewith.

Date	Signature of Authorised Representative
	Printed Name
	Title
	Company

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ANNEX B-8
DISCLOSURE OF REQUIREMENTS FOR THE NCI AGENCY EXECUTION OF SUPPLEMENTAL AGREEMENTS

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

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

2. These supplemental agreements if applicable for this IFB listed as follows:
[*list if any*]

3. 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, see _____. 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.

4. 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), see _____.

5. 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.

6 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

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ANNEX B-9
ACKNOWLEDGMENT OF RECEIPT OF AMENDMENTS TO THE IFB

I confirm that the following amendments to the Invitation for Bid No IFB CO-13733-BRASS-BGR have been received and the Bid as submitted reflects the content of such amendments:

AMENDMENT NO.	DATE OF ISSUE BY THE PURCHASER	DATE OF RECEIPT BY THE BIDDER

Date

Signature of Authorised Representative

Printed Name

Title

Company

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ANNEX B-10
CERTIFICATION OF NATO MEMBER COUNTRY ORIGIN OF DELIVERED EQUIPMENT, SERVICES, MATERIALS AND INTELLECTUAL PROPERTY RIGHTS

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 eligible NATO Participating 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 an eligible NATO Participating Country. (A sub-assembly is defined as a portion of an Assembly consisting of two or more parts that can be provided and replaced as an entity)*; and

(c) The intellectual property rights to all design documentation and related system operating software shall reside in NATO on behalf of the Host Nation Bulgaria, and no license fees or royalty charges shall be paid by the Contractor to firms, individuals or governments other than within the eligible NATO Participating Countries.

Date	Signature of Authorised Representative
	Printed Name
	Title
	Company

*This definition purposely excludes Components and/or Parts (as defined in AcodP-1) that are not subject to this certification.

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ANNEX B-11

CERTIFICATION ON SECURITY CLEARANCE

The Bidder hereby certifies that the proposed personnel have the required Security Clearance or that all necessary actions have been undertaken to insure that the proposed personnel will be in possession of such Security Clearance at the time of Contract award. The Bidder also acknowledges that this requirement applies also to all personnel involved in this project as a result of subcontracts issued by the Contractor for effort under the prime Contract.

The Bidder hereby certifies that he is fully aware that resulting Contract will require the Contractor to handle, process and store classified material to the level of “NATO SECRET”, and that the Contractor shall have “NATO SECRET” Facility clearances for those sites in which it intends to handle and store such material, at the time of Contract award.

Date	Signature of Authorised Representative
	Printed Name
	Title
	Company

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ANNEX B-12
LIST OF PROPOSED KEY PERSONNEL

Position	Name	Level of Clearance	Certifying Authority	Dates of Validity*	Expected date of release of required Security Clearance**, or Expected date of Validity extension***
Project Manager					
Deputy Project Manager					
Technical Lead					
Others					
…					

*The proposed personnel shall be in possession of required Security Clearance at the time of Contract award and for the entire Contract duration.

**If not in possession at the time of Bid submission.

***In case the certification expires throughout the planned Contract duration.

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ANNEX B-13
LIST OF PROSPECTIVE SUB-CONTRACTORS

Name and Address of Sub-Contractor, its country of origin/registration	Primary Location of Work	Items/Services to be Provided	Estimated Amount of Sub-Contract*

*Shall be traceable in the Bidding Sheets of the Bid.

If no sub-Contractors are involved, state this here:

……..

……..……
……..

……..

……..... …….....

Date Signature of Authorised Representative

…….....

Printed Name and Title

…….....

Company

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ANNEX B-14
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 Clauses 29 and 30 of NCI Agency Contract General Provisions and Articles 25 and 26 of the Contract Special Provisions.

…..... …..

Date Signature of Authorised Representative

…..

Printed Name and Title

…..

Company

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ANNEX B-15
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 specified in Clauses 29 and 30 of NCI Agency Contract General Provisions and Articles 25 and 26 of the Contract Special Provisions.

…..... …..

Date Signature of Authorised Representative

…..

Printed Name and Title

…..

Company

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INVITATION FOR BID

IFB-CO-13733-BRASS-BGR-AMD2

BOOK I

ANNEX C

TECHNICAL PROPOSAL CROSS REFERENCE TABLE

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BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.7 – Section 1: Corporate Organisation/Capital Facilities 3.4.7.a This section shall describe the Corporate Structure and organization of the Prime Contractor and the administration of the prospective BRASS-BGR Systems Contract within the overall corporate structure. This section shall indicate the chain of authority within the Prime Contractor's organisation from the Project Manager to the Chief Executive Officer.	Paragraph 4.4.7 Section 1: Corporate Organisation/Capital Facilities 4.4.7.a. The Bidder shall have proposed a Corporate Structure and organization of the Prime Contractor and the administration demonstrating that the BRASS-BGR Systems Contract has high visibility within the overall corporate organisation. This section shall have indicated the chain of authority within the Prime Contractor's organisation from the Project Manager to the Chief Executive Officer. The Corporate Structure described shall have adequate depth of resources with the overall corporate organisation to ensure a reserve capability in order to successfully perform the Contract.	
Paragraph 3.4.7 – Section 1: Corporate Organisation/Capital Facilities 3.4.7.b The Bidder shall describe the corporate resources (with posts or names) that are available to support the BRASS-BGR Systems Contract that are resident in the organisation of the Prime Contractor but not directly under the authority of the Project Manager.	Paragraph 4.4.7 Section 1: Corporate Organisation/Capital Facilities 4.4.7.b. The Corporate Structure described shall have demonstrated that the Project Manager has sufficient authority and priority within the organisation to access in timely manner corporate resources that are not directly under his control as Project Manager.	
Paragraph 3.4.7 – Section 1: Corporate Organisation/Capital Facilities 3.4.7.c The Bidder shall describe the process by which the Project Manager may have access to these "in-house" corporate resources and what level of authority is required in the Corporation hierarchy to secure the needed resources.	Paragraph 4.4.7 Section 1: Corporate Organisation/Capital Facilities 4.4.7.c. The Bidder shall have described the process by which the Project Manager may have access to these "in-house" corporate resources and what level of authority is required in the Corporation hierarchy to secure the needed resources.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.7 – Section 1: Corporate Organisation/Capital Facilities 3.4.7.d The Bidder shall provide evidence that the Proposed Project Manager and the Deputy Project Manager are experienced senior personnel with demonstrated capability in managing an acquisition programme of this magnitude. The positions shall have sufficient inherent authority and visibility in the overall corporate structure to properly execute the decisions that will be required to be made in the successful implementation of a project of this size and complexity.	Paragraph 4.4.7. Section 1: Corporate Organisation/Capital Facilities 4.4.7.d. The Bidder shall have provided the comprehensive Curriculum Vitae (CV) for the Project Manager proposed for this project and also the Deputy Project Manager. The Bidder shall have provided a narrative describing the rationale for the selection of these individuals for these posts and have provided detailed descriptions of the experience of the individuals in managing procurement programmes of this magnitude. This section shall have described the authority and responsibility (and the limits) of the Project Manager and the Deputy Project Manager within the overall corporate organisation. The narrative shall have described the circumstances at which the Project Manager must refer decision-making authority to the next level of corporate management.	
Paragraph 3.4.7 – Section 1: Corporate Organisation/Capital Facilities 3.4.7.e The Bidder shall describe the responsibilities of its Project Management Office (PMO) and describe the associated staffing and resources.	Paragraph 4.4.7. Section 1: Corporate Organisation/Capital Facilities 4.4.7.e. The Bidder shall have described the responsibilities of its Project Management Office (PMO) and described the associated staffing and resources. The description of the staffing and resources shall have covered everything needed 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.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.7 – Section 1: Corporate Organisation/Capital Facilities 3.4.7.f The Bidder shall identify his major proposed prospective sub-Contractors for the BRASS and Systems, in compliance with Book I Annex B-13. The Bidder shall also submit a detailed and thorough subcontracting plan that identifies subcontractors/sub-vendors and their areas of responsibility/delivery. The plan shall also demonstrate that the prospective sub-contractor(s) will agree to abide by the requirements of the prime contract.	Paragraph 4.4.7. Section 1: Corporate Organisation/Capital Facilities 4.4.7.f. The Bidder shall have identified his major proposed prospective sub-Contractors for the BRASS-BGR Systems, as stated in Book I Annex-B-13. The Bidder shall have also submitted a detailed and thorough sub-Contracting plan that identifies major subcontractors/sub-vendors and their areas of responsibility/delivery. The plan shall have agreed with the Project Control Plan, in that delivery of sub-Contracted items and assemblies, critical components is identified. The plan shall have demonstrated that the Bidder can effectively manage, monitor and control the proposed sub-Contractors and that the sub-Contractors will agree to abide by the requirements of the prime Contract as pertains to flow-down provisions. Such a declaration of sub-contractors to abide by the requirements of the prime contract shall have been available in the Bidder's proposal.	
Paragraph 3.4.7 – Section 1: Corporate Organisation/Capital Facilities 3.4.7.g Major proposed sub-Contractors, for purposes of this sub-section, shall refer to the criteria set forth in the General Provision of the Prospective Contract entitled "Sub-Contracts". .	Paragraph 4.4.7. Section 1: Corporate Organisation/Capital Facilities 4.4.7.g. Major proposed sub-contractors, for purposes of this sub-section, shall have referred to the criteria set forth in the General Provision of the Prospective Contract entitled "Sub-Contracts". The Bidder shall have identified 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.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.7 – Section 1: Corporate Organisation/Capital Facilities 3.4.7.h The Bidder shall include a draft copy of the proposed sub-Contract and a summary of the supplies and or/services to be furnished by the prospective sub-contractor. The Bidder shall include a letter of intent from the proposed sub-Contractor that details its willingness to enter into a sub-Contract with the Bidder if the Bidder shall receive award of the BRASS-BGR Systems Contract.	Paragraph 4.4.7. Section 1: Corporate Organisation/Capital Facilities 4.4.7.h. The Bidder shall have included a draft copy of the proposed sub-contract, as applicable. The Bidder shall have included a letter of intent from the proposed sub-contractor that details its willingness to enter into a sub-contract with the Bidder if the Bidder shall receive award of the BRASS-BGR Systems Contract and a summary of the supplies and/or services to be furnished by the prospective sub-contractor.	
Paragraph 3.4.7 – Section 1: Corporate Organisation/Capital Facilities 3.4.7.i With regard to major sub-contracts, the Bidder shall identify those items that are sub-contracted (assemblies and sub-assemblies) and that are considered to be on the "Critical Path" to meeting the delivery schedule of the Contract.	Paragraph 4.4.7. Section 1: Corporate Organisation/Capital Facilities 4.4.7.i. With regard to major sub-Contracts, the Bidder shall have identified those items that are sub-Contracted (assemblies and sub-assemblies) and that are considered to be on the "Critical Path" to meeting the delivery schedule of the Contract.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.7 – Section 1: Corporate Organisation/Capital Facilities 3.4.7.j For these sub-contracted items, the Bidder shall provide a rationale for the selection of the sub-contracted vendor, and an analysis of the vendor. 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.	Paragraph 4.4.7. Section 1: Corporate Organisation/Capital Facilities 4.4.7.j. The Bidder shall have provided a description of the parts of the project that he intends to sub-contract and demonstrate that the chosen subcontractors have adequate assets and capacity to fulfil their role to that they have been allocated. The Bidder shall have demonstrated that such subcontracted facilities and assets are available to meet the anticipated schedule, and have provided sufficient alternative arrangements in case of the failure to deliver of critical sub-contracted items.	
Paragraph 3.4.7 – Section 1: Corporate Organisation/Capital Facilities 3.4.7.k The Bidder shall provide a sub-section that identifies the items (assemblies, sub-assemblies) and services that are to be fabricated and/or performed by the Corporate resources of the Prime Contractor.	Paragraph 4.4.7. Section 1: Corporate Organisation/Capital Facilities 4.4.7.k. The Bidder shall have provided a sub-section that identifies the items (assemblies, sub-assemblies) and services that are to be fabricated and/or performed by the Corporate resources of the Prime Contractor.	
Paragraph 3.4.7 – Section 1: Corporate Organisation/Capital Facilities 3.4.7.l The Bidder shall identify the location of the production facilities that will be utilized, and/or the source within the corporate organisation of the services and expertise required.	Paragraph 4.4.7 – Section 1: Corporate Organisation/Capital Facilities 4.4.7.l The Bidder shall have identified the location of the production facilities that will be utilized, and/or the source within the corporate organisation of the services and expertise required. For corporate production facilities, the Bidder shall have provide analytical evidence that adequate capacity exists in order that the required items may be made within the time schedule of the Prospective Contract.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.7 – Section 1: Corporate Organisation/Capital Facilities 3.4.7.m The Bidder shall show existing capital assets and provide a detailed proposal of what additional equipment or facilities will be acquired or constructed in order to meet the Contract schedule.	Paragraph 4.4.7 – Section 1: Corporate Organisation/Capital Facilities 4.4.7.m The Bidder shall have demonstrated existing capital assets and provide a detailed proposal of what additional equipment or facilities will be acquired or constructed in order to meet the Contract schedule.	
Paragraph 3.4.7 – Section 1: Corporate Organisation/Capital Facilities 3.4.7.n The Bidder shall further provide a description of any retooling efforts required and a time forecast of when these efforts can be completed.	Paragraph 4.4.7 – Section 1: Corporate Organisation/Capital Facilities 4.4.7.n The Bidder shall further have provided a description of any retooling efforts required and a time forecast of when these efforts can be completed.	
Paragraph 3.4.7 – Section 1: Corporate Organisation/Capital Facilities 3.4.7.o The Bidder shall describe the distribution, warehousing, or order-processing capabilities the Bidder has that enables it to provide efficient and prompt delivery of hardware in satisfaction of short-notice or unpredictable customer orders.	Paragraph 4.4.7 – Section 1: Corporate Organisation/Capital Facilities 4.4.7.o The Bidder shall have described the distribution, warehousing, or order-processing capabilities the Bidder has that enables it to provide efficient and prompt delivery of hardware in satisfaction of short-notice or unpredictable customer orders. The description shall have provided sufficient evidence to confirm that the Bidder will be able to meet the timelines and other shipment and task requirements of the SOW.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.8 – Section 2: Corporate Experience 3.4.8.a The Bidder shall in this section detail his experience in the design, development, fabrication, installation, maintenance and support of Defence Radio Frequency (RF) Systems. Specifically, the Bidder shall describe: i. the experience of the Bidder over the last five (5) years in the design, manufacture and installation of RF defence systems in general,	Paragraph 4.4.8 Section 2: Corporate Experience 4.4.8.a. The Bidder shall have been an established electronics manufacturer and systems integrator having substantial experience in the last five (5) years in the design, manufacturing, installation, maintenance and support of RF defence systems. i. The Bidder shall have demonstrated that he has delivered within the last five (5) years, or is under Contract to deliver, RF Defence Systems. Alternatively, the Bid shall be based on an existing design that has been operationally tested and the test results certified by national authorities. The design need not be identical to the requirements of this Contract but must be of sufficient similarity that cardinal modifications to the basic design will not have to be undertaken, thus increasing the confidence of the Bidder's ability to deliver within schedule.	
Paragraph 3.4.8 – Section 2: Corporate Experience 3.4.8.a.ii The Bidder shall describe the experience of the Bidder over the last five (5) years in the maintenance and support of similarly sized Defence Radio Frequency Systems.	Paragraph 4.4.8 Section 2: Corporate Experience 4.4.8.a.ii The Bidder shall have demonstrated the experience over the last five (5) years in the maintenance and support of similarly sized Defence Radio Frequency Systems.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.8 – Section 2: Corporate Experience 3.4.8.a.iii The Bidder shall document that it has delivered an RF defence system as offered in its proposal that has been delivered and accepted within the last five (5) years, or that the Bidder is currently under Contract to deliver such system.	Paragraph 4.4.8 Section 2: Corporate Experience 4.4.8.a.iii The Bidder shall have documented that it has delivered an RF defence system as offered in its proposal and gained acceptance in the last five (5) years, or be currently under contract to deliver such system in an operational capacity. In this sense, “operational capacity” shall not include a current research and development contract or a contract for prototype system(s) but a system to be used and operated as part of a National and/or NATO communications system.	
Paragraph 3.4.8 – Section 2: Corporate Experience 3.4.8.b The Bidder shall demonstrate that its sub-contracted source(s) for critical items have the same level of experience for their respective areas of expertise as is required of the Prime Contractor. Corporate experience encompasses sub-contractors.	Paragraph 4.4.8 Section 2: Corporate Experience 4.4.8.b. The Bidder shall have provided the same information required above for the major sub-contractors for critical assemblies and subassemblies. The sub-contractors need not be manufacturers of the Radio Frequency Systems as a whole, but must demonstrate the level of experience for which they are proposed to deliver or services for which they are proposed to perform.	
Paragraph 3.4.8 – Section 2: Corporate Experience 3.4.8.c The Bidder shall describe its experience and expertise in providing warranty support and repair-and-replacement service for similar Defence Radio Frequency systems for large, geographically-dispersed organisations.	Paragraph 4.4.8. Section 2: Corporate Experience 4.4.8.c. The Bidder shall have described its experience and expertise in providing warranty support and repair-and-replacement service for similar Defence Radio Frequency systems for large, geographically-dispersed organisations. The bidder shall have proofed his experience and expertise for warranty support and repair and replacement service with required documentation.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.8 – Section 2: Corporate Experience 3.4.8.d. The bidder shall confirm his and his subcontractor's experience in providing the implementation + CLS + Warranty demonstrating examples of work performed for either other NATO or National Contracts.	Paragraph 4.4.8. Section 2: Corporate Experience 4.4.8.d. The bidder shall have confirmed his and his subcontractor's experience in providing Implementation + CLS + warranty in demonstrating examples of work performed for either other NATO or National Contracts.	
Paragraph 3.4.8 – Section 2: Corporate Experience 3.4.8.e. Individual skill and experience: The Bidder shall provide resumes of the proposed individuals to perform the technical tasks under the proposed Work Packages and the resumes of the individuals designated as Key Personnel in Annex B-12.	Paragraph 4.4.8. Section 2: Corporate Experience 4.4.8.e Individual skill and experience: The Bidder shall have provided resumes of the proposed individuals to perform the technical tasks under the proposed Work Packages and the resumes of the individuals designated as Key Personnel in Annex B-12. For each role identified, the resumes shall have demonstrated that they have the expected knowledge, capability and experience to meet the requirements of this Contract.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) Bidders shall demonstrate that the Preliminary PIP provide detailed descriptions of how the proposed design will meet each of the specific requirements of the IFB.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) Bidders shall have demonstrated that the Preliminary PIP provide detailed descriptions of how the proposed design will meet each of the specific requirements of the IFB. The preliminary PIP document shall have met the requirements detailed paragraphs of Book I from 3.4.9 a through n as well as from 4.4.9.a through n.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.a. PIP Section 1: Project Management and Control Plan (PMCB) 3.4.9.a.iThe Bidder shall develop a preliminary Project Management and Control Plan (PMCP) in accordance with Statement of Work (SOW) paragraph 2.3.2 of the Prospective Contract. This plan shall identify the significant tasks required to be accomplished and the items to be delivered in the execution of the contract. The Plan will centre on a preliminary Project Work Breakdown Structure (PWBS) and supporting charts in accordance with SOW paragraph 2.3.2 (c) of the Prospective Contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.a. PIP Section 1: Project Management and Control Plan (PMCB) 4.4.9.a iThe Bidder shall have submitted a preliminary Project Management and Control Plan (PMCP) that conforms with the requirements of SOW paragraph 2.3.2 of the Prospective Contract. This plan shall have identified the significant tasks required to be accomplished and the items to be delivered in the execution of the Contract. The preliminary Project Work Breakdown Structure (PWBS), the preliminary Project Master Schedule (PMS) and supporting charts shall have thoroughly described the steps necessary to achieve delivery of the BRASS-BGR Systems within the Contract terms and schedule. The preliminary PMCP shall have been logical and realistic, demonstrating the Bidder's appreciation of the complexity of the Project and his experience in managing large programmes.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.a. PIP Section 1: Project Management and Control Plan (PMCB) 3.4.9.a.ii The Contractor shall also develop a preliminary Project Master Schedule (PMS) in accordance with SOW paragraph 2.3.2 (f) of the Prospective Contract, that shall contain all contract events and milestones.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.a. PIP Section 1: Project Management and Control 4.4.9.a ii The Contractor shall also have developed a preliminary Project Master Schedule (PMS) in accordance with SOW paragraph 2.3.2 (f) of the Prospective Contract that shall contain all Contract events and milestones. The PMS shall have correlated with the PWBS. The PMS shall have included activity network, activity GANTT / Program Evaluation Review Technique (PERT) charts, milestone, and critical path views of the project schedule, showing detailed and high level schedules with associated resources. This Plan shall have been detailed to the level at which all deliverable items required under the Contract are identified and accounted for by a work path that shows the interconnectivity of the various task.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.a. PIP Section 1: Project Management and Control Plan (PMCB) 3.4.9.a.iii The Bidder shall demonstrate the realism of approach to accomplish the work within the time schedule defined in the IFB.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.a. PIP Section 1: Project Management and Control 4.4.9.a iii The Bidder shall have demonstrated the realism of approach to accomplish the work within the time schedule defined in the IFB. The Bidder shall have submitted a PMCP compliant with BOOK II Part I Section 2 and the Gantt/PERT diagrams, set forth in BOOK II Part I Section 2.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.a. PIP Section 1: Project Management and Control Plan (PMCB) 3.4.9.a.iv In PMS, the relationship between the Work Packages and project deliverables shall be clearly demonstrated as well as the schedule of sub-contracted performance.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.a. PIP Section 1: Project Management and Control 4.4.9.a iv In PMS, the relationship between the Work Packages and project deliverables shall have been clearly demonstrated as well as the schedule of sub-Contracted performance and deliveries shall have been clearly integrated into this Plan.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.a. PIP Section 1: Project Management and Control Plan (PMCB) 3.4.9.a.v This preliminary PMCP shall also consider all aspects of project management and control and shall demonstrate how all the critical milestones defined in the BOOK II Part I Section 2 will be met.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.a. PIP Section 1: Project Management and Control 4.4.9.a v This preliminary PMCP shall also have considered all aspects of project management and control and shall have demonstrated how all the critical milestones defined in the BOOK II Part I Section 2 will be met.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.a. PIP Section 1: Project Management and Control Plan (PMCB) 3.4.9.a.vi The Bidder shall not alter or amend the dates for Milestones (BOOK II Part I Section 2).	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.a. PIP Section 1: Project Management and Control 4.4.9.a vi The Bidder shall have not altered or amended the dates for Milestones (BOOK II Part I Section 2). These dates shall have been incorporated into the resultant Contract of the successful Bidder.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.a. PIP Section 1: Project Management and Control 3.4.9.a.vii The Bidder shall demonstrate the realism of approach to accomplish the work within the time schedule defined in the IFB. The dates set forth in BOOK II Part I Section 2 shall be fully supported and coherent by/with the Gantt/PERT diagrams as well as the PWBS.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.a. PIP Section 1: Project Management and Control 4.4.9.a vii The Bidder shall have demonstrated the realism of approach to accomplish the work within the time schedule defined in the IFB The dates set forth in BOOK II Part I Section 2 shall have been fully supported and coherent by/with the Gantt/PERT diagrams as well as the PWBS. Separately, Bidders may propose earlier delivery dates than those stated in BOOK II Part I Section 2. Where dates offered are earlier than those set forth in the Prospective Contract, the Purchaser may, at its discretion, accept such dates and the alternative Milestone Schedule will be inserted in the resultant contract.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.a. PIP Section 1: Project Management and Control 3.4.9.a.viii The Bidder shall demonstrate that he has taken into account the constraints of the implementation environment and reflect this understanding in his draft preliminary Project Management and Control Plan.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.a. PIP Section 1: Project Management and Control 4.4.9.a viii The Bidder shall have demonstrated that he has taken into account the constraints of the implementation environment and reflected this understanding in his Draft preliminary Project Management and Control Plan.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.iIn this Section, the Bidder shall submit a preliminary System Engineering and Design including a preliminary System Safety Engineering Plan and a preliminary Electromagnetic Interference and Compatibility (EMI/EMC) Control Plan as sub plans describing the preliminary design of the proposed System.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b iThe Bidder shall have submitted a Preliminary System Engineering and Design Plan, describing the preliminary design of the proposed System and including a preliminary System Safety Engineering Plan and a preliminary Electromagnetic Interference and Compatibility (EMI/EMC) Control Plan as sub-plans that conform with the requirements of SOW Section 4 of the Prospective Contract.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.ii The Bidder shall support his design with such information as to convincingly demonstrate that the proposed design will meet the safety and security requirements as set forth in SOW Section 4 and Section 5 of the Prospective Contract as well as functional and technical requirements as set forth in SOW Annex A, Annex-B and Annex-D of the Prospective Contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b ii The Bidder shall have supported this design with such information as to convincingly demonstrate that the proposed design will meet the safety and security requirements as set forth in SOW Section 4 and Section 5 of the Prospective Contract as well as functional and technical requirements as set forth in SOW Annex A, Annex-B and Annex-D of the Prospective Contract. Bidder's technical proposed design shall have provided detailed information on how the Bidder intends to meet performance, functional or architectural requirements defined in the IFB. **Failure to provide detailed technical information any of the bidding requirements or omission of the critical information may result in a determination of non-compliance for the entire Bid**.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.iii The Preliminary System Engineering and Design Plans shall provide detailed descriptions of how the proposed designs of both projects shall meet each of the specific performance requirements/parameters.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b iii The Preliminary System Engineering and Design Plans shall have provided detailed descriptions of how the proposed designs of both projects shall have met each of the specific performance requirements/parameters of the areas detailed at SOW paragraph 4.2 of the Prospective Contract.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.iv The bidders shall take into account the constraints of the site and number of simultaneous transmissions, as well EMC, in his technical proposal..	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b iv The bidders shall have taken into account the constraints of the site and number of simultaneous transmissions, as well EMC, in his technical proposal. An EMC study of the transmitter site shall have been submitted as part of the bid to show that Public and Occupational exposure levels are within international and national guidelines.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.v The Preliminary System Engineering and Design Plan demonstrate that the system as delivered will meet the safety and security requirements.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b v The Preliminary System Engineering and Design Plan shall have contained as much detail as is practicable in order to demonstrate that the system as delivered will meet the safety and security requirements as set forth in SOW Section 4 and SOW Section 5 of the Prospective Contract as well as functional and technical requirements as set forth in SOW Annex A, Annex-B and Annex-D of the Prospective Contract.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.vi The Bidder shall describe the Bidder's approach to preparing and maintaining the Engineering Documentation Package.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b vi The Bidder shall have described the Bidder's approach to preparing and maintaining the Engineering Documentation Package throughout the design, integration, test and site surveys activities, ensuring consistency between all the documents included in that documentation package.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.vii The Bidder shall provide equipment specification for each capability separately.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b vii Equipment specification: For each capability separately; • For each Hardware Contract Line Item Number (CLIN); the Bidder shall have included in his bid a detailed list of the COTS components proposed to be supplied as part of that CLIN. The product name, manufacturer name, and manufacturer's part number, version, or release number shall have been stated. If a generic or non-vendor specific component is proposed, the Bidder shall have provided the item name. • The Bidder shall have included in his bid a detailed specification sheet for each item of equipment the Bidder proposes to provide in satisfaction of contractual requirements.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.viii The Bidder shall furnish drawings, diagrams and specifications.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b viii The Bidder shall have furnished drawings, diagrams and specifications. If the proposed BRASS-Systems are based on a design that has been tested and the results certified by a national authority, the test performance data shall also have been provided and data projections included for elements that were not tested.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.ix The Bidder shall provide predicted performance characteristics and specifications based on engineering analysis and/or extrapolations from previous data.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b ix The Bidder shall have provided predicted performance characteristics and specifications based on engineering analysis and/or extrapolations from previous data.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.x Bidder's technical proposed designs for BRASS system shall provide detailed information on how the Bidder intends to meet performance, functional or architectural requirements defined in the SOW and it's all Annexes. Failure to provide detailed technical information any of the bidding requirements or omission of the critical information may result in a determination of non-compliance for the entire Bid.	Paragraph 4.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b.x Bidder's technical proposed designs for BRASS system shall have provided detailed information on how the Bidder intends to meet performance, functional or architectural requirements defined in the SOW and it's all Annexes. Failure to provide detailed technical information any of the bidding requirements or omission of the critical information may result in a determination of non-compliance for the entire Bid.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.xi Bidder shall provide assurance that they understand both the requirements on the isolator functionality and viable methods for attaining accreditation for their solution in accordance with SOW Section 5 and SOW Annex-A Section 6. Failure to provide detailed technical information of these sensitive bidding requirements or omission of any critical information may result in a determination of non-compliance for the entire Bid.	Paragraph 4.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b.xi Bidder shall have provided assurance that they understand both the requirements stated on the isolator functionality and viable methods for attaining accreditation for their solution in accordance with SOW Section 5 and SOW Annex-A Section 6. Failure to provide detailed technical information of these sensitive bidding requirements or omission of any critical information may result in a determination of non-compliance for the entire Bid.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.xii The Bidder shall agree to abide by and implement the security mechanism as defined in the NATO Security Policy and supporting directives as per the Section 5 of the SOW	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b xii The Bidder shall have agreed to abide by and implement the security mechanism as defined in the NATO Security Policy and supporting directives as per the Section 5 of the SOW	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.xiii The Bidder shall propose automated tools to process classified data and information, that shall meet the respective performance and security requirements as stated at Section 5 of the SOW.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b xiii The Bidder shall have proposed automated tools to process classified data and information, that shall meet the respective performance and security requirements. as stated at Section 5 of the SOW.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.xiv This Section (security related) shall be submitted as a self-contained volume or volumes of the Technical Proposal and shall be segregated from the other materials insofar as the nature of the responses will be subject to Security Classification	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b xiv This Section related to security shall have been submitted as a self-contained volume or volumes of the Technical Proposal and shall have been segregated from the other materials insofar as the nature of the responses will be subject to Security Classification.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.xv The Bidder shall demonstrate and confirm that the hardware to be procured in accordance with this IFB meets the hardware specifications as defined in SOW Annex-A and Annex-D.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b xv The Bidder shall have demonstrated and confirmed that the hardware to be procured in accordance with this IFB meets the hardware specifications as defined in SOW Annex-A and Annex-D.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.xvi The Bidder shall describe the Bidder's Risk Assessment including proposing any appropriate change requests against the Functional Baseline.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b xvi The Bidder shall have described the Bidder's Risk Assessment including proposing any appropriate change requests against the Functional Baseline.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b.xvii The Bidder shall provide a detailed plan for the antenna farms of the Transmit and Receive sites containing the location and physical arrangement of , but not limited to, antenna locations, ground planes (where applicable), and transmission cable layouts represented at a suitable scale on a site layout plan.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b xvii The Bidder shall have provided a detailed plan for the antenna farms of the Transmit and Receive sites containing the location and physical arrangement of , but not limited to, antenna locations, ground planes (where applicable), and transmission cable layouts represented at a suitable scale on a site layout plan.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.b. PIP Section 2: System Engineering and Design 3.4.9.b. xviii The Bidder shall provide a matrix with a justified calculation of expected worst-case antenna isolation values between all antenna port pairs, when measured at the antenna matrix output.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.b. PIP Section 2: System Engineering and Design 4.4.9.b xviii The Bidder shall have provided a matrix with a justified calculation of expected worst-case antenna isolation values between all antenna port pairs, when measured at the antenna matrix output.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.c. PIP Section 3: Quality Assurance (QA) 3.4.9.c.i The Bidder shall provide information sufficient to demonstrate that the Quality Assurance and Quality Control (QA/QC) Programme meets the requirements of the Prospective Contract. The Bidder shall provide certification confirming that the Quality Programme meets the equivalent national and/or international standards.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.c. PIP Section 3: Quality Assurance (QA) 4.4.9.c i The Bidder shall have submitted a preliminary version of the Quality Assurance/Quality Control (QA/QC) Plan in accordance with SOW Section 6 of the Prospective Contract. Within this plan, the Bidder shall have addressed all the requirements of the Contract concerning QA and QC as set forth in Article 25 of the Contract Special Provisions and SOW Section 6 of the Prospective Contract. The Bidder shall have also identified the QA/QC systems (NATO, National, company) that he intended to apply to the performance of this contract and shall demonstrate that his choice complies with the applicable requirements.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.c. PIP Section 3: Quality Assurance (QA) 3.4.9.c.ii The Bidder shall also describe the QA/QC organisation of his Company and the position it occupies within the management structure of the Company. This shall include the proposed overall QA Manager as well as detailing how the Software, Hardware and Documentation aspects of QA Management shall be exercised.	Paragraph 4.4.9 Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.c. PIP Section 3: Quality Assurance (QA) 4.4.9.c.ii The Bidder shall have provided that the QA/QC organization in his company has enough competence with demonstrated capability in managing Quality Programme of a project of this magnitude. The QA/QC organization and the QA Manager have sufficient inherent authority and visibility in the overall corporate structure to properly execute the Software, Hardware and Documentation aspects of QA Management of a project of this size and complexity.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.c. PIP Section 3: Quality Assurance (QA) 3.4.9.c.iii The proposed Quality Assurance / Quality Control Plan shall show how procedures are developed, implemented and maintained to adequately control the design, integration, production, purchasing, installation, inspection, testing, configuration management and customer support of all services and all products (both management products and specialist products), in accordance with the requirements of this Contract.	Paragraph 4.4.9 Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.c. PIP Section 3: Quality Assurance (QA) 4.4.9.c.iii The proposed Quality Assurance / Quality Control Plan shall have demonstrated how procedures are developed, implemented and maintained to adequately control the design, integration, production, purchasing, installation, inspection, testing, configuration management and customer support of all services and all products (both management products and specialist products), in accordance with the requirements of this Contract.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.c. PIP Section 3: Quality Assurance (QA) 3.4.9.c.iv The proposed QA/QC Plan shall describe the quality criteria that will be applied to each of the deliverables under this contract (i.e. the documentation as well as the system and all of its components).	Paragraph 4.4.9 Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.c. PIP Section 3: Quality Assurance (QA) 4.4.9.c.iv The proposed QA/QC Plan shall have described the quality criteria that will be applied to each of the deliverables under this contract (i.e. the documentation as well as the system and all of its components).	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.c. PIP Section 3: Quality Assurance (QA) 3.4.9.c.v The proposed QA/QC Plan shall describe the Bidder's internal process for the quality review of the deliverables before their release to the Purchaser.	Paragraph 4.4.9 Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.c. PIP Section 3: Quality Assurance (QA) 4.4.9.c.v The proposed QA/QC Plan shall have described the Bidder's internal process for the quality review of the deliverables before their release to the Purchaser.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.c. PIP Section 3: Quality Assurance (QA) 3.4.9.c.vi The proposed Quality Plan shall describe how all necessary assistance shall be provided to the Quality Assurance Representative or his delegated National QAR, and how quality records for the prime and any Sub-contractors or consortium members shall be made available for evaluation.	Paragraph 4.4.9 Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.c. PIP Section 3: Quality Assurance (QA) 4.4.9.c.vi The proposed Quality Plan shall have described how all necessary assistance shall be provided to the Quality Assurance Representative or his delegated National QAR, and how quality records for the prime and any Sub-contractors or consortium members shall be made available for evaluation.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.c. PIP Section 3: Quality Assurance (QA) 3.4.9.c.vii_____The Bidder shall clearly indicate the Quality-related activities, responsibilities, and controls for the prime and any Sub-contractors and shall state how he intends to ensure compliance of his prospective sub-Contractors and, as applicable, of the prospective suppliers of Commercial-Off-The-Shelf (COTS) equipment with QA/QC requirements of the SOW of the Prospective Contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.c. PIP Section 3: Quality Assurance (QA) 4.4.9.c.vii The Bidder shall have provided information similar to that set forth in BOOK I paragraph 4.4.9.c.above in order to demonstrate the conformance to the QA/QC contract requirements by the major sub-contractors and suppliers and shall have stated how he intends to ensure compliance of his prospective sub-Contractors and, as applicable, of the prospective suppliers of Commercial-Off-The-Shelf (COTS) equipment with QA/QC requirements of the SOW of the Prospective Contract.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.d. PIP Section 4: Configuration Management 3.4.9.d.i The Bidder shall provide a preliminary version of the Bidder's Configuration Management (CM) Plan for BRASS in accordance with SOW Section 7 of the Prospective Contract that shall detail the processes, methods and procedures that would be used to implement the requirements as set forth in the SOW of the Prospective Contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.d. PIP Section 4: Configuration Management 4.4.9.d.i The Bidder shall have submitted a preliminary Configuration Management Plan for BRASS that conforms with the requirements of SOW Section 7 of the Prospective Contract. The Bidder shall have demonstrated that his proposed Configuration Management procedures meet the requirements of SOW Section 7 of the Prospective Contract. The Bidder shall further provide details of his existing CM organization.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.d. PIP Section 4: Configuration Management 3.4.9.d.ii The Bidder shall outline how he adopts the Configuration Management processes and deliverables to the scope of this contract as requested in the SOW Section 7.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.d. PIP Section 4: Configuration Management 4.4.9.d.ii The Bidder shall have outlined how he adopts the Configuration Management processes and deliverables to the scope of this contract as requested in the SOW Section 7.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.d. PIP Section 4: Configuration Management 3.4.9.d.iii The Bidder shall demonstrate that the various baselines referred under SOW paragraph 7.5 will be established using automated tools.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.d. PIP Section 4: Configuration Management 4.4.9.d.iii The Bidder shall have demonstrated that the various baselines referred under SOW paragraph 7.5 will be established using automated tools.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.d. PIP Section 4: Configuration Management 3.4.9.d.iv In addition, the Bidder shall demonstrate that a Configuration Status Accounting (CSA) database will be maintained using software tools during the Contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.d. PIP Section 4: Configuration Management 4.4.9.d.iv In addition, the Bidder shall have demonstrated that a Configuration Status Accounting (CSA) database will be maintained using software tools during the Contract.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.d. PIP Section 4: Configuration Management 3.4.9.d.v The Bidder shall describe the Bidder's approach to conduct the Physical Configuration Audit for each site, including the verification of delivered configuration items against the Product Baseline.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.d. PIP Section 4: Configuration Management 4.4.9.d.v The Bidder shall have described the Bidder's approach to conducting the Physical Configuration Audit for each site, including the verification of delivered configuration items against the Product Baseline.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.d. PIP Section 4: Configuration Management 3.4.9.d.vi The Bidder shall provide, as part of the CM Plan, A project specific, Configuration Control process description; an initial set of project specific Configuration Item selection criteria for the capabilities; an initial set of project specific Configuration Items (CI) including their attributes and relationships among each other for the Capabilities.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.d. PIP Section 4: Configuration Management 4.4.9.d.vi The Bidder shall have provided, as part of the CM Plan, A project specific, Configuration Control process description; an initial set of project specific Configuration Item selection criteria for the capabilities; an initial set of project specific Configuration Items (CI) including their attributes and relationships among each other for the Capabilities.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.e. PIP Section 5: Integrated Logistics Support 3.4.9.e.iThe Bidder shall provide a high level description of the proposed Integrated Logistics Support Plan. This plan shall cover the requirements of the Prospective Contract as set forth in Section 8 of the Statement of Work.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.e. PIP Section 5: Integrated Logistics Support 4.4.9.e.iThe Bidder shall have provided a high level description of the proposed Integrated Logistics Support Plan. This plan shall have covered the requirements of the Prospective Contract as set forth in Section 8 of the Statement of Work.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.e. PIP Section 5: Integrated Logistics Support 3.4.9.e.ii The Bidder shall describe his approach to the BRASS-BGR systems maintenance and Supply Support for both hardware and software and shall describe how he will meet the requirements in accordance with SOW paragraph 8.1 to 8.8 of the SOW of the Prospective Contract. The Bidder shall describe the proposed spares provisioning methodology.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.e. PIP Section 5: Integrated Logistics Support 4.4.9.e.ii The Bidder shall have described his approach and how he will meet the requirements for the BRASS-BGR systems maintenance and Supply Support for both hardware and software in accordance with SOW paragraph 8.1 to 8.8 of the Prospective Contract. The Bidder shall have described the proposed spares provisioning methodology.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.e. PIP Section 5: Integrated Logistics Support 3.4.9.e.iii The Bidder shall prepare draft Customer Support Concept and outline how he adopts the Support processes and deliverables to the scope of this contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.e. PIP Section 5: Integrated Logistics Support 4.4.9.e.iii The Bidder shall have prepared draft Customer Support Concept and outlined how he adopts the Support processes and deliverables to the scope of this contract. The Bidder shall have provided as part of the Draft Support Concept: • A project specific, Problem Management process description including all Bidder resources (number and labor categories of staff, nature and quantities of any other required resources) that he will use to provide this 2nd Level Support to the Capabilities 1, 3, 4, and 5 • A “Problem Analysis Report”- Template. • Draft Maintenance Concept. The Bidder shall outline how he adapts the Maintenance processes and deliverables to the scope of this contract. • Draft Transportation Plan. The Bidder shall outline how he adopts the Transportation processes and deliverables to the scope of this contract.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.e. PIP Section 5: Integrated Logistics Support 3.4.9.e.iv The Bidder shall also provide how he fulfil his roles and responsibilities in relation to each of the elements of the Contractor Logistics Support (CLS) concept during Contract Implementation and Warranty detailed at SOW paragraph 8.7 of the Prospective Contract. In addition, The Bidder shall provide a preliminary CLS Plan as set forth in SOW paragraph 8.7 and 8.8 of the Prospective Contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.e. PIP Section 5: Integrated Logistics Support 4.4.9.e.iv The Bidder shall have provided how he fulfil his roles and responsibilities in accordance with the Contractor Logistics Support (CLS) concept during Contract Implementation and Warranty detailed at SOW paragraph 8.7 of the Prospective Contract. In addition, The Bidder shall also have provided a preliminary CLS Plan as set forth in SOW paragraph 8.7 and 8.8 of the Prospective Contract, describing the services Contractor shall perform during the Post Warranty period. The bidder shall have stated if he is capable of providing full CLS after warranty period, as specified in SOW of the prospective contract and Book III.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.f. PIP Section 6: Test and Evaluation 3.4.9.f.i The bidder shall describe in detail his approach to develop test and evaluation documentation.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.f. PIP Section 6: Test and Evaluation 4.4.9.f.i The bidder shall have described in detail his approach to developing test and evaluation documentation.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.f. PIP Section 6: Test and Evaluation 3.4.9.f.ii The Bidder shall identify his proposed test organisation and provide preliminary Test and Evaluation plan by WBS for the allocation of personnel and the time line for the Test activities. set forth as requirements in SOW Section 10 of the Prospective Contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.f. PIP Section 6: Test and Evaluation 4.4.9.f.ii The Bidder shall have submitted a preliminary version of the Test and Evaluation Plan for FAT, ISAT and SAT, for the allocation of personnel and the time line for the Test activities that meets the overall requirements and objectives of SOW Section 10 of the Prospective Contract.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.f. PIP Section 6: Test and Evaluation 3.4.9.f.iii This plan shall also include a preliminary Security Test and Evaluation Plan (STEP) that meets the requirements set forth as in SOW Section 5 of the Prospective Contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.f. PIP Section 6: Test and Evaluation 4.4.9.f iii The Bidder shall have submitted as integral part of the testing activities provide a preliminary Security Test and Evaluation Plan (STEP) that meets the requirements set forth as in SOW Section 5 of the Prospective Contract.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.f. PIP Section 6: Test and Evaluation 3.4.9.f.iv The Bidder shall describe the major components, sub-assemblies and assemblies that are proposed to be submitted for acceptance on the basis of prior testing and qualification and that are expected to undergo partial testing and extensive testing and evaluation.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.f. PIP Section 6: Test and Evaluation 4.4.9.f.iv The Bidder shall have provided comprehensive information about the major components, sub-assemblies and assemblies that are expected to undergo partial testing and extensive testing and evaluation prior to FAT, ISAT and SAT.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.f. PIP Section 6: Test and Evaluation 3.4.9.f.v If there are elements of the System that are proposed to be submitted on the basis of a Certificate of Conformity based on prior test and qualification, the Bidder shall provide a summary of the particulars and especially the dates of the prior tests and for whom the testing was executed.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.f. PIP Section 6: Test and Evaluation 4.4.9.f.v If there are elements of the System that are proposed to be submitted on the basis of a Certificate of Conformity based on prior test and qualification, the Bidder shall also have provided a summary of the particulars and especially the dates of the prior tests and for whom the testing was executed.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.f. PIP Section 6: Test and Evaluation 3.4.9.f.vi The Bidder shall describe how the proposed Certificate of Conformity or request for exemption of testing based on prior qualification will be processed from QA and CM aspects.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.f. PIP Section 6: Test and Evaluation 4.4.9.f.vi The Bidder shall have described how the proposed Certificate of Conformity will be processed from QA and CM aspects	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.f. PIP Section 6: Test and Evaluation 3.4.9.f.vii The Bidder shall describe the preliminary version of procedures and controls to be employed for testing of components, sub-assemblies and assemblies that are sub-contracted and tested at sub-contractor's facilities.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.f. PIP Section 6: Test and Evaluation 4.4.9.f vii The Bidder shall have adequately described his proposed methods to ensure the testing in compliance with Contract requirements of components, sub-assemblies and assemblies that are sub-contracted and tested at sub-contractor facilities.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.g. PIP Section 7: Documentation 3.4.9.g.i In this Section, the Bidder shall provide a preliminary Documentation Plan by WBS to detail the resources allocated and the schedule of work to deliver the documentation required in SOW Section 13 of the Prospective Contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.g. PIP Section 7: Documentation 4.4.9.g i In this Section, the Bidder shall have provided a preliminary Documentation Plan by WBS to detail the resources allocated and the schedule of work to deliver the documentation required in SOW Section 13 of the Prospective Contract.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.g. PIP Section 7: Documentation 3.4.9.g.ii In this plan, The Bidder shall describe how he proposes to comply with each of the documentation requirements detailed in SOW Section 13 of the Prospective Contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.g. PIP Section 7: Documentation 4.4.9.g ii In this plan, The Bidder shall have described how he proposes to comply with each of the documentation requirements detailed in SOW Section 13 of the Prospective Contract.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.g. PIP Section 7: Documentation 3.4.9.g.iii The Bidder shall also identify the documentation team and the individual responsible within his organisation for ensuring such documentation is delivered on schedule and to the Contract requirements.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.g. PIP Section 7: Documentation 4.4.9.g iii The Bidder shall also have identified the documentation team and the individual responsible within his organisation for ensuring such documentation is delivered on schedule and to the Contract requirements.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.h. PIP Section 8: System Acceptance 3.4.9.h.i The Bidder shall provide a preliminary System Acceptance Plans by WBS for the allocation of personnel and the time schedule to accomplish all the activities required and ensure the timely delivery of all documentation and other deliverables required for successful Final Systems Acceptance (FSA).	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.h. PIP Section 8: System Acceptance 4.4.9.h i The Bidder shall have provided a preliminary System Acceptance Plans plan by WBS for the allocation of personnel and the time schedule to accomplish all the activities required and ensure the timely delivery of all documentation and other deliverables required for successful Final Systems Acceptance (FSA) in order to meet the requirements as set forth in SOW Section 11 of the Prospective Contract.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.i. PIP Section 9: Training 3.4.9.i.i The Bidder shall provide a preliminary Training Plan in accordance with SOW Section 14 of the Prospective Contract, detailing the training methodology for training of test personnel, operators, maintainers and system administrators, schedules for the initial training of personnel, the proposed training materials and the proposed delivery schedule of those materials	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.i. PIP Section 9: Training 4.4.9.i.i The Bidder shall have submitted two preliminary Training Plan that demonstrates that he fully understands the Training requirements set forth in SOW Section 14 of the Prospective Contract detailing the training methodology for training of test personnel, operators, maintainers and system administrators, schedules for the initial training of personnel, the proposed training materials and the proposed delivery schedule of those materials and thoroughly addresses the salient features of such requirements, such as schedule, material, media and content.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.i. PIP Section 9: Training 3.4.9.i.ii The Bidder shall describe his training organisation and demonstrate that adequate staffing in his organisation will be available to train the student population and meet the schedule without impacting on other activities.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.i. PIP Section 9: Training 4.4.9.i.ii The Bidder shall have described his training organisation and demonstrated that adequate staffing in his organisation will be available to train the student population and meet the schedule without impacting on other activities. The Bidder shall have described the medium/media to be utilised in his proposed training method.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.i. PIP Section 9: Training 3.4.9.i.iii The Bidder shall describe his approach regarding how support staff designated by the Site POC will be provided training on all tasks required to operate the system, perform daily maintenance and administration, disaster recovery, and problem isolation. The Bidder shall describe the Bidder's approach regarding how this training shall be structured according to the First, Second, and Third-Level support concept.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.i. PIP Section 9: Training 4.4.9.i.iii The Bidder shall have described his approach regarding how support staff designated by the Site POC will be provided training on all tasks required to operate the system, perform daily maintenance and administration, disaster recovery, and problem isolation. The Bid shall have described the Bidder's approach regarding how this training shall be structured according to the First, Second, and Third-Level support concept.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.j. PIP Section 10: Reliability, Availability, Maintainability and Testability 3.4.9.j.i The Bidder shall provide a preliminary Reliability, Availability, Maintainability and Testability (RAMT) plan compliant with the requirements stated in SOW Section 9 of the Prospective Contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.j. PIP Section 10: Reliability, Availability, Maintainability and Testability 4.4.9.j i The Bidder shall have provided a preliminary Reliability, Availability, Maintainability and Testability (RAMT) plan compliant with the requirements stated in SOW Section 9 of the Prospective Contract	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.j. PIP Section 10: Reliability, Availability, Maintainability and Testability 3.4.9.j.ii The Bidder shall provide calculations that demonstrate that the BRASS BGR and Systems meets the RAMT requirements set forth in SOW Section 9 of the Prospective Contract. The Bidders shall provide these calculations based as much as possible on actual data derived from operational experience of fielded systems and components and extrapolations therefrom, and shall provide a full description of the source data utilised, providing equipment numbers, owners, location and inclusive dates.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.j. PIP Section 10: Reliability, Availability, Maintainability and Testability 4.4.9.j ii The Bidder shall have provided calculations that convincingly demonstrating that the proposed BRASS BGR and systems design will meet the Reliability, Availability, Maintainability and Testability (RAMT) requirements set forth in the SOW Section 9 of the Prospective Contract. The Bidders shall have provided these calculations based as much as possible on actual data derived from operational experience of fielded systems and components and extrapolations therefrom, and shall have provided a full description of the source data utilised, providing equipment numbers, owners, location and inclusive dates.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.j. PIP Section 10: Reliability, Availability, Maintainability and Testability 3.4.9.j.iii The Bidder shall predict the MTBF (Main Time Between Failure) of the system he proposed and justify that the total availability of the system is within the requested values as specified at SOW.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.j. PIP Section 10: Reliability, Availability, Maintainability and Testability 4.4.9.j iii The Bidder shall have predicted the MTBF of the system he proposed and justify that the total availability of the system is within the requested values as specified at SOW. The Bidder shall provide calculations that demonstrate that the BRASS- Systems meet the RAMT requirements of the IFB.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.j. PIP Section 10: Reliability, Availability, Maintainability and Testability 3.4.9.j.iv The Bidder shall provide DLOS Links reliability and availability figures.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.j. PIP Section 10: Reliability, Availability, Maintainability and Testability 3.4.9.j.iv The Bidder shall have provided DLOS Links reliability and availability figures.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.k. PIP Section 11: Contractor Logistics Support 3.4.9.k.i In this section, the Bidder shall provide a preliminary Contractor Logistic Support (CLS) Plan for the maximum Support Period of the installed BRASS BGR and Systems describing the roles and responsibilities of the Contractor to meet the requirements for CLS concept, as described in SOW paragraphs of the Prospective Contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.k. PIP Section 11: Contractor Logistics Support 4.4.9.k.i The Bidder shall have provided a preliminary Contractor Logistic Support (CLS) Plan for the maximum Support Period of the installed BRASS BGR and Systems describing the roles and responsibilities of the Contractor to meet the requirements for CLS concept, as described in SOW paragraph 8.7 of the Prospective Contract, covering all the aspects as set forth in SOW paragraph 8.7 and 8.8 of the Prospective Contract, describing the services Contractor shall perform during the Warranty period and during all Contracted CLS periods if exercised.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.k. PIP Section 11: Contractor Logistics Support 3.4.9.k.ii The Bidder shall demonstrate that he is capable of providing CLS after the Warranty period as specified in the SOW of the prospective Contract and Book III. The Bidder shall provide firm fixed pricing for all CLS ensuring that system reliability, availability, and maintainability requirements, specified in the SOW, continue to be met during throughout the CLS period.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.k. PIP Section 11: Contractor Logistics Support 4.4.9.k.ii The prospective CLS agreement will be executed by the HN Bulgaria (after FSA) or their representatives not later than the end ofIf exercised, the Warranty Period, should the option for CLS be exercised. The Prospective CLS agreement shall provide for an additional ten (10) years period when combined with the first one-year warranty. Bidders shall note that the post-warranty CLS agreement is an optional requirement of the Prospective Contract for manufacture and installation of the BRASS BGR and Systems. The Bidder shall demonstrate that he is capable of providing CLS after the Warranty period as specified in the SOW of the prospective Contract and Book III. The Bidder shall provide firm fixed pricing for CLS option CLIN 10.1 ensuring that system reliability, availability, and maintainability requirements, specified in the SOW continue to be met during CLS period.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.k. PIP Section 11: Contractor Logistics Support 3.4.9.k.iii As stipulated in Para 3.2.2.a.iv, The bidder shall sign Book I Annex B-4 to certify that he is fully aware that the acceptance of Contract CO-13733-BRASS-BGR includes the potential responsibilities and obligations to perform CLS for a total of 9 years after the BRASS-BGR Systems warranty period. The Bidder shall insert a copy of the signed certificate [Book I Annex-B-4] into his technical proposal.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.k. PIP Section 11: Contractor Logistics Support 4.4.9.k.iii The bidder shall have signed Book I Annex B-4 to certify that he is fully aware that the acceptance of Contract CO-13733-BRASS_BGR includes the potential responsibilities and obligations to perform CLS for a total of 9 years after the BRASS-BGR Systems warranty period. . The Bidder shall have inserted a copy of the signed certificate [Book I Annex-B-4] into his technical proposal.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.k. PIP Section 11: Contractor Logistics Support 3.4.9.k.iv The Bidder shall identify those items (assemblies and subassemblies) that are to be subcontracted for repair, refurbishment, and/or modification, or other services to be performed through a subcontractor. The Bidder shall also identify its major proposed sub-contractors for the CLS contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.k. PIP Section 11: Contractor Logistics Support 4.4.9.k iv Sub-Contractors: The Bidder shall identify those items (assemblies and subassemblies) that are to be sub-Contracted for repair, refurbishment, and/or modification, or other services to be performed through a sub-Contractor. The Bidder shall also have identified its major proposed sub-Contractors for the CLS Contract. The Bidder shall have demonstrated that firm commitments have been made with such subcontractors The Bidder shall identify the firm, the nation of origin, the major items (assemblies, sub-assemblies) or services that the proposed sub-Contractor will be required to furnish, repair, modify and perform.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.k. PIP Section 11: Contractor Logistics Support 3.4.9.k.v The Bidder shall include a letter of intent from the proposed sub-contractor that details its willingness to enter into a sub-contract with the Bidder, if the CLS contract would be awarded to the Bidder.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.k. PIP Section 11: Contractor Logistics Support 4.4.9.k v The Bidder shall have included a letter of intent from the proposed sub-Contractor that details its willingness to enter into a sub-Contract with the Bidder, if the CLS Contract would be awarded to the Bidder.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.k. PIP Section 11: Contractor Logistics Support 3.4.9.k.vi The Bidder shall demonstrate that the proposed Corporate Organisation, meaning the Prime Contractor and any sub-contractors that are proposed for the CLS effort, shall have, in the aggregate, substantial experience in the maintenance and support of similarly sized RF defence systems over the last five (5) years. The description shall include the number of systems supported, the purchaser of the support, and point of contact with the purchaser for reference. The description shall identify any similarities between CLS contracts previously delivered and the requirements under this IFB.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.k. PIP Section 11: Contractor Logistics Support 4.4.9.k.vi The Bidder shall have demonstrated that the elements of the Bidder's proposed organisation that are proposed to carry out the CLS effort have adequate experience in the maintenance and support of major RF defence systems. The experience described shall have expanded on the Corporate Experience descriptions required by paragraph 3.4.8.above to specifically highlight the Prime Contractor's and sub-Contractors' Contracted maintenance and supply efforts for a similar size RF defence system over the last five (5) years. The description shall have included the number of systems supported, the purchaser of the support, and point of contact with the purchaser for reference. The description shall have identified any similarities between CLS Contracts previously delivered and the requirements under this IFB.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.k. PIP Section 11: Contractor Logistics Support 3.4.9.k.vii The Bidder shall provide a description of how its proposed Configuration Management procedures will continue to be implemented on the hardware and software/firmware during the CLS periods.	Paragraph 4.4.9 Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.k. PIP Section 11: Contractor Logistics Support 4.4.9.k.vii The Bidder shall have convincingly demonstrated that the proposed Configuration Management procedures will effectively ensure configuration control during the CLS Periods.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.l. PIP Section 12: Security Accreditation 3.4.9.l.i In this Section, the Bidder shall provide a preliminary Security Accreditation Plan by WBS to detail the resources allocated and the schedule of work to obtain the Security Accreditation and to meet the security requirements set forth in SOW Section 5 of the Prospective Contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.l. PIP Section 12: Security Accreditation 4.4.9.l i The Bidder shall have submitted a preliminary Security Accreditation Plan and shall have convincingly demonstrated that the proposed plan will meet the Security requirements set forth in SOW Section 5 of the Prospective Contract.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.l. PIP Section 12: Security Accreditation 3.4.9.l.ii The Bidder shall confirm that he understands and accepts security accreditation documentation review and approval procedures, as defined in the IFB Book II Part III Contract General Provisions, Clause 22	Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.l. PIP Section 12: Security Accreditation 3.4.9.l.ii The Bidder shall have confirmed that he understands and accepts security accreditation documentation review and approval procedures, as defined in the IFB Book II Part III Contract General Provisions, Clause 22.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.m. PIP Section 13: Risk Assessment and Management 3.4.9.m.i In order to demonstrate overall comprehension of the requirements set forth in the Prospective Contract, the Bidder shall provide a preliminary Risk Assessment and Management Plan (RAMP) defining his strategy for risk management to meet the requirements as set forth in SOW paragraph 2.7 of the Prospective Contract.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.m. PIP Section 13: Risk Assessment and Management 4.4.9.m i The Bidder shall have provided a preliminary Risk Assessment and Management Plan (RAMP) defining his strategy for risk management to meet the requirements as set forth in SOW paragraph 2.7 of the Prospective Contract. The Bidder shall have demonstrated the adequacy of monitoring and control activities to ensure early detection of problem areas and to schedule risk. The Bidder shall have identified the possible risks involved in the performance of the Contract and shall have convincingly demonstrated that his approach offers adequate, logical and pragmatic means for risk identification, assessment, mitigation, monitoring, and reporting the risks, as well as methods for overcoming setbacks to the project throughout the Contract duration.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.n. PIP Section 14: Site Installation and Civil Works 3.4.9.n.i In this Section, the Bidder shall provide a preliminary plan that thoroughly describe the civil works, power and site preparation requirements that must be accomplished to properly install and operate the proposed BRASS-BGR systems as set forth in SOW Section 12 and SOW Annex C of the Prospective Contract..	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.n. PIP Section 14: Site Installation and Civil Works 4.4.9.n.i The Bidder shall have provided specific and comprehensive information concerning the civil works, Power and site preparation requirements that must be accomplished to properly install and operate the proposed BRASS_BGR systems as set forth in SOW Section 12 and SOW Annex C of the Prospective Contract. The bidder shall have demonstrated his concept and technical solutions including sufficient degree of details i.e. how the power generator daily tanks will be integrated/ interfaced with the main fuel tank or tanks. The Bidder shall also have provided specific and comprehensive information concerning the civil works, power and site preparation requirements necessary to have been completed prior to the installation of the delivered BRASS-BGR Systems.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.n. PIP Section 14: Site Installation and Civil Works 3.4.9.n.ii The Bidder shall provide adequate information regarding the requirements in order to quantify the magnitude of total civil works that must be accomplished on site prior to arrival of the equipment for installation.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.n. PIP Section 14: Site Installation and Civil Works 4.4.9.n.ii Requirements such as load bearing capacity of concrete, special structural supports, pilings, platforms, reinforcements, power supply requirements etc, shall have been indicated in order to verify the infrastructure capabilities provided by HN on TX and RX sites site prior to arrival of the equipment for installation. This information shall also have been indicated to quantify the magnitude of total civil works that must be accomplished on ACMS site by the Contractor.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.n. PIP Section 14: Site Installation and Civil Works 3.4.9.n.iii The Bidder shall specify any characteristics of the BRASS-BGR systems that constrain the type of civil works that are to be performed to prepare the sites..	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.n. PIP Section 14: Site Installation and Civil Works 4.4.9.n.iii The Bidder shall have adequately specified any characteristics of the BRASS BGR Systems that may constrain the type of civil works to be performed to prepare the sites. The type of constraints may be of the nature of working and implementation environment, special material requirements or prohibited materials, location of power supplies, location of conduits for cabling, or operating characteristics that require the maintenance of a specialised or customised environment (e.g., minimum distance from high tension lines, specific climate conditions etc). In his proposal, the Bidder shall have demonstrated an appropriate understanding of the user involvement and of required coordination with the user during the development of the implementation. The bidder shall have drawn an appropriate conclusion as to what and how was analysed to identify constrains for civil works and what are the constrains.	

BIDDING INSTRUCTION	ASSOCIATED BID EVALUATION CRITERIA in BOOK I	BID REFERENCE
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.n. PIP Section 14: Site Installation and Civil Works 3.4.9.n.iv In addition, In case of a potential disruption of national communications services due to the contractor activities The Bidder shall also deliver a preliminary System Installation Transition Plan (SITP) to ensure minimum disruption of provision of national communications services between site preparation and ISAT for the purpose of reducing the risks of Contract cost overrun, and reducing the risks of lengthy disruption to mission-critical HN communications services. Generally, the plan should provide possibility to close down services gradually This transition Plan will be subject to the approval of HN Bulgaria, through the Purchaser.	Paragraph 4.4.9. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.n. PIP Section 14: Site Installation and Civil Works 4.4.9.n.iv The Bidder shall have delivered a preliminary System Installation Transition Plan (SITP) to ensure minimum disruption of provision of national communications services between site preparation and ISAT and to enable NCI Agency to assess the bidder's understanding of the installation requirements in the HN to reduce the risk of Contract cost overrun, and to reduce the risk of lengthy disruption to mission-critical HN communications services. Preliminary SITP shall include but not limited to; a work schedule and task list as well as analysis provided as to how to plan, organize and execute works for system installation that maximises the amount of on-air time and minimized off-air time for HN HF services, until the HN HF services could be supported as part of the BRASS-BGR systems.	
Paragraph 3.4.9 – Section 3: Preliminary Project Implementation Plan (PIP) 3.4.9.n. PIP Section 14: Site Installation and Civil Works 3.4.9.n.v Bidder shall confirm his understanding and acceptance of the site access requirements as defined in the IFB.	Paragraph 4.4.8. Section 3: Preliminary Project Implementation Plan (PIP) 4.4.9.n. PIP Section 14: Site Installation and Civil Works 4.4.9.n.v Bidder shall have confirmed his understanding and acceptance of the site access requirements as defined in the IFB.	

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IFB-CO-13733-BRASS–BGR-AMD2

BOOK I

ANNEX D

CLARIFICATION REQUEST FORM

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Serial NR	IFB REF	BIDDERS QUESTION	NCI AGENCY ANSWER	STATUS*
A.1				
A.2				
P.1				
P.2				
T.1				
T.2				

A= Administrative/Contractual; P= Price; T= Technical
* Status: Is Amendment to IFB required as a direct result of the Clarification Request?

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BOOK I

ANNEX E

REQUIREMENT TRACEABILITY MATRIX

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Requirement Traceability Matrix

SOW Paragraph	Bid Reference
1.1	N/A (no requirements)
1.2	N/A (no requirements)
1.3	N/A (no requirements)
2.1	[insert Paragraph number of your Bid]
2.1.1	[insert sub-Paragraph number of your Bid]
2.1.2	
…	
…	
SOW Annex A	
1.1	
…	
SOW Annex B	
1.1	
…	
SOW Annex C	N/A (no requirements)
SOW Annex D	
SOW Annex E	

IFB-CO-13733-BRASS-BGR-AMD2

BOOK II – PROSPECTIVE CONTRACT

PART I - CONTRACT SCHEDULES

SCHEDULES OF SUPPLIES AND SERVICES (SSS)

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INDEX

BOOK II PART I SECTION 1
SCHEDULE OF SUPPLIES AND SERVICES

BOOK II PART I SECTION 2
SCHEDULE OF MAJOR PERFORMANCE MILESTONES

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BOOK II PART I SECTION 1- SCHEDULES OF SUPPLIES AND SERVICES (SSS) FOR IFB CO-13733-BRASS-BGR-AMD2

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
1	**Project Management Deliverables**									
1.1	**Final Project Implementation Plan (PIP)**	SOW 2.3	E + P	2 + 2				EDC + 12 weeks	Purchaser's and HN's premises	
1.2	**Documentation**					Not Separately Priced	Not Separately Priced			
1.2.1	CDR Documentation	SOW 4.6; 13	E + P	2 + 2				Draft 4 weeks prior to CDR Meeting, final acceptance 24 week	Purchaser's and HN's premises	
1.2.2	Interface Control and Management Documents	SOW 2;3; 4;7; 13	E + P	2 + 2				Draft 4 weeks prior to CDR Meeting, final acceptance 24 weeks	Purchaser's and HN's premises	
1.2.3	As-Built Drawings	SOW 4;8;10;13	E + P	4 + 4				FSA	Purchaser's and HN's premises	
1.2.4	User Manuals	SOW 13	E + P	4 + 4				Draft EDC + 56 weeks Final EDC + 64 weeks	Purchaser's and HN's premises	
1.2.5	Maintenance Manuals	SOW 13	E + P	4 + 4				EDC + 64 weeks	Purchaser's and HN's premises	
1.2.6	Site Maintenance Plan	SOW 13	E + P	4 + 4				EDC + 64 weeks	Purchaser's and HN's premises	
1.2.7	Logistics documentation	SOW 13	E + P	2 + 2				EDC + 64 weeks (before FSA)	Purchaser's and HN's premises	
1.2.8	Logbooks	SOW 13.11	E + P	2 + 2				EDC + 64 weeks (before FSA)	Purchaser's and HN's premises	

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
1.3	**Reports**					Not Separately Priced	Not Separately Priced			
1.3.1	Project Checkpoint Reports	SOW 2.4	E + P	2 + 2				Every month	Purchaser's and HN's premises	
1.3.2	Project Progress Reports	SOW 2.5	E + P	2 + 2				Every 3 months	Purchaser's and HN's premises	
1.3.3	Detailed Design Specifications	SOW 4.6; 13	E + P	1+1				Draft 4 weeks prior to CDR Meeting, final acceptance 24 weeks	Purchaser's and HN's premises	
1.3.4	Configuration Item (CI) specifications	SOW 4; 7	E + P	1+1				CDR Meeting + 5 weeks	Purchaser's and HN's premises	
1.3.5	Installation Checkout Reports	SOW 10.5	E + P	1+1				CDR + 60 weeks	Purchaser's and HN's premises	
1.3.6	Configuration Status Accounting	SOW 7.13	E + P	1+1				EDC + 64 weeks (before FSA)	Purchaser's and HN's premises	
1.3.7	Test Procedures and Test Reports (including Certificate of Compliances)	SOW 10;13	E + P	2 + 2				Test Procedures: 2 weeks prior to test start Test Reports: 2 weeks after the tests	Purchaser's and HN's premises	
1.3.8	Test Readiness Review Reports	SOW 10.4	E + P	1+1				1 week after TRR	Purchaser's and HN's premises	
1.3.9	Final System Acceptance Report	SOW 11.7	E + P	1+1				3 weeks prior to FTT Meeting	Purchaser's and HN's premises	
1.3.10	Deficiency Clearance Report	SOW 11.2;11.3; 11.4; 11.5	E + P	1+1				3 weeks prior to FTT Meeting	Purchaser's and HN's premises	
1.3.11	Documentation Record	SOW 13.16	E + P	1+1				When Updated	Purchaser's and HN's premises	
1.4	**Meetings (including Minutes)**					Not Separately Priced	Not Separately Priced			

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
1.4.1	Kick Off Meeting (=PPM #1)	SOW 2.6	Minutes E + P	1				EDC + 1 weeks	Purchaser's premises	
1.4.2	Project Progress Meetings	SOW 2.6	Minutes E + P	5				Every 3 months	Purchaser's premises	
1.4.3	PIP Review Meeting (=PPM #2)	SOW2.3; 2.6; 3.3	Minutes E + P	1				EDC + 8 weeks	Purchaser's premises	
1.4.4	Site Preparation Data Package (SPDP) Coordination Meeting	SOW 12.2; 12.5	Minutes E + P	1				EDC + 10 weeks	Purchaser's or HN's premises	
1.4.5	Critical Design Review (CDR) Meeting	SOW 3.3; 4.6	Minutes E + P	1				EDC + 24 weeks	Purchaser's or HN's or Contractor's premises	
1.4.6	Test Readines Review Meetings	SOW 10.4.3	Minutes E + P	3				1 week before FAT, ISAT and SAT	Purchaser's or HN's or Contractor's premises	
1.4.7	Installation Checkout Meeting	SOW 10.5	Minutes E + P	1				EDC + 44 weeks	HN's premises	
1.4.8	Final Technical Transfer meeting (BRASS)	SOW 3.3; 11.8	Minutes E + P	1				EDC + 64 weeks (before FSA)	Varna	
1.5	**Warranty during 12 months after Final System Acceptance (FSA) for the CLINs 2 thru 9 and sub-CLINs 1.1 thru 1.4**									
	TOTAL CLIN 1									
2	**System Acceptance (Procedures, Tests, Meeting, Report and Updates)**									
2.1	Completion of Factory Acceptance Tests (FAT) for BRASS	SOW 10		1				EDC + 44 weeks	Contractor's Facility	
2.2	Tx site Individual Site Acceptance Tests (ISAT) including clearing deficiencies.	SOW 2; 3; 4; 5; 10		1				EDC + 56 weeks	Asparuhovo &	
2.3	Rx site Individual Site Acceptance Tests (ISAT) including clearing deficiencies.	SOW 2; 3; 4; 5; 10		1				EDC + 56 weeks	Galata	
2.4	System Acceptance Test (SAT) in ACMS including clearing deficiencies	SOW 2; 3; 4; 5; 10		1				EDC + 58 weeks	Gorna Traka & Asparuhovo & Galata	
2.5	Completion of Functional Configuration Audits (FCA)	SOW 7.14;10		1				EDC +46 weeks	Contractor's Facility and on-site	

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
2.6	Completion of Physical Configuration Audits (PCA)	SOW 7.14; 10		1				EDC + 60 weeks	Contractor's Facility and on site	
2.7	Final System Acceptance (FSA)	SOW 3.3; 11		1				EDC + 64 weeks	Gorna Traka & Asparuhovo & Galata	
	TOTAL CLIN 2									
3	**Integrated Logistic Support**									
3.1	Recommended Spare Parts List and Tools and Equipment List	SOW 8.3; 8.4	E + P	2 + 2				CDR Meeting + 8 weeks	Purchaser's premises	
3.2	Codification of Items	SOW 8.9		set				EDC + 48 weeks	Purchaser's premises	
3.3	Transport and Insurance	SOW 8.12; 8.15		set				After Contract Award	Host Nation's premises	
	TOTAL CLIN 3									
4	**System Commissioning**									
4.1	Conducting Site Surveys (including preparation and reports)	SOW 3.6	Reports E + P	2 sets				EDC + 6 weeks	Gorna Traka & Asparuhovo & Galata	
4.2	Site Preparation Data Package (SPDP) (draft, review and update)	SOW 12.5	E + P	2 + 2				EDC + 8 weeks (draft) EDC + 11 weeks (review) EDC + 12 weeks (final)	Purchaser's premises	
4.3	Acceptance of Site Installation Specifications (draft, review and update) documentation	SOW 3.3; 3.7	E + P	2 + 2				EDC + 24 weeks	Purchaser's premises	
4.4	**ACMS Site Gorna Traka Civil Works**					Not Separately Priced	Not Separately Priced			
4.4.1	Antenna Foundaions (DLOS)	SOW 12; Annex C		set				EDC + 52 weeks	Gorna Traka	
4.4.2	Antenna Mounting Installations (DLOS)	SOW 12; Annex C		set				EDC + 52 weeks	Gorna Traka	

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
4.4.3	Distribution Electrical Panels	SOW 12; Annex C		set				EDC + 52 weeks	Gorna Traka	
4.5	**TX Site Asparuhovo Civil Works ~~(BRASS &SSSB)~~**					Not Separately Priced	Not Separately Priced			
4.5.1	Antenna Foundaions (BRASS and DLOS)	SOW 12; Annex C		set				EDC + 52 weeks	Asparuhovo	
4.5.2	Antenna Mounting Installations (BRASS and DLOS)	SOW 12; Annex C		set				EDC + 52 weeks	Asparuhovo	
4.5.3	Distribution Electrical Panels	SOW 12; Annex C		set				EDC + 52 weeks	Asparuhovo	
4.6	**RX Site Galata Civil Works**					Not Separately Priced	Not Separately Priced			
4.6.1	Antenna Foundaions (BRASS and DLOS)	SOW 12; Annex C		set				EDC + 52 weeks	Galata	
4.6.2	Antenna Mounting Installations (BRASS and DLOS)	SOW 12; Annex C		set				EDC + 52 weeks	Galata	
4.6.3	Distribution Electrical Panels	SOW 12; Annex C		set				EDC + 52 weeks	Galata	
4.7	Completion of System Installation (HW and SW), Integration and Setting to Work (including reports)	SOW ; SOW Annex-A		set				EDC + 52 weeks	Gorna Traka & Asparuhovo & Galata	
4.8	Connectivity to external systems & interfaces	SOW ; SOW Annex-A		set				EDC + 52 weeks	Gorna Traka & Asparuhovo & Galata	
4.9	**Training**					Not Separately Priced	Not Separately Priced			
4.9.1	Training Plan	SOW 14	E + P	2 + 2				EDC + 60 weeks	Purchaser's and HN premises	
4.9.2	Training documentation	SOW 13; 14	E + P as specified in SOW 14					EDC + 60 weeks	Purchaser's and HN premises	

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
4.9.3	Training of Testing Personnel	SOW 14		1				EDC + 60 weeks (before FSA)	Gorna Traka & Asparuhovo & Galata	
4.9.4	Training of Operators (including reports)	SOW 14		1				EDC + 60 weeks (before FSA)	Gorna Traka & Asparuhovo & Galata	
4.9.5	Training of Maintainers (including reports)	SOW 14		1				EDC + 60 weeks (before FSA)	Gorna Traka & Asparuhovo & Galata	
4.9.6	Training of System Administrators (including reports)	SOW 14		1				EDC + 60 weeks (before FSA)	Gorna Traka & Asparuhovo & Galata	
4.9.7	Instructor Training (Train the Trainer)									
	TOTAL CLIN 4									
5	**HARDWARE for ACMS at Gorna Traka**									
5.1	**Message Processing System (MPS)**					Not Separately Priced	Not Separately Priced			
5.1.1	Server using the Back Up configuration IDC SW for dual configuration	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Gorna Traka	
5.1.2	Workstations	SOW Annex A Sect. 5 ; 6		5				EDC + 48 weeks	Gorna Traka	
5.1.3	MPS Dual LAN FO (including switches, routers)	SOW Annex A Sect. 5 ; 6		1 set				EDC + 48 weeks	Gorna Traka	
5.1.4	Large Screen Display	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.1.5	Scanner with OCR	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.1.6	MPS Storage Unit (Disk Array)	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.1.7	Network Printer (Laser)	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Gorna Traka	
5.1.8	MPS Type Paper Tape Puncher/reader	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.1.9	UPS in Rack	SOW Annex		3				EDC + 48 weeks	Gorna Traka	

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
		A Sect. 5 ; 6								
5.1.10	Racks std 19"	SOW Annex A Sect. 5 ; 6		3				EDC + 48 weeks	Gorna Traka	
5.1.11	Tempest Protection	SOW Annex-A - SOW Annex-C		1 Lot				EDC + 48 weeks	Gorna Traka	
5.2	**Communication Interface and Switching Management System (CISS)**					Not Separately Priced	Not Separately Priced			
5.2.1	Red Digital Switch	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.2.2	Black Digital Switch	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.2.3	ARQ ST 5066 processor	SOW Annex A Sect. 5 ; 6		3				EDC + 48 weeks	Gorna Traka	
5.2.4	ARQ Isolator/firewall (between red ARQ processor and black CISS/RSC)	SOW Annex A Sect. 5 ; 6		3				EDC + 48 weeks	Gorna Traka	
5.2.5	Multiplexer (Intersite)	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.2.6	Racks std 19"	SOW Annex A Sect. 5 ; 6		4				EDC + 48 weeks	Gorna Traka	
5.3	**Remote Supervisory and Control (RSC)**					Not Separately Priced	Not Separately Priced			
5.3.1	RSC Server in cluster configuration	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Gorna Traka	
5.3.2	RSC LAN (including switches, routers)	SOW Annex A Sect. 5 ; 6		1 set				EDC + 48 weeks	Gorna Traka	
5.3.3	Work Station	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Gorna Traka	
5.3.4	Laser Printer	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.3.5	Large Screen Display	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
5.3.6	Isolator (MPS - RSC)	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.3.7	UPS in Racks	SOW Annex A Sect. 5 ; 6		3				EDC + 48 weeks	Gorna Traka	
5.3.8	Racks std 19"	SOW Annex A Sect. 5 ; 6		3				EDC + 48 weeks	Gorna Traka	
5.4	**Voice Management Sub-System (VMSS)**					Not Separately Priced	Not Separately Priced			
5.4.1	Black Voice Network	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.4.2	Red Voice Network	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.4.3	Black Voice Switch	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.4.4	Red Voice Switch	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.4.5	Voice Terminals	SOW Annex A Sect. 5 ; 6		4				EDC + 48 weeks	Gorna Traka	
5.4.6	Recorder	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Gorna Traka	
5.5	**Precision Time and Frequency Standard Subsystem (PTFS)**					Not Separately Priced	Not Separately Priced			
5.5.1	Main Unit	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.5.2	Distribution Unit	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.5.3	GPS Receiver	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.5.4	Isolator for PTFS	SOW Annex A Sect. 5 ; 6		3				EDC + 48 weeks	Gorna Traka	
5.5.5	Racks std 19"	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Gorna Traka	
5.6	**BRASS BGR connectivity to NGCS**					Not Separa	Not Separatel			

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
						tely Priced	y Priced			
5.6.1	Red Routers	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Gorna Traka	
5.6.2	Black Routers	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Gorna Traka	
5.7	**ACMS Site DLOS Connection~~Precision Time and Frequency Standard Subsystem (PTFS)~~**					Not Separately Priced	Not Separately Priced			
5.7.1	Base Station	SOW Annex A		2				EDC + 48 weeks	Gorna Traka	
5.7.2	Antenna and Cabling	SOW Annex A		2				EDC + 48 weeks	Gorna Traka	
5.7.3	Antenna Masts	SOW Annex A		1				EDC + 48 weeks	Gorna Traka	
	TOTAL CLIN 5									
6	**HARDWARE for TX Site at Asparuhovo**					Not Separately Priced	Not Separately Priced			
6.1	**BRASS CISS**									
6.1.1	Data RF Modems	SOW Annex A Sect. 5 ; 6		5				EDC + 48 weeks	Asparuhovo	
6.1.2	Voice RF Modems	SOW Annex A Sect. 5 ; 6		3				EDC + 48 weeks	Asparuhovo	
6.1.3	Audio Switch	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Asparuhovo	
6.1.4	Data Switch	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Asparuhovo	
6.1.5	Analog switch for remote sites	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Asparuhovo	
6.1.6	Black Switch	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Asparuhovo	
6.2	**BRASS RSC**					Not Separately	Not Separately Priced			

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
						Priced				
6.2.1	RSC LAN (including switches, routers)	SOW Annex A Sect. 5 ; 6		1 set				EDC + 48 weeks	Asparuhovo	
6.2.2	Work Station	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Asparuhovo	
6.2.3	Network Printer (Laser)	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Asparuhovo	
6.2.4	UPS in Rack	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Asparuhovo	
6.2.5	Racks std 19"	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Asparuhovo	
6.3	**BRASS Radio HW**					Not Separately Priced	Not Separately Priced			
6.3.1	5 KW Solid State Transmitter	SOW Annex A Sect. 5 ; 6		8				EDC + 48 weeks	Asparuhovo	
6.3.2	Dummy Load for 5 KW	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Asparuhovo	
6.3.3	Automated Antenna Matrix (10x11)	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Asparuhovo	
6.3.4	Wideband Horizontal Dipole Antenna	SOW Annex A Sect. 5 ; 6		6				EDC + 48 weeks	Asparuhovo	
6.3.5	RLP Antennas with lighting kit and safety climb system (with ancillaries)	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Asparuhovo	
6.3.6	RF Transmission Lines and Connectors	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Asparuhovo	
6.3.7	UPS in Rack	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Asparuhovo	
6.3.8	Racks std 19"	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Asparuhovo	
6.4	**Tx Site DLOS Connection**					Not Separately Priced	Not Separately Priced			
6.4.1	Base Station	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Asparuhovo	

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
6.4.2	Antenna and Cabling	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Asparuhovo	
6.4.3	Antenna Masts	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Asparuhovo	
	TOTAL CLIN 6									
7	**HARDWARE for RX Site at Galata**									
7.1	**BRASS CISS**					Not Separately Priced	Not Separately Priced			
7.1.1	Black Switch (with digital and Analog Interfaces)	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Galata	
7.1.2	Data RF Modem	SOW Annex A Sect. 5 ; 6		5				EDC + 48 weeks	Galata	
7.1.3	Audio Switch for Remote Site	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Galata	
7.1.4	Data Switch	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Galata	
7.1.5	Analog Switch for Remote Site	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Galata	
7.1.6	Voice Modems	SOW Annex A Sect. 5 ; 6		3				EDC + 48 weeks	Galata	
7.2	**BRASS RSC**					Not Separately Priced	Not Separately Priced			
7.2.1	Work Station	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Galata	
7.2.2	Network Printer (Laser)	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Galata	
7.2.3	UPS in Rack	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Galata	
7.2.4	Racks std 19"	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Galata	
7.3	**BRASS RADIO HARDWARE**					Not Separately	Not Separately Priced			

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
						Priced				
7.3.1	HF Radio Receiver Equipment	SOW Annex A Sect. 5 ; 6		5				EDC + 48 weeks	Galata	
7.3.2	Automated Antenna Matrix (7x7)	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Galata	
7.3.3	RLP Antenna System with lighting kit and safety climb system (with ancilleries)	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Galata	
7.3.4	Wideband Horizontal Dipole Antenna (with ancilleries)	SOW Annex A Sect. 5 ; 6		3				EDC + 48 weeks	Galata	
7.3.5	RF Transmission Lines	SOW Annex A Sect. 5 ; 6		1				EDC + 48 weeks	Galata	
7.3.6	UPS in Racks	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Galata	
7.3.7	Racks std 19"	SOW Annex A Sect. 5 ; 6		2				EDC + 48 weeks	Galata	
7.4	**DLOS CONNECTION**					Not Separately Priced	Not Separately Priced			
7.4.1	Base Station	SOW Annex A		2				EDC + 48 weeks	Galata	
7.4.2	Antenna and Cabling	SOW Annex A		2				EDC + 48 weeks	Galata	
7.4.3	Antenna Masts	SOW Annex A		1				EDC + 48 weeks	Galata	
	TOTAL CLIN 7									
8	**BRASS SOFTWARE**					Not Separately Priced	Not Separately Priced			
8.1	Server Operating System (COTS) for MPS servers and Monitoring and Control Equipment	SOW Ann.-A Sect. 5 ; 6 and Ann.-B		2				EDC + 58 weeks	Gorna Traka & Asparuhovo & Galata	
8.2	Server Operating System (COTS) for RSC servers and Monitoring and Control Equipment	SOW Ann.-A Sect. 5 ; 6 and Ann.-B		2				EDC + 58 weeks	Gorna Traka & Asparuhovo & Galata	

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
8.3	MPS /RSC Workstations Operating System (COTS)	SOW Ann.-A Sect. 5 ; 6 and Ann.-B		7				EDC + 58 weeks	Gorna Traka & Asparuhovo & Galata	
8.4	Network Operating System	SOW Ann.-A Sect. 5 ; 6 and Ann.-B		1				EDC + 58 weeks	Gorna Traka & Asparuhovo & Galata	
8.5	Office Application (COTS) for MPS and RSC workstations	SOW Ann.-A Sect. 5 ; 6 and Ann.-B		7				EDC + 58 weeks	Gorna Traka & Asparuhovo & Galata	
8.6	Project Management Applications (COTS) for local RSC workstations	SOW Ann.-A Sect. 5 ; 6 and Ann.-B		2				EDC + 58 weeks	Gorna Traka & Asparuhovo & Galata	
8.7	Security Application for MPS/RSC Servers (COTS)	SOW Ann.-A Sect. 5 ; 6 and Ann.-B		4				EDC + 58 weeks	Gorna Traka & Asparuhovo & Galata	
8.8	Security Application for MPS/RSC Workstations and Monitoring and Control Equipment (COTS)	SOW Ann.-A Sect. 5 ; 6 and Ann.-B		7				EDC + 58 weeks	Gorna Traka & Asparuhovo & Galata	
8.9	MPS Database Management Software (COTS) (server and work stations)	SOW Ann.-A Sect. 5 ; 6 and Ann.-B		2				EDC + 58 weeks	Gorna Traka & Asparuhovo & Galata	
8.10	RSC Database Management SW (COTS) (server and work station)	SOW Ann.-A Sect. 5 ; 6 and Ann.-B		2				EDC + 58 weeks	Gorna Traka & Asparuhovo & Galata	
8.11	Adaptation of ACMS SW	SOW Ann.-A Sect. 5 ; 6 and Ann.-B		1				EDC + 58 weeks	Gorna Traka & Asparuhovo & Galata	
8.~~14~~ 12	Adaptation of RSC SW	SOW Ann.-A Sect. 5 ; 6 and Ann.-B		1				EDC + 58 weeks	Gorna Traka & Asparuhovo & Galata	
	TOTAL CLIN 8									
9	**SECURITY CERTIFICATION AND ACCREDITATION**					Not Separately Priced	Not Separately Priced			
9.1	Security Accreditation Plan (SAP)	SOW 2.3; Section 5; 13.16	E + P	1 + 1				EDC + 13 weeks	Purchaser's premises	

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
9.2	Security Test & Verification Plan (STVP)	SOW 2.3; Section 5; 13.16	E + P	1 + 1				EDC + 13 weeks	Purchaser's premises	
9.3	System Security Requirements Statement (SSRS)	SOW 2.3; Section 5; 13.16	E + P	1 + 1				3 weeks prior to CDR Meeting	Purchaser's premises	
9.4	System Interconnection Security Requirements Statement (SISRS)	SOW 2.3; Section 5; 13.16	E + P	1 + 1				3 weeks prior to CDR Meeting	Purchaser's premises	
9.5	Security Operating Procedures (SECOPS)	SOW 2.3; Section 5; 13.16	E + P	1				EDC + 64 weeks (before FSA)	Purchaser's premises	
9.6	Security Risk Assessment (SRA)	SOW 2.3; Section 5; 13.16	E+P	1+1				3 weeks prior to CDR Meeting	Purchaser's premises	
9.7	Security Certification and Accreditation	SOW 2.3; Section 5; 13.16; SOWAnnex -E	E + P	1				EDC + 64 weeks (before FSA)	Purchaser's premises	
	TOTAL CLIN 9									
	TOTAL BID PRICE (BASIC CONTRACT) - GRAND TOTAL (CLINs 1 to 9 and warranty) - EVALUATED	!	!	!	!	!	!	!	!	
	OPTIONAL CLINS (Contract Options)									
10	**CONTRACTOR LOGISTIC SUPPORT**					Not Separately Priced	Not Separately Priced			
10.1	**FOR THE FIRST THREE YEAR PERIOD**					Not Separately Priced	Not Separately Priced			
10.1.1	Yearly Full CLS Services	SOW 8.7; 8.8; Book III		3				NOTE 3 / 4	As required	
10.1.2	Yearly post design services	SOW 8.7; 8.8; Book III		3				NOTE 3	As required	

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
10.1.3	Yearly provision of spare parts	SOW 8.7; 8.8; Book III		3				NOTE 3	As required	
10.1.4	Yearly documentation covering on-site intervention activities and BRASS ROU repair	SOW 8.7; 8.8; Book III		3				NOTE 3	As required	
10.1.5	Yearly provision of non-COTS software and newly developed source code	SOW 8.7; 8.8; Book III		3				NOTE 3	As required	
10.1.6	Yearly Repair On Need services	SOW 8.7; 8.8; Book III		3				NOTE 3	As required	
10.2	**FOR THE SECOND THREE YEAR PERIOD**					Not Separately Priced	Not Separately Priced			
10.2.1	Yearly Full CLS Services	SOW 8.7; 8.8; Book III		3		Not Separately Priced	Not Separately Priced			
10.2.2	Yearly post design services	SOW 8.7; 8.8; Book III		3		Not Separately Priced	Not Separately Priced			
10.2.3	Yearly provision of spare parts	SOW 8.7; 8.8; Book III		3		Not Separately Priced	Not Separately Priced			
10.2.4	Yearly documentation covering on-site intervention activities and BRASS ROU repair	SOW 8.7; 8.8; Book III		3		Not Separately Priced	Not Separately Priced			
10.2.5	Yearly provision of non-COTS software and newly developed source code	SOW 8.7; 8.8; Book III		3		Not Separately Priced	Not Separately Priced			
10.2.6	Yearly Repair On Need services	SOW 8.7; 8.8; Book III		3		Not Separately Priced	Not Separately Priced			
10.3	**FOR THE THIRD THREE YEAR PERIOD**					Not Separa	Not Separatel			

CLIN	DESCRIPTION	SOW REFERENCE	Unit (Copies) E=Elec P=Paper	QTY	CURRENCY	UNIT PRICE	TOTAL PRICE	DELIVERY / FINISH DATE - WEEKS AFTER EDC	DELIVERY SITE	COMMENTS
						tely Priced	y Priced			
10.3.1	Yearly Full CLS Services	SOW 8.7; 8.8; Book III		3		Not Separately Priced	Not Separately Priced			
10.3.2	Yearly post design services	SOW 8.7; 8.8; Book III		3		Not Separately Priced	Not Separately Priced			
10.3.3	Yearly provision of spare parts	SOW 8.7; 8.8; Book III		3		Not Separately Priced	Not Separately Priced			
10.3.4	Yearly documentation covering on-site intervention activities and BRASS ROU repair	SOW 8.7; 8.8; Book III		3		Not Separately Priced	Not Separately Priced			
10.3.5	Yearly provision of non-COTS software and newly developed source code	SOW 8.7; 8.8; Book III		3		Not Separately Priced	Not Separately Priced			
10.3.6	Yearly Repair On Need services	SOW 8.7; 8.8; Book III		3		Not Separately Priced	Not Separately Priced			
	TOTAL CLIN 10 - UNEVALUATED OPTION									
		-	-	-	-	-	-	-	-	

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BOOK II PART I SECTION 2

SCHEDULE OF MAJOR PERFORMANCE MILESTONES

Payment Milestone	BRASS BGR Payment Performance Milestones	% Value of the Contract	Delivery NLT (not later than) (EDC +)	CLIN/ SOW reference
1	Acceptance of Site Survey Reports	5 %	6 weeks	CLIN 4.1
2	Acceptance of Project Implementation Plan (PIP) and Site Preparation Data Package (SPDP)	10 %	12 weeks	CLIN 1.1
3	Acceptance of Critical Design Review (CDR) documentation, including Site Installation Specifications (SIS)	10 %	24 weeks	CLIN 1.2.1, 1.4.5
4	Acceptance of Factory Acceptance Testing (FAT) Report	15 %	44 weeks	CLIN 2.1
5	Acceptance of System Acceptance Test (SAT) Report and Documentation	35%	58 weeks	CLIN 2.2, 2.3, 2.4
6	Final System Acceptance (FSA) including reports and documentation	15 %	64 weeks	CLIN 2.5, 2.6, 2.7
7	End of Warranty	10 %	FSA + 1 year	CLIN 1.5

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BOOK II – PROSPECTIVE CONTRACT

PART II - CONTRACT SPECIAL PROVISIONS

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ARTICLE 1. ALTERATIONS, MODIFICATIONS AND DELETIONS OF THE NCI AGENCY CONTRACT GENERAL PROVISIONS

1.1. CLAUSE 11- SECURITY is supplemented by ARTICLE 11 – SECURITY AND CONTRACT SECURITY CLASSIFICATION.

1.2. CLAUSE 13 – PURCHASER FURNISHED PROPERTY is supplemented by ARTICLE 17 – PURCHASER FURNISHED PROPERTY/EQUIPMENT.

1.3. CLAUSE 19 – PRICING OF CHANGES, AMENDMENTS AND CLAIMS is augmented by ARTICLE 9 PRICING OF CHANGES, AMENDMENTS AND CLAIMS.

1.4. CLAUSE 21 - INSPECTION AND ACCEPTANCE OF WORK is supplemented by ARTICLE 7 - INSPECTION AND ACCEPTANCE.

1.5. CLAUSE 22 - INSPECTION AND ACCEPTANCE OF DOCUMENTATION is supplemented by ARTICLE 15 - REVIEW AND ACCEPTANCE OF DOCUMENTATION.

1.6. CLAUSE 24 – OWNERSHIP AND TITLE is supplemented by ARTICLE 18 – OWNERSHIP AND TITLE.

1.7. CLAUSE 25 – INVOICES AND PAYMENT is supplemented by ARTICLE 10 – INVOICES AND PAYMENT.

1.8. CLAUSE 27 - WARRANTY OF WORK is augmented by ARTICLE 19 – BRASS SYSTEM WARRANTY.

1.9. CLAUSE 30.2 – CONTRACTOR BACKGROUND IPR and CLAUSE 30.5 SUBCONTRACTOR IPR is supplemented by the Annex 2 “CONTRACTOR BACKGROUND IPR” and Annex 3 “List of Subcontractor IPR”.

1.10. CLAUSE 30.3 – FOREGROUND IPR is augmented by ARTICLE 26 – PURCHASER RIGHTS IN TECHNICAL DATA AND COMPUTER SOFTWARE.

1.11. CLAUSE 38 - LIQUIDATED DAMAGES is modified by ARTICLE 24 - LIQUIDATED DAMAGES.

ARTICLE 2. SCOPE OF WORK

2.1 The NATO Communication and Information Agency (NCI Agency) has been authorised to act as a Procurement Agent on behalf of the Host Nation Bulgaria and is vested with the acquisition authority.

2.2 The Site readiness responsibility lies with the HN Bulgaria. The Purchaser shall officially inform the Contractor on behalf of the HN that the Sites are ready.

2.3 The scope of this Contract is to procure the Bulgarian Navy Surface High Frequency (HF) maritime communication system, Broadcast Maritime Rear Link (MRL) and Ship Shore (BRASS) to provide adequate HF capability, monitoring and control facilities, increasing of management flexibility and communications availability, according to the requirements and standards established for BRASS Baseline.

2.4 This Contract encompasses procurement, design, manufacturing, delivery of equipment, installation, integration, testing, acceptance and ILS support as defined in the Statement of Work (SOW) of the Contract and Annexes.

2.5 The Contractor shall provide the supplies and services indicated in the Schedule of Supplies and Services (SSS) and further described in the SOW and Annexes, and perform the work described in the SOW and Annexes for the implementation of the above stated project.

2.6 The Republic of Bulgaria is the Host Nation for this project and has the overall financial authority. The NCI Agency has been authorised to act as a Procurement Agent on behalf of the Host Nation and is vested with the acquisition authority.

2.7 The definition of "Purchaser" for the purposes of this Contract is therefore modified from the definition of Contract General Provisions Clause 2 "Definitions of Terms and Acronyms" to "NATO C&I Organisation, as represented by the General Manager, NCI Agency, acting on behalf of the Host Nation Bulgaria. The Purchaser is the legal entity who awards and administers the Contract and stands as one of the Contracting Parties. The definition of Purchaser encompasses any legal successor to the NATO C&I Organisation and its designated representative, as may be agreed by the NATO member Nations."

ARTICLE 3. COMPREHENSION OF CONTRACT AND SPECIFICATIONS

3.1 The Contractor warrants that he has read, understood and agreed to each and all terms, clauses, specifications 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.

3.2 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 that 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.

3.3 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.

3.3.1 Based upon impossibility of performance, defective, inaccurate, impracticable, insufficient or invalid specifications, implied warranties of suitability of such specifications; or,

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

b. Notwithstanding the "Changes" clause or any other clause of the Contract, the Contractor hereby agrees that no changes to the aforesaid specifications that 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 firm 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 SSS.

ARTICLE 4. TECHNICAL DIRECTION

4.1 The Contract will be administered by the NATO C&I Agency, on behalf of the Host nation Bulgaria in accordance with the Article 12 of these Contract Special Provisions entitled "Contract Administration".

4.2 At each site of efforts, the Purchaser may assign Technical Representatives who will monitor work in progress and provide Contractor personnel with guidance (within the general scope of work) in performance of their duties and working schedule. The Technical Representatives do not have the authority to change the terms of the Contract or to increase the overall cost, duration or level of effort of the Contract. The Technical Representatives do have the authority to interpret the Statement of Work and provide direction to the Contractor personnel in performance of their duties.

4.3 In case the Contractor believes that any technical direction received from the Technical Representative constitutes a change to the terms, conditions and/or specifications of the Contract, he shall immediately inform in writing the NCI Agency Contracting Authority, who will either confirm or revoke such direction within two weeks after notification by the Contractor. If such direction is confirmed as a change, this change will be formalised by written amendment to the Contract pursuant to the clause "Changes" of NCI Agency Contract General Provisions.

4.4 Failure of the Contractor to notify the NCI Agency Contracting Authority of direction constituting change of the Contract will result in a waiver of any claims pursuant to such change.

ARTICLE 5. DIFFERING SITE CONDITIONS

5.1 The Contractor confirms having had the opportunity to:

a) verify the drawings and data provided, and

b) having had the opportunity to visit the sites and ascertain the working and installation conditions at the installation sites, and

c) ask questions to satisfy themselves with accuracy of site information provided.

5.2 Considering the above, the Contractor shall have no recourse to claims of additional work and cost in connection with activities performed under this Contract, except in such cases as additional effort and cost is occasioned by circumstances that could not have reasonably been foreseen (e.g., buried obstacles that are not shown on any drawings furnished), or could have not been discovered by further investigation during the pre-award bidding process through the conducted site surveys or by clarifications submitted to and answered by the Purchaser.

5.3 If the Contractor encounters a situation that, consistent with this Article, would be the cause of unforeseen additional effort and cost, it shall immediately give written notice to the NCI Agency Contracting Authority of the existence of:

a) subsurface or latent physical or technical conditions at the system installation site which differ materially from those indicated in this Contract, or in any Purchaser provided information; or,

b) unknown physical or technical conditions at the system installation site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the Contract.

5.4 The Purchaser shall promptly investigate the alleged physical or technical site conditions after receiving written notice from the Contractor. If the Purchaser confirms that physical or technical conditions do materially differ and believes that the facts and circumstances presented justify an increase in the Contractor's cost, or of the time required for performing any part of the Work under this Contract, whether or not changed as a result of the differing conditions, the Contractor shall be so informed and may then submit to the Purchaser a proposal for equitable adjustment. The Contract shall then be amended in writing to reflect any equitable adjustment agreed-to by the Parties. The equitable adjustment may be made in the Contract price or delivery schedule or both and in other provisions of the Contract as may be affected and shall represent full and final settlement of the differing site conditions raised by the Contractor.

5.5 In the event that the Contractor's request for equitable adjustment under this Article is rejected by the Purchaser, the Purchaser shall reduce its decision to writing and mail or otherwise furnish a copy thereof to the Contractor.

5.6 No request by the Contractor for an equitable adjustment under this Article shall be allowed unless the Contractor has given written notice to the Purchaser of the existence of such differing physical or technical conditions at the latest 10 calendar days from the day on which the Contractor discovered the differing physical or technical conditions or should have discovered the differing physical or technical conditions, whichever is the earliest.

5.7 No request by the Contractor for an equitable adjustment to the Contract for differing physical or technical conditions at the installation site shall be allowed if made after final payment or acceptance (either provisional or final) under this Contract.

5.8 The Contractor shall have no recourse to claims for additional effort and cost for technical detail and/or information previously notified by the Purchaser during the pre-award phase as not available prior to Contract Award.

5.9 The Contractor shall note that instructions or requests to perform additional tasks other than what is set forth in the SOW shall not be honoured except as such instructions are issued by the Purchaser's Contracting Authority.

ARTICLE 6. CARE AND DILIGENCE FOR PROPERTY

6.1 The Contractor shall use reasonable care to avoid damaging buildings, equipment and vegetation (such as trees, shrubs and grass) on the work site. If the Contractor damages any such buildings, equipment or vegetation (such as trees, shrubs and grass) on the work site, he shall replace the damage as directed by the Purchaser or the HN Bulgaria and at no expense 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. The Parties will conduct a pre and post inspections before and after the Delivery of HW on site and installation activities.

6.2 The Purchaser and the HN Bulgaria will exercise due care and diligence for the Contractor's furnished equipment and materials on site. The Purchaser and the HN Bulgaria will, however, not assume any liability except for gross negligence and wilful misconduct on the part of the Purchaser's and/ or HN Bulgaria personnel or agents.

6.3 The Contractor shall, at all times, keep the site area, including storage areas used by the Contractor, free from accumulations of waste, material or rubbish and remove any rubbish from the premises and all tools, scaffolding equipment and materials not the property of the Purchaser and / or HN Bulgaria and leave the site area and its surroundings in a clean and neat condition.

ARTICLE 7. INSPECTION AND ACCEPTANCE

7.1 Clause 21 of the NCI Agency Contract General Provisions is supplemented as follows:

7.1.1 The supplies and services to be provided by the Contractor's personnel under this Contract shall conform to the highest professional and industry standards and practices. Inspection of the services provided will be made by the Purchaser's Technical representative or another authorized designee in accordance with the specifications in Part IV - Statement of Work. Services performed by the Contractor that do not conform to the highest professional and industry standards may result in the Purchaser requesting that such work be performed again at no increase in the price of the Contract. Repeated instances of work performed that fails to meet the standards and practices may result in termination of the Contract for Default.

7.2 Under the terms of this Contract, Acceptance will be made in three (3) steps:

7.2.1 Step I: System Design, Development and Factory Acceptance Test (FAT) phase,

7.2.2 Step II: System Acceptance Test (SAT) Report phase,

7.2.3 Step III: Final System Acceptance (FSA) phase at which time the Purchaser will take Title and Warranty will start.

ARTICLE 8. CONTRACTOR'S COTS RESPONSIBILITY

8.1 The Contractor shall monitor changes and/or upgrades to Commercial Off The Shelf (COTS) software to be delivered or utilised under subject Contract.

8.2 The Contractor shall report and notify the Purchaser of any proposed changes in the commercial off the shelf software to be delivered or utilised. Such notification shall provide an assessment of the changes and the impact to any other items to be delivered under this Contract.

8.3 When software version numbers are specified in the Schedule of Supplies and Services, the Purchaser must approve in writing any change in the versions that will be delivered or utilised under subject Contract.

8.4 When hardware references (part number or brand reference, model) are specified in the Statement of Work or Contractor's proposal, the Purchaser must approve in writing any change that will be delivered or utilised under subject Contract.

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

8.6 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) shall 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 clause.

8.7 The Contractor will provide all the software Licences required for system operation until the expiry of the warranty period.

8.8 The Contractor will provide to the Purchaser all passwords needed to operate and administrate the systems during SAT.

ARTICLE 9. PRICING OF CHANGES, AMENDMENTS AND CLAIMS

9.1 Clause 19 of the NCI Agency's Contract General Provisions is supplemented as follows:

9.1.1 Except as otherwise provided for in this Contract, Contractor's price quotations for the changes, modifications, etc., shall be provided at no cost to the Purchaser and shall have a minimum validity period of six (6) months from submission.

9.1.2 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. The Contractor shall be bound by the listed rates for the duration of the Contract.

ARTICLE 10. INVOICES AND PAYMENT

10.1 CLAUSE 25 – INVOICES AND PAYMENT of NCI Agency Contract General Provisions is supplemented by the following.

10.2 The Contractor shall submit to the Contracting Authority an invoice prepared in accordance with Clause 25 of the General Provisions of this Contract entitled "Invoices and Payment" upon full successful achievement of the Payment Milestones listed in paragraph 10.10 below. The invoice shall be calculated on the basis of the total price of the Basic Contract excluding the exercise of any Options. The Contractor shall submit the respective invoice following the written confirmation of the Purchaser that the respective milestone has been achieved.

10.3 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 SSS. The total firm fixed price is an overall price including all expenses. No payment shall be made with respect to undelivered supplies, works not performed and/or services not rendered.

10.4 Invoice(s) shall be prepared for each Payment Milestone achieved in accordance with the Milestones Payment Schedule as indicated paragraph 10.10 below. Therefore an invoice shall correspond to the successful completion of a Payment Milestone, and shall contain the required documented evidence of the successful completion of each item of that Payment Milestone, including all required testing, and receipt of the Purchaser's written acceptance of the associated CLIN(s).

10.5 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.

10.6 Invoices in respect of any Work or services shall be contain all of the elements listed below:

a) Contract number CO-13733-BRASS-BGR;

b) Contract Amendment number (if any);

c) Purchaser's Purchase Order number;

d) The identification of the performance rendered in terms of Contract Line Item Numbers (CLINs) as per paragraph 10.10 below;

e) Extended totals (exclusive of taxes and duties for which relief is available). Details of Bills of Lading or Freight Warrant numbers and weight of shipment shall be identified on each invoice as appropriate; and

f) Bank account details for international wire transfers (SWIFT, BIC, IBAN).

10.7 Any invoices that do not meet the above criteria will be rejected by the Purchaser.

10.8 All Invoices shall be addressed to the NCI Agency - FMU:

NCI Agency Financial Management Unit (FMU)

Boulevard Léopold III

B-1110 Brussels, Belgium

10.9 The Contractor shall notify the Contracting Authority by e-mail at each invoice submission to the address above.

10.10 The seven (7) Payment milestones are as follows:

PROJECT SCHEDULE AND RELATED PAYMENT MILESTONES:

Payment Milestone	BRASS BGR Payment Performance Milestones	% Value of the Contract	Delivery NLT (not later than) (EDC +)	CLIN/ SOW reference
1	Acceptance of Site Survey Reports	5 %	6 weeks	CLIN 4.1
2	Acceptance of Project Implementation Plan (PIP) and Site Preparation Data Package (SPDP)	10 %	12 weeks	CLIN 1.1
3	Acceptance of Critical Design Review (CDR) documentation, including Site Installation Specifications (SIS)	10 %	24 weeks	CLIN 1.2.1, 1.4.5
4	Acceptance of Factory Acceptance Testing (FAT) Report	15 %	44 weeks	CLIN 2.1
5	Acceptance of System Acceptance Test (SAT) Report and Documentation	35%	58 weeks	CLIN 2.2, 2.3, 2.4
6	Final System Acceptance (FSA) including reports and documentation	15 %	64 weeks	CLIN 2.5, 2.6, 2.7
7	End of Warranty	10 %	FSA + 1 year	CLIN 1.5

10.11 The Purchaser shall not bear any cost relating to financial guarantees that the Contractor is required to provide under this Contract. The Purchaser is released from any interest resulting from any reason whatsoever.

10.12 If the Contractor foresees that Delivery of the BRASS BGR System may be accelerated, the Contractor shall notify the Purchaser and the Purchaser may concur with such early delivery(ies). In any case the Ceontractor shall meet its site readiness and inspection and acceptance obligations. The Purchaser reserves the right to refuse such requests for early delivery and insist the Contract delivery schedule be maintained in an unmodified form.

ARTICLE 11. SECURITY AND CONTRACT SECURITY CLASSIFICATION

11.1 CLAUSE 11 - SECURITY of the NCI Agency Contract General Provisions is supplemented by the following.

11.2 The overall security classification of this Contract is NATO UNCLASSIFED. However the Contract will be considered “NATO RESTRICTED” when Part IV SOW is included.

11.3 The Contractor shall furnish the supplies and services in accordance with the agreed terms, conditions and specifications set forth herein.

11.4 All Contractor and Sub-Contractor(s) personnel working on this Contract, visiting or working at NATO premises and/or HN Bulgaria installations and sites in connection with this Contract, shall have a security clearance of “NATO SECRET” confirmed to the Purchaser by the relevant National Security Authority.

11.5 It is the responsibility of the Contractor to ensure that its 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. Contractor and its sub-Contractor(s) are advised that the personnel security clearance 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. Failure to obtain or maintain the required level of security clearance for Contractor and Sub-Contractor personnel for the period of performance of this Contract shall not be grounds for any delay in the scheduled performance of this Contract, and may be grounds for termination under the Clause of this Contract entitled “Termination for Default”.

11.6 Contractor personnel without the required clearance, confirmed by the appropriate national security authority and transmitted to the cognizant Purchaser security officer at least fourteen (14) calendar days prior to any site visit, will be denied access to any of the HN or Purchaser premises/sites. 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 and/or a determination of Termination for Default by the Purchaser.

11.7 The Contractor's Key Personnel shall possess a valid passport or ID Card and is required to maintain its validity for duration of the Contract.

11.8 The Contractor's Key Personnel shall sign the Annex 1 to Contract Special Provisions (Non Disclosure Declaration) before beginning any work within this Contract.

11.9 All NATO CLASSIFIED material entrusted to the Contractor shall be handled and safeguarded in accordance with the applicable security regulations. The Contractor shall be required to possess a Facility clearance of "NATO SECRET" for those sites in which it intends to handle and store NATO classified material in the conduct of work under this Contract.

11.10 At the end of the Contract, during Final System Acceptance, the Contractor shall deliver all the documentation and information collected and generated in support of this Contract to the Purchaser. This includes a certificate that no copies are retained at the Contractor's facilities. Additionally, any equipment that had been connected to a classified network during this Contract shall be returned to the Purchaser (i.e. laptops, USB-keys, hard disks, etc).

11.11 Any attendant delay in the Contract resulting from the Purchaser denying access to NATO and/ or HN Bulgaria sites to Contractor personnel for security clearance reasons, shall not be the basis for excusable delay under the terms of the Contract. 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.

11.12 In the performance of all works under this Contract it shall be the Contractor's responsibility to ascertain and comply with all applicable NATO and National security regulations as implemented by the HN Bulgaria and by the local Headquarters.

11.13 The Contractor shall note that there are restrictions regarding the carriage and use of electronic device (e.g. laptops, cell/mobile telephones) in Purchaser and HN Bulgaria secured locations. The Contractor shall be responsible for satisfying and obtaining from the appropriate site authorities the necessary clearance to bring any such equipment into the facility.

ARTICLE 12. CONTRACT ADMINISTRATION

12.1 All notices and communications between the Contractor and the Purchaser shall be written and conducted in English. Contract modifications will only be valid when received in writing from the NCI Agency Contracting Authority as detailed in Clause 3 of the NCI Agency Contract General Provisions, entitled "Authority".

12.2 Formal letters and communications shall be personally delivered, sent by mail, registered mail, courier or other delivery services, to the official points of contact cited in this Contract. Telefax may be used to provide an advance copy of a formal letter or notice that shall subsequently be delivered through the formal communications means.

12.3 Informal notices and informal communications may be exchanged by any other communications means including telephone and e-mail, where the classification of the information permits such mean of communication. These communications must be confirmed through the formal means set forth above to be considered to be formal communication.

12.4 Any discussion, negotiation with Contractor representatives shall be recorded in Minutes which shall be signed by authorised representatives of both Contractor and Purchaser. All minutes are considered to be a summary record of discussions and specific actions to be undertaken by the parties as a result of meetings. If the contents of these minutes fall within the scope of the Contract or specifications, then no amendment action will be initiated by the Purchaser. If, however, it is considered by either party that certain discussions and decisions have taken place at meetings that fall outside the scope of these documents, then this fact shall be recorded at the time and a formal contractual amendment will be necessary prior to any action proceeding, as per Clause 3 of the NCI Agency Contract General Provisions.

12.5 All notices and communications will be effective upon receipt.

12.6 Official points of contact are:

12.7 CONTRACTOR: (To be completed at Contract Award)

12.8 PURCHASER:

NCI Agency

Acquisition/ASG

Boulevard Léopold III

B-1110 Brussels

Belgium

Attn: Viktorija Navikaitė, Contracting Officer

Tel: +32 (0) 2 707 8210

Fax: +32 (0) 2 707 87 70

E-mail: viktorija.navikaite@ncia.nato.int

12.9 Copies of all correspondence shall be sent at the same time to the Project Manager at his address below. The Project Manager will be the main point of contact for technical issues related to day-to-day work, which do not imply any contractual impact.

PM:

Tel:

Fax:

E-mail:

ARTICLE 13. KEY PERSONNEL

13.1 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 with valid NATO SECRET Clearances are as follows:

Key Personnel	**Name**	**Function within organisation**
Project Manager		
Deputy Project Manager		
Technical Lead		
[other if necessary]		
……		
……..		

13.2 In order to meet the Contract schedule it is expected that key personnel will remain fully dedicated to the project during the Contract period. However, if the Contractor deems that some of the key personnel may not be fully required for the complete Contract period; such personnel may be allocated to other work at the risk of the Contractor. It shall be noted that the Purchaser will not consider any such allocations/unavailability as reasons for readjustment of Contract timelines/scope.

13.3 In cases 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 one month of the date of knowledge of the prospective vacancy and offer a substitute with equivalent qualifications with no additional costs for the Purchaser. 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. The Purchaser will confirm any consent given to a substitution in writing through an Amendment to the Contract stating the effective date of change of personnel and only such written consent shall be deemed as valid evidence of Purchaser consent. Each of the replacement personnel will also be required to sign the Annex to Special Terms and Conditions "NON DISCLOSURE DECLARATION "before beginning of work and above-mentioned amendment signature. The new key personnel shall be of the same level of skills and experience that the one that is replaced. The Contractor shall ensure that the replacement does not impact the performance of any on going work.

13.4 However, the Purchaser may consider any application raised by the Contractor for changes in the key members identified in paragraph 13.1 above provided that all the following conditions are met:

13.4.1 The Contractor shall give a minimum of 1 month notice to the Purchaser,

13.4.2 The Contractor shall guarantee an overlap/handover period of minimum two (2) weeks at no additional cost to the Purchaser,

13.4.3 The replacement personnel meets the conditions related to the skill and experience requirements of the key members identified in 13.1 above,

13.4.4 The corporate knowledge of the team is preserved after the replacement, that is, proposals for multiple proximate substitutions will not be entertained.

13.5 The Purchaser may, for just cause, require the Contractor to remove his employee. Notice for removal will be given to the Contractor by the Purchaser in writing and will state the cause justifying the removal. The notice will either demand substitution for the individual involved and/or contain a notice of default and the remedies to be sought by the Purchaser. The contractor shall replace the individual(s) with other personnel having the required competences and experience, within the period of a month, at no additional costs.

13.6 Delays by the Contractor in replacements exceeding two weeks and causing a lower level of Contractor effort and/or performance will be penalised in accordance with Article 24 below, “Liquidated Damages.”

13.7 All key personnel provided under this Contract must meet the minimum qualifications cited in the attached SOW.

13.8 If the Contractor is unable to replace the lost personnel within a reasonable time, 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 Clause 38 of the NCI Agency Contract General Provisions entitled “Termination for Default”, for redress of the situation.

ARTICLE 14. ELIGIBLE COUNTRIES

14.1 The Contractor may issue sub-contracts to firms and purchase from qualified vendors in following twenty five (25) NATO Participating Countries (excluding France, Albania and Croatia). These 25 Nations are namely (in alphabetical order): BELGIUM, BULGARIA, CANADA, CZECH REPUBLIC, DENMARK, ESTONIA, 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.

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

14.3 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 NATO Participating Country.

14.4 The intellectual property rights to all design documentation and related system operating software shall reside in NATO, on behalf of the HN Bulgaria, and no license fees, or royalty charges shall be paid by the Contractor to firms, individuals or governments other than within the NATO Participating Countries.

ARTICLE 15. REVIEW AND ACCEPTANCE OF DOCUMENTATION

15.1 CLAUSE 22 - INSPECTION AND ACCEPTANCE OF DOCUMENTATION of NCI Agency Contract General provisions is supplemented by the following.

15.2 Unless otherwise specified in the Statement of Work:

15.3 Upon delivery of the Draft Deliverable items, the Purchaser will have a period of fifteen (15) working days to review the items. 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 within the Scope of Work. When applicable, a presentation of the deliverable item including the Purchaser's comments will be made by the Contractor to the Purchaser, at a time which coincides with a progress meeting.

15.4 During the review, if the specific Item requires proposal of dates for delivery or reviews, the Purchaser will either accept or adjust the proposed dates.

15.5 Within two (2) weeks after receipt of the Purchaser's comments (and associated progress meeting if appropriate), the Contractor shall incorporate changes, revisions and corrections required by the Purchaser and present the revised deliverable in Final Form to the Purchaser for inspection in accordance with the delivery dates specified in the Schedule or approved by the Purchaser.

15.6 The Contractor shall not have the right to ask for additional periods if the delivered draft is considered not satisfactory by the Purchaser and therefore requires many changes and/or corrections.

15.7 The Purchaser has the right to reject non-conforming deliverables. The Purchaser, in addition to any other rights or remedies provided by law, or under the provisions of this Contract, shall have the right to require the Contractor at no increase in Contract price, to correct or replace non-conforming work, and in accordance with a reasonable delivery schedule as may be agreed by the Purchaser and the Contractor following the receipt of the Purchaser's notice of defects or non-conformance.

15.8 The acceptance by the Purchaser of the Contractor's 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 or proposed implementation by the Purchaser and does not relieve the Contractor of the obligation to meet the schedule and the performance requirements of this Contract in the event that the design eventually proves to be non-compliant in factory or Site testing.

ARTICLE 16. APPLICABILITY OF STANDARDS

16.1 The Contract invokes a variety of Standard NATO Agreements (STANAGS) and Military and former Standards (MIL-STDs). While these are contractually binding reference documents, there are national and international standards that are considered to be equivalent and are cited as such within these documents. Where there exists a national or international standard that is not specifically referenced in the STANAGs or MIL-STDs as being equivalent, the Contractor may propose to utilise such a standard if he can demonstrate to the satisfaction of the Purchaser that such a standard is equivalent to the STANAG or MIL-STD in question. The Purchaser, however, reserves the right to deny such a request and demand performance in accordance with the standard cited in the Contract.

ARTICLE 17. PURCHASER FURNISHED PROPERTY/EQUIPMENT

17.1 Clause 13 “Purchaser Furnished Property” of the NCI Agency General Provisions is supplemented by the following:

17.1.1. The term "Purchaser Furnished Property/Equipment" as used in this Clause refers to items of equipment, material or property furnished by the Purchaser to the Contractor that may be subject to overhaul, repair, modification, test, embodiment or other work as specified in the Contract to be performed by the Contractor, as listed in SOW paragraph 3.4.2.

17.1.2. The Contractor will have no right for any claims in reference to a delay in the Purchaser's confirmation of site readiness and PFE availability, as long as the delay does not exceed ninety (90) calendar days from the declared availability dates (SOW paragraph 3.4.2).

ARTICLE 18. OWNERSHIP AND TITLE

18.1 Clause 24 “Ownership and Title” of the NCI Agency Contract General Provisions is supplemented by the following.

18.2 The Title and Risk of Loss or Damages to all delivered/installed equipment, software (including source code) for the BICC Software, and documentation covered by this Contract shall pass to and vest with the Purchaser upon notification of Final System Acceptance (FSA) as defined in the SOW.

18.3 The Contractor shall be responsible for the equipment on sites until FSA.

ARTICLE 19. BRASS SYSTEM WARRANTY

19.1. CLAUSE 27 - WARRANTY OF WORK of NCI Agency Contract General Provisions is augmented by the following.

19.2. The Contractor shall provide a BRASS System Warranty delivered under this Contract, for a period of twelve (12) months after Purchaser confirmed FSA. Such Warranty shall cover all hardware, software and all services provided as part of this Contract. Until successful FSA, BRASS System hardware and software to be provided under this Contract shall be under the Contractor's responsibility.

19.3. Notwithstanding inspection and acceptance by the Purchaser or its appointed agents of supplies furnished under the Contract or any provision of this Contract concerning the conclusiveness thereof, the Contractor warrants for the total duration of the above referred period and covering all items of hardware and software, that:

a) all deliverables furnished under this Contract shall be free from defect and will conform with the specifications and all other requirements of this Contract; and,

b) the system will, under normal conditions, perform without errors which make it unusable; and

c) the preservation, packaging, packing and marking and the preparation for and method of, shipment of such supplies will conform to the requirements of this Contract.

19.4. During the BRASS System Warranty period, the Contractor shall perform in-depth analysis of failures of equipment and components and parts thereof, and functional performance failures to due sub-system or equipment group malfunctions. Such failures shall not be limited to hardware, but shall include failures due to application or embedded software.

19.5. Fault analysis results shall be provided to the Host Nation Bulgaria representative in writing within seven calendar days after its discovery, with the diagnosed causes reported along with recommendations for corrective actions, as appropriate. The resolution of defects remains the Contractors responsibility within the Warranty. The Contractor shall resolve all defects within 7 calendar days of their first being reported for those items that need not be returned to the Contractor's facility for service or repair. Items needing service or repair at the Contractor's facility shall be repaired/replaced and dispatched back to the Purchaser within 15 calendar days of their arrival at the Contractor's facility.

19.6. Transportation and handling charges for items returned under warranty claim to the Contractor will be the responsibility of the Contractor, as well as responsibility for such supplies, i.e. damage and loss that may occur during transportation under Warranty.

19.7. In the event of the Contractor's failure to repair or replace failed equipment within the timeframes expressed in this Article, the Purchaser will have the right, at its discretion, and having given the Contractor due notice, to:

a) remedy, or have remedied, the defective or non-conforming supplies, in both cases at the Contractor's expenses;

b) equitably reduce the Contract price; and/or

c) terminate for default that portion of the Contract relating to the defective work.

19.8. Repeated failure of the same equipment, component or part, as well as failures due to software malfunctions may be considered by the Host Nation Bulgaria to be evidence of latent defect in the subject equipment (and or its associated software). In such a case the HN Bulgaria may require the Contractor to redesign such elements of the system as may be necessary in order to correct the repeated failure, or to substitute the failed element with a more reliable version or functional equivalent thereof. Such redesign and/or substitution shall be tested, and if found appropriate, applied to all BRASS System.

19.9. Critical faults during the BRASS System Warranty period that take one of the BRASS Systems sites offline (except for normally scheduled downtime due to maintenance procedures) will have the result of extending the BRASS Warranty for all sites by the period for which the single BRASS site is offline. This period is determined by the entry of the critical failure in the BRASS System Manager's logbook until the time the BRASS System Manager makes the entry into the logbook that the BRASS System has been restored to full operation.

19.10. Such extension of the BRASS Systems Warranty period will not apply in cases where the Contractor can convincingly demonstrate that the critical failure was due to HN Bulgaria negligence or a wilful act on the part of HN Bulgaria personnel.

19.11. Corrective action required of the Contractor under the BRASS System Warranty also applies to errors or omissions in any delivered documentation which could not have reasonably been discovered prior to the Final System Acceptance under this Contract. Errors or omissions in delivered documentation shall not be considered a basis for extension of the BRASS System Warranty as set forth in paragraphs above, except as can be demonstrated that such error or omission was the cause of a critical system failure that caused a BRASS site to be offline.

ARTICLE 20. SUPPLEMENTAL AGREEMENT(S), DOCUMENTS AND PERMISSIONS

20.1 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 39 “Termination for Default” of the NCI Agency Contract General Provisions.

20.2 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 Parties 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.

ARTICLE 21. RESPONSIBILITY OF THE CONTRACTOR TO INFORM EMPLOYEES OF WORK ENVIRONMENT

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

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

ARTICLE 22. OPTIONS

22.1 The tasks identified in the Contract Schedule of Supplies and Services as Option are to be intended as options to be exercised by the Purchaser and at its sole discretion. The Purchaser shall have the right to exercise (in whole or in part) optional CLIN 10.1 any time during the performance of the Contract and up to the end of the warranty period at the unit prices listed in the Schedule of Supplies and Services. As the prices of optional CLIN 10.1 were not part of the evaluation for Contract award, at the time of exercise of the Options, the Purchaser shall have the right to renegotiate the prices on the basis of cost information to be provided by the Contractor as per the Contract conditions.

22.2 The Purchaser is not obliged to exercise the optional CLIN 10. The Contractor will be notified by the Purchaser after FSA in writing as to whether optional CLIN 10 will be exercised and in what combination.

22.3 Should the optional CLIN 10 be exercised, the Purchaser will increase the firm fixed price of the Contract via a formal Contract Amendment by the amount of the line items so exercised, or issue of a new contractual instrument (CLS contract).

22.4 In case the CLS option of the Contract is exercised by the Purchaser, the Performance Guarantee for the Contract that is normally valid until the end of the warranty period will be extended to the end of the CLS period unless a new Performance Guarantee for the CLS contract is provided by the Contractor.

22.5 In no event shall the Contractor engage in the performance of the Option or part thereof without the written consent of the Purchaser Contracting Authority.

22.6 The Purchaser will notify the Contractor of the intent to exercise the CLS Option not later than 60 days prior to the end of the warranty period for CLIN 10.1, and not later than 60 days prior to the commencement of each 3 year CLS Option periods under CLIN 10.2 and 10.3.

22.7 The First 3 Year Option CLIN 10.1 shall be based on Firm Fixed Prices established in Contract Part I SSS. The pricing for Option CLINS 10.2 and 10.3 shall be based on a price escalation formula. Upon the application of this formula the Option CLIN prices shall be fixed for the next 3 years.

22.8 The escalation rates for Option CLINs 10.2 and 10.3 are binding on both the Contractor and the Purchaser. The Purchaser will apply the escalation upon notifying the Contractor of the intent to exercise the follow on Option Period.

a) The stated revision shall be based on the evolution of the Labour Cost Indes in Belgium for NACE sections C to K - Index (2000=100) (LCI), as published by the Belgian Ministry of Economy, (http://www.statbel.fgov.be/indicators/home_en.asp)

b) The revised rates shall be obtained through the following formula:

P = Po * (0.2+0.8*L/Lo);

In which:

- P – Revised price to considered during the following 36 months;
- Po – Original Price of Option CLIN 10.1;
- L – LCI value registered in the 4th quarter of the year prior to the revisions;
- LO – LCI value registered at the effective date of the Contract.

22.9 The escalation rates for Option CLINs 10.2 and 10.3 are binding on both the Contractor and the Purchaser. The Purchaser will apply the escalation upon notifying the Contractor of the intent to exercise the follow on Option Period.

22.10 In addition to the optional CLIN 10 identified above, the Purchaser reserves the right to order any foreseeable or additional Contract tasks or deliverables, listed or not, either occasionally or at a further stage in the life of the project, which it deems necessary for the successful completion of the project. The additional tasks and/or deliverables shall be priced in using the "Summary Price" rates provided by the Contractor as part of its proposal and included in this Contract by reference.

22.11 Except as otherwise provided for in this Contract, Contractor's 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.

22.12 The Purchaser may, in writing, place an order for such additional tasks throughout the entire Contract period up until end of Warranty. Such an order may be placed within the framework of this Contract via the issuance of a Contract Amendment or be formulated via the issuance of a new contractual instrument.

ARTICLE 23. QUALITY ASSURANCE (QA) AND QUALITY CONTROL (QC)

23.1 The Contractor shall be responsible for the control of quality of all deliverables and associated Contractual products throughout the life-cycle of the Contract.

23.2 The QA Programme shall ensure that procedures are developed, implemented and maintained to adequately control the development, design, production, testing and configuration of all deliverables. The QA Programme shall be described in the QA Plan. The programme is subject to approval by the Purchaser, or its delegated representative(s). It shall be subject to review for adequacy, compliance and effectiveness. The overall QA Programme shall adhere to the provisions of AQAP-2110 and be consistent with the project philosophy of integrating Commercial-Off-The-Shelf (COTS) hardware and software as applicable.

23.3 When satisfied that the products and/or services provided by the Contractor are in conformance with the terms of this contract, a Certificate of Conformity (CoC) per Annex B to AQAP-2070 will be countersigned and stamped by the cognisant NATO Quality Assurance Representative(s) (NQAR(s)). The preparation of the CoC(s) shall be the responsibility of the Contractor.

23.4 CoC(s) shall be required for all quantities contained in each contract line item. Two (2) copies of the CoC(s) shall be submitted to the Purchaser.

ARTICLE 24. LIQUIDATED DAMAGES

24.1 CLAUSE 38 - LIQUIDATED DAMAGES of NCI Agency Contract General Provisions is modified by the following.

24.2 If the Contractor fails to deliver and obtain acceptance of the Supplies or to acceptably perform the services at the time specified in the Schedule of Supplies and Services (SSS) of this Contract or any 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 fixed and agreed liquidated damages of 1.0% of the associated payment set forth in Article 10 above, per each calendar day of delinquency in achieving the milestone.

24.3 Liquidated damages shall be payable to the Purchaser from the first calendar day of delinquency in delivery or failure to achieve the specified performance milestones, and shall accrue at the rate specified in paragraph 24.2 above to a maximum of ten per cent (10%) of the applicable payment for the line item in the Schedule of Supplies and Services and/or the applicable Performance Milestone. Cumulative assessed Liquidated Damages shall not exceed a total of ten per cent (10%) of the total value of the Contract. These liquidated damages shall accrue automatically and without any further notice being required.

24.4 The payment of “Liquidated Damages” shall not relieve the Contractor from the obligation to deliver the supplies or perform the services under this Contract.

24.5 The rights and remedies of the Purchaser under this Article are in addition to any other rights and remedies provided by law or under the Contract.

ARTICLE 25. PURCHASER RIGHTS IN TECHNICAL DATA AND COMPUTER SOFTWARE

25.1 CLAUSE 30.2 – CONTRACTOR BACKGROUND IPR and CLAUSE 30.5 SUBCONTRACTOR IPR of NCI Agency Contract General Provisions is supplemented by the Annexes 2 and 3 to the Contract Special Provisions.

25.2 CLAUSE 30.3 – FOREGROUND IPR of NCI Agency Contract General Provisions is augmented by the following.

25.3 Unless the Contractor has advised the Purchaser before Contract award on existing third parties or Contractor's rights on arising otherwise than by virtue of this Contract, and with due regard to national security regulations, all rights in the results of work undertaken by or on behalf of the Purchaser for the purposes of this Contract, including any technical data specifications, report, drawings, computer software data, computer programmes, computer databases, computer software, documentation including software documentation, design data, specifications, instructions, test procedures, training material produced or acquired in the course of such work and, in particular, all rights, including copyright therein, shall vest in and be the sole and exclusive property of the Purchaser.

ARTICLE 26. PATENT AND COPYRIGHT INDEMNITY

26.1 CLAUSE 29 – PATENT AND COPYRIGHT INDEMNITY of NCI Agency Contract General Provisions is augmented by the following.

26.2 The Contractor shall exclude from its 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 organisation.

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

ARTICLE 27. CONTRACTOR AND PURCHASER SYSTEM INSTALLATION RESPONSIBILITIES

27.1 In accordance with the provisions of SOW, the Contractor shall be responsible for the installation and integration of the equipment delivered under this Contract into a functional BRASS-System on site with its supporting systems and civil works implemented by the Contractor.

27.2 The Contractor shall be responsible for connecting, mounting, installing, integrating and cabling of the delivered equipment within the sites and at the interface with the National Defense Network (NDN) and at the interface with Power Supply System. The Contractor shall be responsible for connecting all the BRASS equipment with the requisite utility outlets.

ARTICLE 28. LIAISON WITH PURCHASER DURING SITE PREPARATION ACTIVITIES

28.1 The Contractor acknowledges that it has taken the steps reasonably necessary to ascertain the nature and location of the installation work, and that it has investigated and satisfied itself as to the general and local conditions that can affect the work or its cost, including uncertainties of weather, or similar physical conditions at the site and the character of equipment and facilities needed preliminary to and during work performance.

28.2 It is the responsibility of the Contractor to provide its installation requirements to the Purchaser by submitting the Site Preparation Data Package as stated in SOW, in order that these requirements are considered into the site preparation activities of the Purchaser and or HN Bulgaria. Failure to provide such information in complete and timely manner may lead to site preparation delays for which the Purchaser may hold the Contractor liable.

28.3 It is the responsibility of the Contractor to insure that its installation requirements have been incorporated into the final architectural and engineering drawings of each site or to document to the Purchaser where such drawings and plans are deficient.

ARTICLE 29. PERMITS AND RESPONSIBILITIES

29.1 The Contractor shall, without additional expense to the Purchaser, be responsible for obtaining any necessary licenses and permits, and for complying with Host Nation national, local and municipal laws, codes, regulations and standards applicable to the performance of the work. The Contractor shall be aware that, notwithstanding Clause 6 of the NCI Agency Contract General Provisions, this responsibility shall include possible requirements for provision of documentation in the Host Nation language. The Contractor shall also be responsible for all damages to persons or property that occurs as a result of the Contractor's fault or negligence. The Contractor shall also be responsible for all materials delivered and work performed until FSA.

ARTICLE 30. PROTECTION OF WATER, LAND, EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS

30.1 The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site that are not to be removed and that do not unreasonably interfere with the work required under this Contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Authority.

30.2 The Contractor shall protect from damage all existing improvements and utilities

a) at or near the work site, and

b) on adjacent property of a third party, the locations of which are made known to or shall be known by the Contractor.

30.3 The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this Contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Authority may have the necessary work performed and charge the cost to the Contractor.

ARTICLE 31. OPERATIONS AND STORAGE AREAS

31.1 The Contractor shall confine all operations (including storage of materials) on HN Bulgaria premises to areas authorized or approved by the Contracting Authority. The Contractor shall hold and save the Purchaser, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

31.2 Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Authority and shall be built with labour and materials furnished by the Contractor without expense to the Purchaser. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Authority, the buildings and utilities may be abandoned and need not be removed.

31.3 The Contractor shall, under regulations prescribed by the Contracting Authority, use only established roadways. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any national or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

ARTICLE 32. SITE CLEAN UP

32.1 The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Purchaser. Upon completing the work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Purchaser.

ARTICLE 33. AVAILABILITY AND USE OF UTILITY SERVICES

33.1 As stated in SOW Section 12.2.1 and 12.2.2, at BOD date the Purchaser and the HN Bulgaria will make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies. Unless otherwise provided in the Contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the Host Nation Governments or, where the utility is produced by the Host Nation, at reasonable rates determined by the Host Nation. The Contractor shall carefully conserve any utilities furnished without charge.

33.2 The Contractor, at its expense and in a workmanlike manner satisfactory to the Host Nation representatives, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. After Individual Site Acceptance of each site by the Purchaser, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

33.3 The Contractor shall not be billed for utility usage after FSA.

ANNEX 1 TO BOOK II PART II CONTRACT SPECIAL PROVISIONS

NON DISCLOSURE DECLARATION

[TO BE SIGNED BY THE CONTRACTOR'S TEAM MEMBER WORKING IN THE NATO'S OR THE HOST NATION'S PREMISES UPON COMMENCEMENT OF THIS CONTRACT]

I UNDERSTAND:

That I must preserve the security of all Information[i] that comes to my knowledge as a result of this contract with the NATO C&I Agency and that I undertake to comply with all relevant security regulations.

That I must not divulge to any unauthorised person, any Information gained by me as a result of this Contract with NATO, unless prior permission for such disclosure has been granted by the appropriate NATO authority.

That I must not, without the approval of the appropriate NATO authority, publish (in any document, article, book, CD, video, film, play, or other form) any Information that I have acquired in the course of my official duties for NATO.

That, at the end of Contract and after performance of all required tasks, I must surrender any official document or material made or acquired by me in the course of my official duties, save such as I have been duly authorised to retain.

That if I violate prescribed security practices either intentionally or accidentally, my work on NATO or Host Nation premises shall be immediately terminated.

That the provisions of the above Declaration apply not only during the period of my Contract with the Agency, but also after my work has ceased and that I am liable to prosecution if either by intent or negligence I allow Information to pass into unauthorised hands.

That by accepting the position of Support Contractor for NATO corresponding to the tasks and duties described in the present Contract, I will be considered as a Key personnel as specified in special provision Article 13.

That I commit to fulfil my obligations for the period of performance mentioned in the Schedule of Supplies and Services (including the optional periods) unless major events beyond my reasonable control happen.

That shall I decide for personal interest to leave the position, I will do my best effort to fulfil my obligations until the Company that is currently employing me has provided NATO with an acceptable suitable substitute in accordance with Special Provision – Article 13.

[i] "Information" includes but is not limited to classified and commercial-in-confidence information.

That I solemnly undertake to exercise in all loyalty, discretion and conscience the functions entrusted to me and to discharge these functions with the interests of NATO and the Host Nation only in view. I undertake not to seek or accept instructions in regard to the performance of my duties from any government, company or from any authority other than that of NCI Agency or the Host Nation.

That within the next two weeks I shall acquaint myself with Host Nation security regulations and security operating instructions.

Date Full name (in block capitals) Signature

ANNEX 2 TO BOOK II PART II CONTRACT SPECIAL PROVISIONS

CONTRACTOR BACKGROUND IPR

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

ITEM	DESCRIPTION

b) The Contractor has and will continue to have, for the duration of the Contract, all necessary rights in and to the Background IPR specified above.
c) The Background IPR stated above complies with the terms specified in Clauses 29 and 30 of Contract General Provisions.

ANNEX 3 TO BOOK II PART II CONTRACT SPECIAL PROVISIONS

LIST OF SUBCONTRACTOR IPR

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

ITEM	DESCRIPTION

b) The Contractor has and will continue to have, for the duration of the 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 specified in Clauses 29 and 30 of Contract General Provisions.

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BOOK II

PART IV – STATEMENT OF WORK (SOW)

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SECTION 1 INTRODUCTION

1.1. Overview

1.1.1. This Statement of Work (SOW) describes the responsibilities of and efforts to be performed by the Contractor in satisfying the requirements of the Broadcast Maritime Rear Link and Ship/Shore System (BRASS) BGR Project. The SOW is comprised of fourteen (14) sections that describe, from a technical and managerial standpoint, the requirements for the Contractor's performance during the Contract.

1.1.2. The scope of the BRASS BGR project is to implement the electronic portion (communication and information system) of BGR BRASS system. The overall BRASS BGR project is divided into two separate projects. One is the Communications and Information System (CIS) project, which is the subject of this SOW, and the second one is a Civil Works project whose responsibility belongs to another Civil Works (CW) contractor that was selected by the Host Nation. However there exists a close dependency between these two projects that can jeopardize the completion of the overall BRASS project on time. Hence, to minimize the interface between these two projects and to define a clear distinction between the responsibility areas of two contractors, the civil work is divided into two clearly defined portions and the responsibility of the portion closely related to CIS is given to CIS contractor (contractor hereafter). Therefore the civil work that is closely related to CIS is the subject of this SOW as well.

1.1.3. However there will be also some minor civil works requirements that must be defined by the CIS contractor but implemented by CW Contractor. These requirements shall be defined in Site Preparation Data Package (SPDP) as stipulated in SOW Section 12.

1.1.4. Therefore the Civil Works which are closely related to CIS are also part of this Contract. The contractor shall prepare a design for those Civil Works including all related works. According to the Bulgarian legislation, this design shall be examined by a consultant/supervisor (selected by Bulgarian MoD as a result of National Competitive Bidding) and approved by the Minister of Defense. The consultant/supervisor will examine/accept the bill of quantity and drawings made by the designer and will monitor/accept the construction process. Detailed requirements for the Civil Works will be provided in the SOW paragraph 3.5 and Section 12 of the SOW.

1.2. Purpose of the Project

1.2.1. The purpose of the BRASS project is to modernise the current BGR Navy Surface High Frequency (HF) maritime communication system, to provide adequate HF capability, monitoring and control facilities and to increase of management flexibility and communications availability, according to the requirements and standards established for BRASS Baseline in this statement of work, with the aim of achieving the necessary North Atlantic Treaty Organisation (NATO) and National Maritime Command and Control (C2) operational capability.

1.2.2. The responsibilities in the overall BRASS Bulgaria project are shared by the Contractor, HN Bulgaria and NCI Agency as depicted in the following figure. Note that the responsibilty area of the Contractor is bordered in thick red frame.

1.3. Standards for interpretation of the Statement of Work (SOW)

1.3.1. Throughout this Statement of Work (SOW), the following standards shall apply:

a. Whenever requirements are stated herein to “include” a group of items, parameters, or other considerations, “include” means “include but not limited to”;

b. Whenever reference is made to a section, tasks, or paragraph, the reference includes all subordinate and referenced paragraphs;

c. The order of the SOW requirements is not intended to specify the order in which they must be carried out unless explicitly stated. The SOW defines the activities the Contractor’s process shall cover, i.e., the Contractor’s implementation plans determine the timing of Contractor detailed activities;

d. For purposes of the SOW, the term "the Purchaser" means the NATO Communications and Information Agency (NCI Agency) or its authorised representatives;

e. For purposes of the SOW, the term "Host Nation (HN)" means the Ministry of Defence (MOD) BGR and or its authorised representatives;

f. 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.

SECTION 2 PROJECT MANAGEMENT

2.1 Purchaser's Project Management Approach

2.1.1. The Purchaser will manage the project using the PRINCE2 project management methodology. Under this methodology, the Project Executive (the Purchaser) controls the project through a Project Board, which he chairs.

2.1.2. The Contractor shall designate a Project Manager (PM), who shall direct and coordinate the activities of the Contractor's project team.

2.1.3. The Project Manager shall be the Contractor's primary contact for the Purchaser's Project Manager and shall conduct all major project design, test, and status reviews.

2.1.4. The Project Manager shall be prepared at all times to present and discuss the status of Contract activities with the Purchaser's Project Manager or Contracting Officer.

2.2. Contractor's responsibility, Organization and Personnel

2.2.1. The Contractor shall establish a project management organisation for the purpose of performing and managing the efforts necessary to satisfactorily discharge his responsibilities under this Contract.

2.2.2. The Contractor shall provide the necessary manpower and resources to conduct and support the management and administration of his operations in order to meet the overall objectives of the contract.

2.2.3. The Contractor shall get written approval of the Purchaser if any key personnel and responsibility changes occur in the contractor's project organization during the Contract.

2.2.4. During project execution, the project shall be controlled in accordance with the approved Project Implementation Plan. As part of the monitoring and control function, the Contractor shall advise the Purchaser at all times of potential implementation problems and schedule risks.

2.2.5. Contractor's project manager and personnel working at HN or Purchaser premises/sites shall be security cleared to "NATO SECRET" level. Contractor personnel without such a clearance, confirmed by the appropriate national security authority and transmitted to the cognizant NATO/HN security officer at least fourteen (14) calendar days prior to any site visit, will be denied access to any of the HN or Purchaser premises/sites. 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 and/ or a determination of Termination for Default by the Purchaser.

2.2.6. This requirement applies also to all personnel involved in this project as a result of subcontracts issued by the Contractor for effort under the prime Contract.

2.2.7. Project Manager and Deputy Project Manager shall meet the following qualifications:

a. Education: University degree in management or electronics/telecommunications engineering or business administration. In addition, formal project management certification through Project Management Institute (PMI) or equivalent source.

b. Experience: At least 7 (seven) years in project management regarding military communications and information system environment. Experience shall includ large scale projects through all phases and across wide geographical areas.

2.2.8. The Contractor shall designate a Technical Lead for the project. The Technical Lead shall lead the analysis, design, development, integration and follow-on enhancement efforts of the Contractor. The Technical Lead shall have the strong experience/familiarity with the HF and Defence Radio Frequency technologies. He/She shall also be able to develop and co-ordinate technical/engineering designs, manage the implementation and be good at addressing and identifying technical issues as they arise and formulating options to address these issues. The Technical Lead shall meet the following qualifications:

a. Education: Master’s degree in engineering.

b. Experience: At least 7 (seven) years in engineering positions associated with the review, design, development, evaluation, planning and operation of software components, subsystems, or systems for government or commercial use.

2.3. Project Implementation Plan (PIP)

2.3.1. General

a. The Contractor shall prepare and submit a draft Project Implementation Plan (PIP) for Purchaser’s approval that shall describe how the Contractor shall implement the totality of the project, including details of the controls that shall be applied. The PIP shall describe the processes and procedures that the Contractor shall follow to plan, design, and test and install all the systems that are part of this Contract.

b. The PIP shall identify all major Contractor operating units and any Sub-contractors involved in the development of BRASS BGR system and shall describe the portion of the overall effort or deliverable item for which they are responsible for.

c. The PIP shall cover all aspects of the project implementation, including the Contractor’s project management structure and project control processes, personnel assignments, and external relationships necessary to provide the capability as required by this Contract.

d. The PIP shall be sufficiently detailed to ensure that the Purchaser is able to assess the Contractor's plans and capability to implement the entire project in conformance with the requirements specified herein.

e. The PIP shall define the major quality checkpoints that shall be implemented while executing the project and the quality process to be used at each checkpoint.

f. The PIP shall cite any references used in the quality management, such as methodologies, tools or best practice material.

g. The PIP shall identify the organisation and responsibilities of the quality assurance team and its relation to the project team.

h. If sub-contracted quality resources are used, the PIP shall describe the controls and processes in place for monitoring the Sub-Contractor's work against agreed timelines and levels of quality.

i. The Contractor shall ensure that the PIP, including associated plans, remains up to date throughout the duration of the Project to reflect the actual state of the Contractor's organisation and efforts.

j. The PIP shall include the following sections and provide the major plans required under this Contract:

i. PIP Section 1: Project Management and Control

ii. PIP Section 2: System Engineering and Design

iii. PIP Section 3: Quality Assurance

iv. PIP Section 4: Configuration Management

v. PIP Section 5: Integrated Logistics Support

vi. PIP Section 6: Test and Verification Plan – (STVP))

vii. PIP Section 7: Documentation

viii. PIP Section 8: System Acceptance

ix. PIP Section 9: Training

x. PIP Section 10: Reliability, Availability, Maintainability and Testability (RAMT)

xi. PIP Section 11: Contractor Logistic Support (CLS)

xii. PIP Section 12: Security Accreditation Plan (SAP)

xiii. PIP Section 13: Risk Assessment and Management Plan (RAMP)

xiv. PIP Section 14: Site Installations and Civil Works

k. Within 7 weeks from Effective Date of Contract (EDC), the Contractor shall submit the Draft PIP to the Purchaser for review. At the first Project Progress Meeting (PPM as per SOW 2.6.2), a presentation of the Draft PIP shall be included. This presentation shall consist of an outline of the salient features of the planned project management and an assessment of the risk areas involved in the project schedule and meeting the requirements of the Contract. The Purchaser will provide initial comments and an assessment of the draft PIP concerning the need for correction of error and/or inconsistency and the inclusion of material that has been omitted. During the PPM, the Purchaser will also discuss the draft design of the systems (and associated components) that is proposed

l. The Purchaser will review the Draft PIP and send the comments to The Contractor in two (2) weeks from the first PPM.

m. Two (2) weeks after receipt of the Purchaser's comments, the Contractor shall deliver, for Purchaser's acceptance, the final version of the PIP that shall incorporate all Purchaser comments concerning deviations from and omissions of Contract requirements.

n. The final version of the PIP, as accepted by the Purchaser, shall be the official document, along with the Contract, against which the Contractor is expected to conduct the performance of the Contract and shall be used to measure Contract progress against the delivery requirements of the Schedule.

o. Purchaser's acceptance of the final version of the PIP does not constitute Purchaser approval of the Contractor's plan, but signifies that the Purchaser considers the plan to be a logical and satisfactory approach to the management of the required ok ciractivities, based upon the information provided. 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 the statements of the PIP in the case of any conflict, ambiguity or omission.

p. The Contractor shall provide copies of all documents, spreadsheets, Work Breakdown Structure (WBS), Gantt Charts, etc, that are presented in the PIP to the Purchaser in the quantities as specified in the SSS and format as specified in SOW SECTION 13 below.

2.3.2. <u>PIP Section 1 – Project Management and Control</u>

a. In PIP Section 1 the Contractor shall establish, provide and maintain a Project Management and Control Plan (PMCP) that shall describe how the Contractor shall implement the totality of the project, including details on the project control processes that shall be applied.

b. The Project Management and Control Plan shall define in detail how the Contractor intends to manage this project from EDC through Final System Acceptance (FSA) and throughout the Warranty period. It shall consider all aspects of project management and control and demonstrate by means of programme analysis and planning how all the critical dates defined in the Contract shall be met. In order to be compatible with the Purchaser's software used for Project management purposes, all documents, worksheets, drawings, slides and schedules/plans shall be prepared using the software tools as indicated in SOW SECTION 13 below. This Section shall include, but not be limited to, the following aspects:

   i. A description of the management structure of the Contractor's Project Team Organisation (PTO) that shall indicate its relationship within the company structure;

   ii. A list of personnel assigned to the Contractor's PTO that shall define their respective roles, responsibilities and authority;

   iii. A description of Contractor and Sub-Contractor (or any third party) relationships that shall demonstrate how the Contractor effectively manages, monitors and controls the Sub-Contractor(s).

c. As a part of PMCP of PIP, the Contractor shall also establish, deliver and maintain a Project Work Breakdown Structure (PWBS), as follows:

   i. The PWBS shall define all work packages and the relationship between the work packages and the supplies and services to be delivered to the Purchaser. The contractor shall capture 100% of the work defined by the project scope, as well as all deliverables – internal, external, and interim – in terms of the work to be completed, including project management, in the PWBS.

   ii. The PWBS shall include a PWBS Dictionary that describes each component of the PWBS with milestones, deliverables, activities, scope, and dates, resources, costs, quality.

iii. The PWBS shall decompose 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.

iv. Activity or series of activities defined in the PWBS shall not be longer than a single reporting period.

v. The PWBS elements shall be coded sequentially to reveal a hierarchical structure.

vi. The PWBS shall identify the scope of work for all PIP sections and shall capture all associated deliverables – internal, external and interim - in terms of work to be completed.

vii. The PWBS shall define interfaces between the Contractor's deliverables and Purchaser Furnished Equipment (PFE)/Facilities/ Information regarding the Project.

d. During the performance of the Contract, the Contractor shall not change the PWBS, its associated definitions, or any of its reporting elements without the approval of the Purchaser.

e. The Contractor shall use the PWBS as the primary framework for Contract planning and reporting to the Purchaser. The PWBS shall define the products to be developed and produced, and relate the elements of work to each other and to the end product.

f. As a part the PMCP of the PIP, the Contractor shall also establish, deliver and maintain a Project Master Schedule (PMS) that contains all contract events and milestones. The PMS shall correlate with the PWBS. The PMS shall show the start and completion dates of each activity, using calendar year timescales divided into weeks and shall show the interfaces with other activities.

i. The PMS shall depict the sequence, duration, and relationship among PWBS, tasks, work packages and work items.

ii. The PMS shall identify the start and finish dates, duration, predecessors, successors, and resource requirements for each work item.

iii. The PMS shall include the delivery dates for all project products, including at least the initial version and the final one.

iv. The PMS shall include activity network, activity GANTT, Program Evaluation Review Technique (PERT) charts, developed in formats interoperable with Microsoft (MS) Project 2007/2010, showing detailed and high level schedules with associated resources and dependencies, milestone, and critical path views of the project schedule. Critical paths shall be clearly identified in the PMS.

v. The Contractor shall maintain the baseline version of the PMS on the relevant documentation folder.

g. The PMCP shall cover at least the following areas:

i. Project scope

ii. Major deliverables

iii. Assumptions

iv. Project organisation

v. Internal structure which shall include a project organisational diagram

vi. Roles and responsibilities of each organisational unit

vii. Project resources, Key personnel, their qualifications, and their responsibilities (All resources shall be assigned to project task within the PIP).

viii. Organisational boundaries between the project organisation and the parent and subcontracted organisations.

ix. Project management processes

x. Project start-up, which shall include staffing, basis of cost and schedule estimates, and project infrastructure.

xi. Project control, which shall include monitoring, reporting, and change management of work packages.

xii. Issue management, which shall include the identification, reporting, assessment, and logging of project issues.

xiii. Communications management, Project Checkpoint Reports (refer to 2.4 below), and all other communications with the Purchaser.

xiv. Security management, which shall include personnel and facility (site) security.

xv. Purchaser involvement via meetings, reporting, modification and change, implementation, verification, approval, acceptance and access to facilities.

xvi. Subcontracting plan demonstrating that the Contractor can effectively manage, monitor and control the sub-contractors and that the sub-Contractors will agree to abide by the requirements of the prime Contract as pertains to flow-down provisions

h. The Contractor shall identify in his preliminary Project Management and Control Plan the constraints of the implementation environment, their effects on the project execution and his mitigation measures.

2.3.3. PIP Section 2 - System Engineering and Design

a. The Contractor shall furnish in PIP Section 2, the System Engineering and Design Plans for the BRASS BGR system addressing the design of the systems proposed in accordance with SOW paragraph 4.2 below and shall update the design to meet the requirements of the BRASS BGR environment.

The System Safety Engineering Plan shall provide as sub-plans, the System Safety Engineering Plan in accordance with the SOW paragraph 4.3 below. During the presentation of the PIP, the Purchaser will review the draft design of the systems (and associated components) that is proposed.

2.3.4. PIP Section 3 - Quality Assurance

a. PIP Section 3 shall describe the Contractor's Quality Assurance Organisation and Quality Assurance (QA)/Quality Control (QC) System, which shall be in accordance with SOW SECTION 6 below.

2.3.5. PIP Section 4 - Configuration Management (CM)

a. The Contractor shall provide in PIP Section 4 a Configuration Management CM Plan that shall define the initial configuration items CI(s), the organisation and procedures used to manage the configuration of the functional and physical characteristics of CI(s), including interfaces and configuration identification documents, as set forth in SOW SECTION 7 below.

b. Configuration Management (CM), which shall include Configuration Item (CI) identification, identification and control of change requests and deficiency reports, configuration status accounting, auditing, and co-ordination of Contractor and Purchaser configuration management and change control processes, for both documentation and material deliverables (i.e. services).

2.3.6. PIP Section 5 - Integrated Logistic Support (ILS)

The Contractor shall describe in PIP Section 5 how he intends to fulfil all Integrated Logistics Support (ILS) requirements in accordance with SOW SECTION 8 below.

2.3.7. PIP Section 6 - Test and Evaluation

The Contractor shall define in PIP Section 6 his proposed test organisation and provide a Test and Verification Plan (STVP) in accordance with SOW SECTION 10 below.

2.3.8. PIP Section 7 - Documentation

The Contractor shall provide in PIP Section 7 a detailed plan to deliver all documentation in accordance with SOW SECTION 13 below. The Contractor shall identify the documentation team and the individual responsible within his organisation to ensure such documentation is delivered on schedule and to the Contract requirements.

2.3.9. PIP Section 8 - System Acceptance

The Contractor shall provide in PIP Section 8 a plan to accomplish all the activities required and to ensure the successful Final System Acceptance (FSA) in order to meet the requirements of SOW SECTION 11 below.

2.3.10. PIP Section 9 - Training

The Contractor shall set forth in PIP Section 9 his Plan to fulfil the Training requirements of the Contract as specified in SECTION 14 below.

2.3.11. PIP Section 10 - Reliability, Availability, Maintainability and Testability (RAMT)

The Contractor shall set forth in Section 10 in his Plan to fulfil the Reliability, Availability, Maintainability and Testability requirements of the Contract as specified in SOW SECTION 9 below.

2.3.12. PIP Section 11 – Contractor Logistics Support (CLS)

The Contractor shall provide in Section 11 of the PIP a Contractor Logistics Support (CLS) Plan, which shall describe the services that the Contractor shall perform during the Warranty period as set forth in SOW SECTION 8 below and during all contracted CLS periods (taking into consideration Book III), if HN decides to exercise CLS option after warranty period.

2.3.13. PIP Section 12 - Security Accreditation Plan (SAP)

The Contractor shall provide in PIP Section 12 his Plan to fulfil the Security Accreditation requirements of the Contract as specified in SOW SECTION 5 below.

2.3.14. PIP Section 13 - Risk Assessment and Management Plan (RAMP)

a. The Contractor shall provide in PIP Section 13 his Plan to fulfil the Risk Assessment and Management requirements of the Contract as specified in SOW paragraph 2.7 below. This RAMP shall define the strategy for risk management and the way the risk management process, which shall include risk identification, risk assessment, risk mitigation, risk monitoring, and risk reporting, shall be conducted throughout the Contract duration.

b. Risk management, which shall include the Contractor's and sub-contractor's process for risk identification, assessment, mitigation, monitoring, and reporting

2.3.15. PIP Section 14 – Site Installation and Civil Works

a. The Contractor shall provide in PIP Section 14 his Plan to fulfil the Site Installation and Civil Works requirements of the Contract as specified in SOW paragraph 3.5., SOW Section 12 and SOW Annex C herein.

b. If required; in order to mitigate potential disruption of national communication services by contractor activities, the Contractor shall develop a System Installation Transition Plan (SITP) in coordination with the Host Nation (HN) BGR and the Agency that shall ensure minimum disruption of provision of national communications services between site preparation and Individual Site Acceptance Test (ISAT). This transition Plan shall be subject to the approval of HN in cooperation with the Agency. The Contractor shall have delivered a preliminary SITP shall include but not limited to; a work schedule and task list for system installation that maximises the amount of on-air time and minimized off-air time for HN communications services, until the HN communications services could be supported as part of the BRASS BGR system.

2.4. Project Checkpoint Reports (PCR)

2.4.1. The Contractor shall prepare and submit a Project Checkpoint Report (PCR) to the Purchaser every month after EDC for the duration of the Contract. The PCR shall contain as a minimum the following information:

a. Date of checkpoint

b. Period covered

c. Follow-ups from previous reports

d. Activities during the period

e. Products completed during the period

f. Quality work carried out during the period

g. Tolerance Status (Costs, Delays and Performances).

h. Actual or potential issues and risk update

i. Work planned for the next period

j. Products to be completed during the next period.

2.4.2. The PCR may be appended to the Project Progress Report for those periods when the two reports coincide.

2.5. Project Progress Reports (PPR)

2.5.1. The Contractor shall prepare and submit a Project Progress Report to the Purchaser Project Management Team every three (3) months after EDC for the duration of the contract.

2.5.2. The Contractor shall submit the PPR reports per schedule to the Purchaser at least two weeks in advance of the next scheduled Project Progress Meeting (PPM). The PPR shall summarise the progress since the previous PPM, accomplishments, schedule of service deliveries against progress, difficulties encountered and resolution of any issues raised in previous PPM.

2.5.3. The PPR shall include, but shall not be limited to:

a. Overall project progress, which shall include the activities performed and works completed during the preceding reporting period.

b. Schedule of deliverables against progress, difficulties encountered, resolution of any issues.

c. The Contractor's Risk Log and Issue Log, which shall be compliant with PRINCE2.

d. A list of Change Proposals with the current status.

e. Configuration Status Reports (CSR) for the system and all documentation.

f. An up-to-date Project Plan (GANTT chart).

g. A proposed agenda for the upcoming PPM and, if necessary, which may include a summary of items to be discussed.

2.5.4. The Purchaser will confirm in writing the specific agenda with the Contractor, one week prior to each PPM.

2.6. Project Progress Meetings (PPM)

The Contractor shall organise and participate in Project Progress Meetings (PPM) scheduled every 3 months and chaired by the Purchaser. The Contractor shall ensure that the Contractor's Project manager and appropriate support staff attend the meetings.

2.6.1. A Kick-Off Meeting shall be conducted (1) week after EDC in the Agency. The Contractor shall introduce to the Purchaser the individuals of his organization (including sub-contractors) that are responsible for critical missions in the proposed project implementation.

2.6.2. The first PPM shall be conducted two (2) months after EDC. The next PPM should be every 3 months.

2.6.3. A PPM may be cancelled or postponed by the Purchaser without financial penalty.

2.6.4. The normal PPM agenda proposed by the Contractor to the Purchaser approval shall include the following agenda items (non-exhaustive):

a. Approval of the Minutes of previous PPM
b. The Contractor's presentation of the Project Progress Report
c. Review of project risks and issues
d. Review of action items from previous meetings
e. Schedule Review
f. Discussion/resolution of problems and areas of concern
g. Any other business.

2.6.5. The Contractor shall be responsible for producing the minutes of PPM and providing a draft copy for Purchaser comments within one week following the PPM.

2.6.6. The Purchaser will then provide comments and/or corrections made against the draft copy to the Contractor within one week of receipt.

2.6.7. The Contractor shall incorporate comments and/or corrections and return a final copy of the minutes to the Purchaser within one week of receipt of the Purchaser's comments and/or corrections.

2.6.8. The Contractor shall not consider the minutes as the basis for changes to the terms and conditions or scope of work of the contract in the absence of a formal contract amendment.

2.6.9. During the meetings the Contractor may be requested by the purchaser to provide detailed presentations on specific items at the subsequent PPM. A copy of the presentation material used at these activity reviews shall be handed over to the Purchaser. The Contractor shall be responsible for the following specific actions in the conduct of reviews:

a. developing a schedule and agenda for accomplishing the required views;
b. co-ordinating the review, schedule and agenda with the purchaser, and provide the Purchaser with appropriate Progress Reports prior to the review;
c. ensuring participation of sub-contractors, vendors and suppliers, as necessary;
d. organising and presenting briefings as necessary;

2.7. Risk Management Programme

2.7.1. The Contractor shall implement and maintain as part of his overall project management process a structured programme of risk identification, assessment and management. The programme shall address as a minimum the following areas.

a. Risk Assessment and Management Plan (RAMP) as described in PIP Section 13. The RAMP shall define the strategy for risk management and the way the risk management process, which shall include risk identification, risk assessment, risk mitigation, risk monitoring, and risk reporting, shall be conducted throughout the Contract duration

b. The identification of risks for the completion of the SOW related tasks.

c. Analysis of potential risks to identify risk dependent areas

d. Assessment of the probability of each risk occurring, and quantification of its possible impacts.

e. Identification of a risk owner for each risk.

f. Alternative risk mitigation measures to decrease the effects of the potential risks identified.

2.7.2. The Contractor shall require that each major sub-contractor also implement a programme of risk identification, assessment and management. The Contractor shall be responsible for integrating these programmes into a single programme.

2.7.3. The Contractor shall appoint and identify a risk manager to be the focal point for the implementation of the risk management programme.

2.7.4. Risk Reporting

The Contractor shall include in the PPR(s) a section or another report on all identified risks in descending order of priority. The section or report shall include a current assessment of the impact of each risk on work performance and schedules. The Contractor’s plans/schedules for risk abatement, mitigation, and work-around shall also be presented.

2.7.5. Risk Status and Alarm Reporting

Progress reports submitted by the Contractor shall address the status, potential impact and corresponding planning information for all identified risks. Any new risk area identified by the Contractor/Sub-Contractor having the potential for significant impact on the accomplishment of the Contract tasks or schedules shall immediately be brought into attention of the Purchaser.

SECTION 3 SCOPE OF WORK

3.1. Overall requirements

3.1.1. The BRASS project shall provide automation support to Maritime Surface Broadcast, Ship-Shore (S-S) and Maritime Rear Link (MRL) HF communication services and to the management of the available resources supporting these services.

3.1.2. The key element of the Project, in line with the BRASS baseline architecture, is the Automated Control and Management System (ACMS) located in Gorna Traka, BGR.

3.1.3. The Contractor shall procure, design, manufacture, deliver, install, integrate, test and prepare for acceptance the BRASS BGR system, as described in this SOW, which shall consist of the following main components:

a. An ACMS located at Gorna Traka, BGR;

b. A Receiving Site located at Galata, BGR;

c. A Transmitting Site located at Asparuhovo, BGR

3.1.4. The Contractor shall link the ACMS to the BRASS system in transmitting and receiving site by DLOS system.

3.1.5. The applicable System Specific Requirements for BRASS BGR is presented in SOW Annex A.

3.2. Operational Requirement

3.2.1. The detailed description of the operational requirement is presented in SOW Annex A.

3.3. Implementation Objectives

3.3.1. The Contract shall be implemented in the following three (3) phases;

a. Phase I: The system Design, Development and Factory Acceptance Test (FAT) phase ,

b. Phase II: System Acceptance Test Report (SAT) phase, and

c. Phase III: The Final System Acceptance (FSA) phase

3.3.2. The system implementation shall be completed and the system handed over by the Contractor to the Purchaser according to the timescale specified in the Schedule of Supplies and Services (SSS) and SOW para 3.3.7.

3.3.3. The Contractor shall be responsible for implementation of a fully integrated and operational BRASS system. The contractor shall provide all the necessary material and perform all the services required to execute the respective installation.

3.3.4. During the Design and FAT phase and prior to the actual installation of the system, the Contractor shall perform Factory Acceptance Tests (FAT) for BRASS system, where compliance with the technical requirements of this Contract shall be demonstrated to the Purchaser. The FATs shall be completed by EDC plus 44 (forty four weeks).

3.3.5. Following acceptance of the FAT the Purchaser will authorize the Contractor to start the delivery and installation activities of the complete system, provided availability of the sites.

3.3.6. The Contractor shall perform the installations of the systems at the HN facilities. The Contractor’s activities shall include preparations for and execution of delivery, installation, integration, testing and preparing for acceptance and system for operational use.

3.3.7. The Contractor shall provide the deliverables to the Purchaser in accordance with the following Schedule of Major Performance Milestones:

Item	BRASS BGR Major Performance Milestones	Delivery (not later than) NLT (EDC +)
1	Site Survey Report approved	6 weeks
2	Project Implementation Plan (PIP) and Site Preparation Data Package (SPDP) approved	12 weeks
3	Critical Design Review Meeting and approval of Critical Design Review (CDR) documentation including Site Installation Specifications (SIS).	24 weeks
4	Factory Acceptance Tests (FAT) Report approved	44 weeks
5	Delivery of System Equipment on Site	48 weeks
6	Completion of System Installation, (Check-outs and Site Compliance Inspection including reports)	52 weeks
7	Initial Site Acceptance Test (ISAT) Report approved	56 weeks
8	Site Acceptance Test (SAT)	58 weeks
9	Completion of Training (including reports)	60 weeks
10	Final System Acceptance (FSA)	64 weeks

3.4. Purchaser's and Host Nations' Responsibilities

3.4.1. The Purchaser is responsible for the administration of the Contract, which includes but not limited to negotiation of contract amendments and payment of invoices.

3.4.2. The Purchaser will provide the following items obtained from HN, as Purchaser Furnished Equipment (PFE) and Purchaser Furnished Property (PFP) to the Contractor[1]:

[1] Existing equipment on site, to be integrated and adapted by the Contractor as required in the SOW.

DESCRIPTION	SOW Reference	Originator	Delivery Time
ACMS site – Gorna Traka			
Three (3) Broadcast Receive Crypto Devices	SOW Annex A-Annex-C	NCI Agency	Upon request by the Contractor and approval of availability by the Purchaser
Three (3) Broadcast Transmit Crypto Devices	SOW Annex A Annex-C	NCI Agency	Upon request by the Contractor and approval of availability by the Purchaser
3 TADPOLE Cryptographic Devices	SOW Annex A Annex-C	NCI Agency	Upon request by the Contractor and approval of availability by the Purchaser
Rack for TADPOLE Cryptographic Equipment	SOW Annex A Annex-C	NCI Agency	Upon request by the Contractor and approval of availability by the Purchaser
Connectivity to the NATO General purpose Communications System (NGCS)	SOW Annex A Annex-C	NCI Agency	Before Installation Starts
3 Voice Cryptographic Equipment	SOW Annex A Annex-C	NCI Agency	Upon request by the Contractor and approval of availability

			by the Purchaser
Prime Power supply system including Back-up power generator set (short break Power Supply Sub-system-SB PSS), Uninterruptable Power Supply and Main Power Distribution Panel (MPDP) and connection among MPDP and SB/NB PSS.	SOW Annex C	HN	Before Installation Starts
Trenches and Manhole boxes for transmission lines from antennas to BRASS equipment	SOW Annex C	HN	Before Installation Starts
Building for accommodation of BRASS ACMS equipment and for accommodation of its supporting systems, BRASS dedicated HVAC and Fire Extinguisher System	SOW Annex C	HN	Before Installation Starts
BRASS building Lightning Protection and grounding installation except for those of BRASS Tx and DLOS Antennas	SOW Annex C	HN	Before Installation Starts
Water Supply Network and Connection to the fresh Water Supply Network	SOW Annex C	HN	Before Installation Starts
Access control - Electronic Surveillance and Alarm System	SOW Annex C	HN	Before Installation Starts
Land excavation for DLOS antenna/ levelling/trenching/ disposal	SOW Annex C	HN	Before Installation Starts
Dismantling, demolition, disposal obstruction and discarding equipment/structure in ACMS site (if requires)	SOW Annex C	HN	Before Installation Starts
Tx site - Asparuhovo			
Prime Power supply system including HV Transformer and Back-up power generator set (short break Power Supply Sub-system-SB PSS),	SOW Annex C	HN	Before installation starts

Uninterruptable Power Supply and Main Power Distribution Panel (MPDP)			
Trenches and Manhole boxes for transmission lines from antennas to BRASS equipment	SOW Annex-C	HN	Before installation starts
Building for accommodation of BRASS Tx equipment and for accommodation of its supporting systems, BRASS dedicated HVAC and Fire Extinguisher System	SOW Annex C	HN	Before installation starts
BRASS Building Lightning Protection and grounding except for those of BRASS Tx and DLOS Antennas	SOW Annex C	HN	Before Installation Starts
Water Supply network and connection to the fresh water supply network	SOW Annex-C	HN	Before installation starts
Access Control - Electronic surveillance and alarm system	SOW Annex-C	HN	Before installation starts
Antenna Farm – Land excavation for BRASS And DLOS antennas / leveling/trenching/disposal	SOW Annex-C	HN	Before installation starts
Dismantling, demolition, disposal obstruction and discarding equipment/structure in Tx site (if requires)	SOW Annex C	HN	Before Installation Starts
Rx site – Galata			
Prime Power supply system including Back-up power generator set (short break Power Supply Sub-system-SB PSS), Uninterruptable Power Supply and Main Power Distribution Panel (MPDP) and connection among the MPDP, SB PSS and NB PSS	SOW Annex C	HN	Before installation starts
Trenches and Manhole boxes for transmission lines from antennas to BRASS equipment	SOW Annex C	HN	Before Installation Starts

Building for accommodation of BRASS Rx equipment and for accommodation of its supporting systems, BRASS dedicated HVAC and Fire Extinguisher System	SOW Annex C	HN	Before Installation Starts
BRASS Building Lightning Protection and grounding except for those of BRASS Rx and DLOS Antennas	SOW Annex C	HN	Before Installation Starts
Water Supply Network and Connection to the fresh Water Supply Network	SOW Annex C	HN	Before Installation Starts
Access control - Electronic Surveillance and Alarm System	SOW Annex C	HN	Before Installation Starts
Antenna Farm – Land excavation/ levelling/trenching/disposal for BRASS and DLOS antennas	SOW Annex C	HN	Before Installation Starts
Dismantling, demolition, disposal obstruction and discarding equipment/structure in Rx site (if requires)	SOW Annex C	HN	Before Installation Starts
SOFTWARE			
BRASS ICC Software	SOW Annex A, B	NCI Agency	following delivery of Facility Security Clearance to the Purchaser and with a Non-Disclosure Agreement-

3.4.3. All PFE and PFP shall be used by the Contractor to the maximum extent possible. All PFE and PFP not reused by the Contractor for this Project must be stored in a location to be defined by HN.

3.4.4. Regarding the PFE's listed above, the Purchaser will obtain following services from the HN and provide it to the contractor:

a. Make the PFE/PFP and services, other than the BRASS ICC (BICC) software and cryptographic equipment, timely available to the Contractor. The BICC software and cryptographic equipment will be submitted by the purchaser;

b. Ensure timely availability of an appropriate installation environment, including prime power lines and sufficient commercial power to be able to support the BRASS system requirements.

c. Ensure availability and timely access to installation sites and other related premises;

d. Ensure timely availability of provision of facilities with utilities (including design and implementation of civil works) to house the technical equipment of BRASS BGR system

e. Ensure timely availability of the civil works documentation, including building and site plans, required by the Contractor to plan, design and execute works according to this contract;

f. Bring the buildings in which BRASS equipment are installed to National and NATO standards. This includes a raised floor and HVAC system needs to be installed to accommodate the new BRASS equipment.

g. Provide a Point of Contact and daily local liaison to the Contractor for civil works with observation function. NCI Agency will maintain the relationship with the HN for this purpose. However, the Contractor is responsible to the purchaser (NCI Agency) for all works under this contract, including Civil Works as stipulated in Section 12 and in other relevant paragraphs of this Contract;

h. Ensure timely availability of communications lines for external connectivity, such as connections to NDN and NGCS (NATO General Communications Segment) and provide crypto equipment required for this connectivity;

i. Provide the required link connectivity between ACMS (Gorna Traka) and Navy HQ through the NDN and provide the crypto equipment at Navy HQ for this connectivity.

j. Provide crypto keys for testing purpose of the BRASS system upon receiving crypto keys from the NCI Agency.

k. Ensure that a pool of frequencies will be available for testing and operation of the BRASS system by assuring timely coordination with relevant NATO, international and National organizations. These frequencies shall cover the range required to maintain HF communication throughout the day (in summer and winter time) and suitable for different range of HF communication distances;

l. Ensure timely availability of complete electrical connection and installation (including plugs, sockets and light fixtures as well as surge protection devices and residual current devices – RCD) terminated at and including MPDP (Main Power Distribution Panel). However, as stipulated in SOW Section 12 and paragraph 3.5., it is the Contractor's responsibility to provide and install BRASS dedicated Electrical Power Distribution Boards (Panels) (with associated cabling and plugs) in such a manner that they will be integrated into Prime Power Supply System (provided by HN), SB PSS (provided by HN at all BRASS sites) and NB PSS (provided by the Contractor and HN)

m. Ensure provision and installation of electrical circuits and power breakers at MPDB.

n. Ensure provision and installation of cables left unterminated at BRASS dedicated areas.

o. Provide Main Power Distribution Panel (MPDP) while Contractor shall provide power distribution and feeding/routing for BRASS dedicated equipment.

p. Provide Prime Power Supply System, high voltage transformer of capacity sufficient to support the systems requirements and the main power line terminated at the MPDP as well as the connection among the transformer and MPDP, Short Break/No Break Power Supply System (SB/NB PSS).

q. Provide and install SB PSS at ACMS, Tx and Rx sites. The SB PSS provided by HN will be capable of supporting both BRASS-System and its dedicated HVAC, NB PSS and Gas Fire Extinguishing Systems (FES). Additionally, the SB PSS will have 20% of spare capacity.

r. Provision and installation of fully redundant diesel power generators – Emergency Power Generating Set (with auxiliaries such as fuel pumps, pipes daily tanks for each generator, control and alarm panel/automatic switchgear and associated equipment).

s. The generators will be provided with appropriate foundation (including vibration and sound attenuation measures and meeting requirements reference local seismic conditions) and shelter against weather conditions. Preparation of the site for the generators to be installed in the shelter is the HN's responsibility.

t. Provide and install UPSs for the sites and non-BRASS equipment whereas Contractor is responsible for provision and installation of BRASS dedicated UPSs. The integration of BRASS dedicated electrical power distribution panel (EPDP) into Prime Power Supply System (provided by HN), SB (provide by HN) and NB PSS (provided by HN and Contractor) is the Contractor's responsibility.

u. Provide and install Fuel Supply System, underground fuel tanks and shelter for generators.

v. Demolition of structures or material at ACMS, Tx and Rx sites, that are to be identified and agreed during the site surveys, and subsequent rubble removal at the sites.

w. Dismantling, movement and reinstallation of existing utilities (i.e. water pipes, sewage system, gas pipes, communication lines, power lines etc.) interfering with areas designated for the Contractor's works are the Host Nation's responsibility. This activity will only be exercised with the HN's agreement and only if the Contractor's provided equipment and structures cannot be relocated to other areas that will void utility relocation and at the same time will assure full functionality of the systems

x. Complete preparation of BRASS and DLOS antenna farms (including but not limited to land excavation, ground levelling and compacting, trenching, disposal, bush and vegetation clearing, removal of rubble, removal of hazardous material, demolition works and removal of existing antennas). The area subjected to the preparation works conducted by the HN shall include antenna and associated cable ducts locations, access roads and other areas within the sites boundaries that may affect antenna functionality.

y. Dismantle, dispose, demolish and transport all equipment, structure or material identified by Contractor in the approved SPDP in or around the antenna farm at the BRASS sites.

z. Arrange a site (or locations) to store all dismantled, disposed or demolished equipment or structures and transport those dismantled, disposed or demolished equipment or structures into this arranged location.

aa. Arrange a site (or locations) to store and transport all PFE and PFP not reused by the Contractor under the Contract.

bb. Arrange in a locked, environmentally controlled and secured site to store all BRASS BGR equipment delivered by Contractor under the contract before the installation.

cc. If required by national regulations/legistlations, nominate a Health and Safety (H/S) coordinator responsible to develop the health and safety plan and to oversee the execution of the works in compliance with Health and Safety Plan

dd. Disposal of any hazardous material.

ee. Disposal of any material containg Asbestos.

ff. Provision and installation of new doors, locks (including combination locks and pass readers etc.) and frames to fulfil Class-I and Class-II area requirements respectively.

gg. Painting and finishing works in BRASS dedicated rooms and rooms planned for its related equipment.

hh. Provision and installation of IT and communication lines~~,~~ cable trays and external and internal cable ducts provision and installation for power, IT and communication lines and wall penetrations.

ii. Floor and wall finishing including provision and installation of floating floors or suspended ceilings to accommodate cables, ducts etc. when duly justified;

jj. Coordinate with off-site organizations to ensure: proper connectivity to the public telephone and power networks; compatible use of radio frequency and microwave communication media, so as not to interfere with other commercial, public safety, or international radio users.

kk. Provision and installation of fully redundant BRASS dedicated HVAC system. Ensure that HVAC ductwork and plumbing routing do not conflict with cable tray or telecommunications conduit routing during implementation. HN needs to ensure that internal building utilities be de-conflicted with the cabling infrastructure

ll. Insulation of all A/C and water pipes in BRASS dedicated rooms in order to prevent the formation of condensation.

mm. Provision and installation of BRASS dedicated Fire Extinguishing System (FES) and smoke detectors for all BRASS dedicated rooms. Ensure that smoke detectors are connected to automatic addressable fire alarm systems to enable the registration of smoke generation/fire and alarm activation.

nn. Systems and procedures for fire detection, alarms and extinguishing must comply with all requirements and directives stipulated by local and/or national fire authorities and, if relevant, insurance companies.

oo. Grounding and earthing of fuel tanks, pipes and the SB PSS according to HN regulations.

pp. Improvement of access road from the main gate to the ACMS, Tx and Rx buildings and to the Tx and Rx antennas from the Tx and Rx buildings.

qq. Ensure that power cables routing do not conflict with exisiting (power, telecommunications, etc,) conduit routing during Contractor's SPDP preparation and implementation.

rr. Ensure that electrical equipment, lighting, etc. does not conflict with electromagnetic interference (EMI), and the inclusion of EMI filters during Contractor's SPDP preparation or implementation.

ss. Ensure that all lighting circuits and elements shall be protected against EMI by design and the inclusion of EMI filters.

tt. Ensure that design and installation of the building earth network and BRASS dedicated room earth network with the earth rail are installed in the room.

uu. Ensure that design and install grounding, earthing network and lightning protection for buildings where the BRASS system will be accommodated (except for antennas) are accomplished according to IEC 60364. When grounding requirement pertains to RED and BLACK equipment the design and installation shall be implemented according to 'Facility Design Criteria and Installation of Equipment for the Processing of Classified Information (SDIP 29/2- July 2015).

vv. Ensure that (after civil works are finished by the HN) facilities meet security zoning and physical security area requirements prescribed by NATO and National rules for the level of classification of the BRASS BGR System. Accordingly, ensure that security accreditation of the BRASS dedicated rooms (upon completion of the civil works) is issued in accordance with reference documents in SOW Section 5 paragraph 5.2.1. BRASS related equipment will be installed within CLASS-I COMMCEN area.

ww. Provide standard training equipment such as a Projector and Screen, a White Board with Markers and the availability of a photo copier or scanner plus printer etc.

3.5. Contractor's responsibilities and activities at ACMS, Tx and Rx sites

3.5.1. The services provided by the Contractor shall consist of design, procurement and delivery of hardware, software and documentation, as well as commissioning activities, installation, integration, testing and training, to meet all the requirements of BRASS BGR project as detailed throughout this document.

3.5.2. It is also the Contractor's responsibility to test the integration of the Contractor's provided equipment with relevant equipment, elements and systems provided as PFE (including crypto equipment) and demonstrate in SAT that both the Contractor's and PFE are compatible and function correctly as stipulated in this SOW.

3.5.3. The Contractor shall inform the NCI Agency's Project Manager (PM) and Contracting Officer (CO) as detailed in the Special Contract Provisions of all contractually relevant events.

3.5.4. The Contractor shall notify the Purchaser six (6) weeks before the start of his installation activities at a particular site. The notification shall include names, passport numbers and clearances of the installation team.

3.5.5. Concerning civil works, the Contractor shall provide and install all equipment, material and erect structures as stipulated in Section 12 of this Contract.

3.5.6. Concerning civil works, the contractor shall provide all the necessary calculations and fulfil all the necessary formalities (including but not limited to obtaining respective permits and authorizations) as stipulated in Section 12 of this IFB.

3.5.7. The Contractor shall establish and provide BRASS equipment power budget including power loads for HVAC and Gas Fire Extinguishing System (FES) provided by the Host Nation. The power budget shall enable determination of the capacity of the SB PSS and NB PSS system for each site (ACMS, Tx and Rx). Equipment power interface requirements shall also be provided by the Contractor.

3.5.8. The Contractor shall provide the required DLOS connectivity to provide connection between the ACMS, Tx and Rx sites as stipulated in SOW Annex-A

3.5.9. The Contractor shall design and implement suitable antenna mast foundation works (including relevant earth works) required for the installation of new antenna mast for BRASS and DLOS systems. The antenna farms on Tx and Rx sites will host the antennas of BRASS system as well as two additional antennas of future enhancement to BRASS (deployable land force support). Note that, with this project only the locations of the additional antennas will be determined. The two antennas will be procured in future projects. On Tx site, there will also be a facility building located close to the antenna farm. Therefore, the locations of the antennas will be important not only for the technical coverage requirements but also for the health and safety requirements and for preventing interferences between two different systems. The Contractor shall get the National Health and Safety Certification for Tx site from BGR national authorises

3.5.10. The Contractor is responsible for antenna mounting and installation for BRASS and DLOS systems.

3.5.11. The Contractor is responsible for antenna mast provision and installation (including lightning protection and aircraft warning lights in accordance with ICAO standards) for BRASS and DLOS systems. Detailed specification of the antenna masts is described in Book II Part IV Annex-A, Appendix 1.

3.5.12. The Contracrtor is responsible for connection (with associated trays and ducts) from antennas to Power Distribution Board (including power cables for aircraft warning lights)

3.5.13. The Contractor shall conduct topographic survey as well as necessary soil survey at the locations projected for each antenna for BRASS and DLOS systems. Hence, it is advisory that the Contractor assures appropriate expertise and equipment (as much as practicable at that stage) to enable at least initial assessment of soil conditions during the site survey.

a. The Contractor shall provide and install BRASS dedicated Electrical Power Distribution Boards (Panels) (with associated cabling and plugs) in such a manner that they will be integrated into Prime Power Supply System (provided by HN), SB PSS (provided by HN) and NB PSS (provided by the Contractor and HN) at all BRASS sites. The integration into Prime Power Supply System, SB and NB PSS is the Contractor’s responsibility

3.5.14. The SB PSS shall be fully integrated with the NB PSS (provided by the Contractor and HN) and with the Prime Power Supply System provided by HN. It is the Contractor's responsibility to assure this integration.

3.5.15. Contractor shall provide and install BRASS dedicated UPSs (NB PSS) with batteries. The batteries shall be of a type and model that does not require dedicated ventilation. Detailed specification of the NB PSS is described in Book II Part IV (SOW) Annex-A;

3.5.16. The Contractor shall connect all BRASS equipment (except for the 5Kw transmitters) to BRASS dedicated UPS. The integration of BRASS dedicated electrical power distribution panel (EPDP) into Prime Power Supply System (provided by HN), SB (provided by HN) and NB PSS (provided by HN and Contractor) is the Contractor's responsibility. Contractor shall also provide power distribution and feeding/routing via raised floor whereas HN will provide Main Power Distribution Board and raised floor.

3.5.17. Contractor shall connect all Contractor provided BRASS equipment to SB PSS.

3.5.18. The contractor shall accomplish associated cabling, cable racks and apertures drilling (including possible finishing works after the cable installation and drilling) for BRASS dedicated EPDP installation.

3.5.19. The Contractor is responsible for provision, installation and connection of the BRASS dedicated EPDPs to MPDP including TEMPEST requirements for BRASS system in premises at the ACMS, Tx and Rx sites in compliant with SDIP 29/2.

3.5.20. The design and installation of any TEMPEST driven equipment and devices (i.e. Power Line Filters) shall be implemented by the Contractor in compliant with SDIP 29/2.

3.5.21. The Contractor is responsible for design and installation of grounding connections from Contractor's provided equipment to the earth rails installed by HN in BRASS dedicated rooms

3.5.22. The Contractor is responsible for Lightning protection and grounding study / grounding resistance measurements at the BRASS and DLOS antenna locations, masts and surge arresters installed on the antenna feeders (and their earthing) in order to ensure good operation including lightning protection. Contractor will design and install grounding according to IEC 60364. When grounding requirement pertains to RED and BLACK equipment the design and installation shall be implemented according to 'Facility Design Criteria And Installation of Equipment for the Processing of Classified Information SDIP 29/2 July 2015 (NR)

3.5.23. The antennas shall have a suitable ground and shall be connected to the grounding and earthing network according to respective BGR regulations. The antenna fields grounding and earthing network as well as connection between earthing networks are the Contractor's responsibility.

3.5.24. Signal grounding shall be provided by the Contractor in compliance with SDIP-30

3.5.25. The Contractor is responsible for grounding connections of the BRASS system installed in the BRASS dedicated premises to the existing grounding network of the buildings.

3.5.26. Warning signs provision and installation around the antennas (danger zones marking);

3.5.27. If Factory Acceptance Tests (FAT) for BRASS requires usage of cryptographic PFE at the Contractor's premises, and if the Purchaser confirms the availability of the Cryto by the time of FAT, the Contractor shall:

a. request the loan of cryptographic equipment and testing cryptographic keys from Purchaser at least 2 months before the start of FAT;

b. transportation of cryptographic equipment to and from contractor's premises shall be at contractor's expense;

c. follow NATO instructions for control and safeguarding of NATO crypto material (SDIP-293/1) in contractor's premises.

3.5.28. During the project implementation, the Contractor shall check the CW activities to ensure that infrastructure is suitable for BRASS accommodation (in terms of floor space allocation, power budget, cooling capacity etc.). In order to assure proper coordination of Civil Works (CW) and Electronic Works (EW) packages and to execute above mentioned controls, the Contractor will liaise with the HN as specified at SOW paragraph 12.2.

3.6. Site Survey Reports (SSR)

3.6.1. The Contractor shall perform site surveys at each site (3 weeks after the Effective Date of Contract-EDC) to determine any requirements to prepare the site locations to receive the equipment for installation. The Contractor shall also verify the listing of existing equipment and other site specific details made available by the HN, as preliminarily stipulated in SOW Annex C. Any possible requirements for civil works shall also be identified.

3.6.2. Following completion of the site survey, the Contractor shall submit (in one week) a draft Site Survey Report (SSR) that provides, but is not limited to the following information: all available and usable floor plan layouts, cable routing, configuration and wiring assignments, antenna farm layout with associated cabling and ducting, antenna access roads layout, SB and NB PSS system layout and schematics, graphical depiction of contractor provided equipment and its integration with equipment, elements and systems provided as PFE, basic civil works requirements. Beside the graphics and schematics, the Contractor shall also provide relevant information in narrative form including where applicable matrixes, tables and item lists. The Contractor shall submit the draft SSR in quantities specified in SSS and in format specified in SOW paragraph 13.3 below to the Purchaser for review within one (1) week after the relevant Site Survey.

3.6.3. Site Survey Report shall also include a Site Survey Plan. Site Survey Plan shall contain but not limited to: draft site survey workbook of checklists, fill in forms, installation sketches, contact information, installation specifications and any other documentation proposed to support site surveys.

3.6.4. The Purchaser will review the Site Survey Report in one (1) week and send the comments to Contractor.

3.6.5. One (1) week after receipt of the Purchaser's comments, the Contractor shall deliver, for Purchaser's acceptance, the final version of the SSR that shall incorporate all Purchaser comments.

3.7. Site Installation Specifications (SIS)

3.7.1. The Contractor shall provide to the Purchaser and Host Nation, for each site, a Site Installation Specification (SIS) documentation with information as stipulated below.

3.7.2. The SIS document is a very detailed and upgraded document prepared based on Site Survey Report (SSR) and SPDP.

3.7.3. The Contractor shall deliver the SIS to the Purchaser in a First Draft form at EDC + 5 months (20 weeks) as well as installation drawings, specifications and standards that he intends to employ during production and installation. The Final Draft of the SIS shall be delivered to the Purchaser at EDC + 24 weeks. Before delivery of the Final Draft version the first draft version of the SIS is to be reviewed and discussed as laid out below paragraphs.

3.7.4. The Purchaser will need two (2) weeks for review of the SIS package and to send the comments to the Contractor. The Contractor shall prepare and submit final draft SIS covering each of the sites in one week after receiving Purchaser's comments. This Final Draft SIS shall be detailed enough to allow assessment of the magnitude of site installation works to be performed by the Contractor at each site.

3.7.5. Upon review by the Purchaser and Host Nation of the Final Draft SIS, the Purchaser will co-ordinate a meeting, with the participation of Host Nation and Contractor at EDC + 24 weeks in order to provide comments on the Final Draft SIS. This meeting may coincide with a PPM. Agreed site availability dates will be recorded at that meeting.

3.7.6. After this meeting, an updated and complete version of the final SIS shall be provided (if required) by the Contractor in one week for approval. Parties will aim at finalising the site facilities requirements so that each site will be ready before delivery of the BRASS system equipment to the sites.

3.7.7. Approval of the SIS by the Purchaser in no way relieves the Contractor of his responsibilities to achieve the contractual and technical requirements of this Contract.

3.7.8. The draft and approved SIS shall be incorporated in the PIP.

3.7.9. The Contractor shall provide for each site a complete SIS with updated "As Designed" drawings of how all of the major assemblies of the Purchaser/Contractor supplied equipment are to be physically installed and mechanically/electrically integrated.

3.7.10. The SIS documentation, as a minimum – but not limited to, shall consist of:

a. All applicable floor and wall plans to include cable penetrations, and routing;

b. Listing of equipment to be installed including functional description of each components as well as general equipment specifications to include;

c. physical specifications - height, length, width, and weight (floor loading) of each equipment rack, cabinet and console,

d. equipment rack, cabinet and console templates,

e. manufacturer's specific machine configuration and space requirements,

f. maintenance access requirements for each equipment rack, cabinet and console.

g. Equipment layout including consideration of space between power and communication lines and RED/BLACK cables runs as stipulated in the document listed in SOW Section 4 above (paragraph 4.1.1. g and h);

h. Location plans of all ancillary equipment, terminations and/or connections;

i. Plans and descriptions presenting all grounding conductors, electrodes, joints and their connections to the existing earthing and grounding systems as per SDIP 29/2[2];

j. Physical details of all cable racking, cable runs and cable routing with length, cable numbers and cable functions to include as appropriate all connections, connectors and sockets;

k. Details covering all wiring termination points including wire numbers and colour coding, if applicable;

l. The functions of all inter-connecting cables with their codes, colour code and the function of each separate conductor;

m. The physical details covering all cable trays and ducts for inter-communication equipment being part of this contract;

n. The list and layout of equipment as well as facing of cabinets to be installed including functional description of each component;

o. Site layout, System/equipment site installation plans and programme, antenna farm area installation;

p. Exact location of Tx and Rx antennas as well as DLOS antennas and system at ACMS, Tx and Rx sites;

[2] *Ground, Secure: Ground serving as the grounding point for RED equipment. Because compromising emanations may be present on the grounding lead of RED equipment, the grounding electrode should be physically located within an inspectable space.*

Ground, Safety: Ground to protect personnel and equipment from electric shock and damage in the case of faults occurring in the equipment. The safety ground may be considered a secure ground if it is contained within an inspectable space.

Inspectable Space: Inspectable space is the three dimensional space surrounding equipment processing NATO classified information within which TEMPEST exploitation is not considered practical or where legal authority exists to identify and remove a potential TEMPEST exploitation threat

q. Definition of civil works, works and other tasks realized as a part of site preparation that are the Contractor's responsibility as stipulated in section 12 of this SOW. Physical details of all Civil Works equipment and structures shall be presented both graphically and in narrative form including where applicable matrixes, tables and item lists;

r. Identification of interfaces throughout the system to ensure interface compatibility as well as interfaces with communications infrastructure, power supply, cooling system and fire extinguishing system.

s. Listing and status/working conditions of non-project related equipment that has to be temporarily dismantled to allow works by the Contractor;

t. A heat load budget and Heating, Ventilating and Air Conditioning (HVAC) interface requirements for the BRASS BGR system equipment that shall contain and not be limited to:

u. heat load calculation of all active electronic equipment to be installed in the Communication Centre, in the equipments rooms and in the rooms where receiving and transmitting equipments will be installed;,

v. operating and none-operating environment conditions (temperature range, relative humidity range, atmospheric pressure, ingress protection (IP rating))

w. pressure and any special heating/cooling capacity requirements.

x. defining possible sources of electromagnetic interference (EMI) or radio frequency interference (RFI) (i.e. large electric motors, power transformers, conduit and cables used for electrical power distribution, etc.) that can render data networks inoperable

SECTION 4 SYSTEM DESIGN AND ENGINEERING

4.1. General

4.1.1. The contractor shall take into account the following reference documentation for his implemantation. Other reference documentation regarding communication system design was mentioned in respective annexes.

a. SECAN Doctrine & Information Publications (SDIP) – 28/1 (2009 December) NATO Zoning Procedures

b. SDIP 29/2 (2015 July) – Selection and Installation of Equipment for the Processing of Classified Information.

c. SDIP 31/2 (2011 March) – Instructions for the Control and Safeguarding of NATO COMSEC Materials for Non-NATO Nations and International Organizations (NNN/IO)

d. STANAG 4370 (Environmental testing and associated Allied Environmental Conditions Test Publications (AECTP))

e. STANAG 7201 (The Human Engineering Test and Evaluation Procedures for systems, equipment and facilities)

f. STANAG 4133 (Method of specifying electrical power supplies: standard types of electrical power)

g. IEC-60364, Part 4, Chapter 41 (Electrical installations of buildings, Protection for safety, Protection against electric shock)

h. IEC 332 (Tests on electric and optical fibre cables under fire conditions)

i. IEC 1034 (Measurement of smoke density of cables burning under defined conditions)

j. ASTM E 662 (Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials)

k. MIL-STD-454 (Standard of Workmanship)

l. MIL-STD-1472D (Consoles/Workpositions)

m. MIL-STD-461-F (Electromagnetic Interference)

n. MIL-STD- 882E (System Safety)

4.1.2. The Contractor shall implement a system engineering programme that shall be a continuing function throughout the duration of the Contract in order to provide technical integration and co-ordination of design, fabrication, installation and test activities.

4.1.3. The system engineering programme shall include:

a. Compatibility of hardware and software;

b. The justification for function and performance allocations to various sub-systems and equipment to achieve overall system requirements;

c. Methodology for identification and resolution of technical problem areas that may develop during design, fabrication, installation and testing.

4.2. System Engineering and Design Plan (SEDP)

4.2.1. The Contractor shall provide, in accordance with the PIP Section 2, a System Engineering and Design Plan (SEDP) that shall establish and define the system engineering programme.

4.2.2. The plan shall include:

a. Listing of Major and Minor Equipment to be installed. This listing shall contain a brief functional description of each item, its operating characteristics, and any abnormal criteria required for installation

b. Development and preparation of detailed equipment design specifications in line with the technical approach appropriate to fulfil the Purchaser's performance requirements;

c. Equipment performance calculations;

d. The description of the hardware, software and mechanical integration of assemblies, sub-assemblies and components into a coherent system;

e. Identification of interfaces throughout the system to ensure interface compatibility and interface control;

f. Analysis of the design approach applied for each sub-system. The analysis shall also describe the design approach applied for equipment and structures that will be installed and implemented by the Contractor under Civil Works package. The Contractor shall also describe the measures taken to ensure efficient and effective integration of sub-systems into respective systems and consequently into complete BRASS System;

g. Development and preparation of detailed engineering drawings;

h. Technical reviews and reports;

i. Co-ordination with fabrication, installation and testing activities;

j. Engineering Implementation Schedules. These schedules shall cover milestone dates such as delivery of Contractor furnished equipment (CFE) and Purchaser furnished equipment (PFE); installation; number of required tests; interface with other systems;

k. Planned Layout. This section shall contain the criteria for the planned equipment layout, a block diagram to show signal flow, considerations of radio frequency interference and radiation effects, interface tie-ins, and considerations such as efficiency of the proposed configuration in terms of access requirements for operation, maintenance, installations, and removal. Included will be consideration of space between equipment walls ceilings, plus recommended distances between power and communication lines and/or red/black cable runs in accordance with the NATO TEMPEST protection practices. Reference shall be made to all applicable system drawings, and recommendations for maximum and/or minimum configurations

l. Protocol of Receipt of the Delivery of HW on Site (DHS): This document constitutes proof of delivery by the Contractor of the hardware items. The HW delivered on site is verified against two lists: shipping list (check qty/identification of boxes/pallets) and items lists (once the boxes are open, and it is verified that the right qty of equipment has been delivered on site iaw As-Designed products lists). Damages or incidencies are recorded in the Protocol of receipt. But this document does not constitute a formal handover of the ownership of the equipment.

m. Checkout procedure: This will cover the checklist to be inspected once the installation is done: Equipment is properly installed, labels properly affixed, grounding, equipment labels identification, power connection, all equipment is installed in the rack iaw the cabinet facing and the list of equipment. This checkout procedures can also be used prior to the Acceptance of the Installation/Integration

n. System Safety Engineering plan;

   i. System Safety Hazard Analysis Report

   ii. Environmental and Safety Requirements

4.3. System Safety Engineering Plan (SSEP)

4.3.1. The Contractor shall provide, as part of the SEDP, a System Safety Engineering Plan (SSEP) in accordance with MIL-STD-882E Section 4", to fulfil the safety requirements of the Contract.

4.3.2. The Contractor shall document in his SSEP the procedures to control design, selection, procurement and manufacture of parts and materials. Revisions to the SSEP shall incorporate Purchaser-agreed changes, additions or deletions that have evolved during the conduct of the Programme

4.3.3. The Contractor shall apply engineering principles, criteria, and techniques to identify and eliminate safety hazards in the BRASS BGR system in accordance with Military Standards (MIL-STD)-882E and equivalent HN law if any.

4.3.4. The Contractor shall design and/or select all equipment on the basis of inherent safety features that protect not only the human operators and maintainers but also the equipment itself.

4.3.5. Safety verification shall be conducted at each site prior to each ISAT to ensure compliance with the SSEP. The safety verification shall verify the safety requirements for all types of hazards not eliminated by design. The Contractor shall document the safety verification process in the SSEP. The Contractor's responsibilities shall be defined in the SSEP.

4.3.6. The Contractor shall describe his risk assessment method in the SSEP.

4.3.7. Electromagnetic Interference and Compatibility (EMI/EMC) shall be taken into account in the SSEP in accordance with SOW paragraph 4.4.

4.3.8. System Safety Engineering Plan shall also include System Safety Hazard Analysis Report (SSHAR) as mentioned in MIL-STD-882E.

4.3.9. **Environmental and Safety Requirements:** System Safety Engineering Plan shall also define Environmental and Safety Requirements as defined at following sub-paragraphs:

a. Environmental requirements shall be implemented and verified by the Contractor in accordance with National laws and regulations.

b. The Contractor is obliged to comply with the national legislation concerning job accidents, incident prevention and hygiene at work. The Contractor is also obliged to make legal arrangements for protection of the life and security of all the personnel and to guarantee medical assistance whenever necessary due to job accidents. The same legal arrangements shall be applied to sub-contractor personnel under Contractor's responsibility.

c. Health and Safety Hazards: The physical presence, operation and maintenance of the system shall pose no health or safety hazards to personnel

d. Carcinogenic and Radio-active Materials, Mercury: Materials containing known carcinogenic substances, radio-active materials or mercury shall only be used with the prior authorisation of the Purchaser with the exception of Radium that is not to be used to achieve self-luminosity.

e. Hazard Warning Labels: Equipment warning labels shall be attached wherever there is any potential electrical, chemical, electromagnetic radiation or heat hazard or a potential hazard caused by human contact with materials, particularly when removal of covers will expose the hazard.

f. Production of Toxic or Corrosive Fumes: Materials used, under the specified environmental and service conditions or as a result of heating due to conflagration, shall not liberate:

   i. gases that combine with the atmosphere to form an acid or corrosive alkali,

   ii. toxic or corrosive fumes that would be detrimental to the performance of the equipment or health of personnel,

   iii. gases that will produce an explosive atmosphere.

g. Asbestos Materials: Equipment shall not contain any asbestos material

h. Glass Fibre Materials: Glass fibre materials shall not be used as the outer surface or covering on cables, wire or other items where they may cause skin irritation to operating personnel.

i. Moving Part Protection: Any rotating or other moving part such as ventilators, blowers, drive belts etc., shall be shielded or protected adequately to prevent accidental contact by and injury to any personnel during operation and maintenance.

j. Equipment Edges: Projecting and overhanging edges of equipment items shall be kept to a minimum. Edges and corners shall be rounded.

k. Environmental Conditions Indoors, temperature, humidity: Equipment shall function without degradation under the environmental conditions as specified at SOW Annex-A paragraph 6.3.2

l. Noise Levels: Noise generated by the system in operation shall not exceed the levels specified in the local regulations or Environmental Noise Directive (2002/49/EC) whichever it is more restrictive for operational, maintenance areas

	Maximum noise level in operational and maintenance areas	**Maximum noise level in all other areas**
Static Sites	55 dB(A)	75 dB (A)

4.4. Electromagnetic Interference and Compatibility (EMI/EMC)

4.4.1. As part of the SEDP, an EMI/EMC section – to be provided by the Contractor – is required. This section shall identify all measures taken to ensure electromagnetic compatibility of the BRASS systems and its apparatus, in accordance with 2004/108/CE and MIL-STD-461-F. The standards/norms applied by the manufacturers shall be mentioned. A Certificate of Compliance to the mentioned norms shall also be included. In his design, the Contractor shall take into account the constraints of the site, number of simultaneous transmissions and EMC. An EMC study of the transmitter site shall demonstrate that Public and Occupational exposure levels are within limits stipulated in respective international and national guidelines.

4.4.2. With regards to Electromagnetic Compatibility (EMC), the BRASS BGR system and their electronic equipment, during its lifetime, shall operate within its defined specifications. This shall be assured both in the military and in the civilian environment.

4.4.3. Power supply (including SB and NB PSS), HVAC, lights, other electrical and mechanical equipment and installations as well as buildings and structures shall not have a negative influence on the communication systems and vice versa.

4.4.4. The EMI/EMC section shall contain and not limited to the following items:

a. Management Controls: Specific organisational responsibilities, lines of authority and the control of implementation planning etc. shall be stated, together with details of the EMI/EMC requirements imposed on sub-contractors and test requirements placed upon testing establishments.

b. Mechanical Design: The control plan shall describe criteria for selection at the design stage of the materials and manufacturing techniques to be employed so that inherent attenuation to electromagnetic emanations and susceptibility shall be provided, without compromising other mechanical considerations of individual equipment design and specifications.

c. Electrical/Electronic Circuit Design: This section shall fully describe the EMI suppression techniques that shall be applied to all parts and circuitry, in terms of both the generation of undesirable emanations and susceptibility to the fields and voltage levels as specified elsewhere in this Contract and, for the case of sub-systems/equipment units, levels allocated by the Contractor (including specific requirements placed on sub-contractors) for the various equipment units comprising the BRASS BGR system

4.4.5. **Electromagnetic Interference Radiated Immunity**:

a. The BRASS BGR system shall remain functional within its specifications during and after exposure to external electromagnetic fields as per applicable EN norms.

b. The BRASS BGR system shall remain functional within its specifications during and after exposure to external electromagnetic fields caused by transmitters installed nearby, as per applicable EN norms.

c. The Contractor shall provide the EMC compatibility between equipment to demonstrate that the system works as a whole. The interoperability testing shall obviously be part of the system acceptance. EMC equipment level acceptance shall be done by verification of EMC compliance certificates.

4.4.6. **Electromagnetic Interference Conducted Immunity**:

a. The systems shall remain functional within their specifications during and after exposure to conducted interference/ currents in general as per applicable EN norms.

b. The systems shall remain functional within their specifications during and after exposure to conducted interference currents entering via the power supply as per applicable EN norms.

c. The systems shall remain functional within their specifications during and after exposure to conducted interference currents caused by exposure to electromagnetic fields as per applicable EN norms.

d. Transients: The shelters (if required) for equipment shall be able to handle fast transients/ burst as per EN 61000-4-4.

4.4.7. Electrostatic discharge: The systems shall remain functional within their specifications during and after an electro static discharge as defined in EN 61000-4-2.

4.4.8. **Lightning Protection**

a. The BRASS system shall comply with the international standard for lightning protection – International Electro technical Commission (IEC)-62305.

b. The equipment shall not be damaged and the Communications and Information Systems (CIS) equipment shall continue to operate without degradation when subjected to the lightning waveforms conforming to AECTP 250 - leaflet 254 atmospheric electricity and lightning.

c. Appropriate Surge Protection Devices (SPD) and other lightning protection measures according to EN 61643-11, IEC 61643-12 and IEC 62305 shall be used to provide sufficient protection for the equipment.

d. The earth electrode shall be able to handle the lightning current for dispersal into the ground.

e. The equipment shall withstand the effects of induced currents into the system as per EN61000-4-5, Limit: Level 4.

f. The radio-frequency (RF) coaxial cables from the antennae connected to the related CIS equipment shall be equipped with an appropriate SPD and provide sufficient protection.

g. The SPD devices shall be able to handle the multiple strokes lightning flash consisting of average of 3-4 strikes.

h. The Contractor shall provide and install the lightning protection measures for each equipment and CW that are provided and implemented by the Contractor.

4.4.9. **Exposure to Radio Frequency fields**

a. The contractor shall apply the doctrine stipulated in STANAG 2345 or equivalent host nation law for evaluation and control of personnel exposure to radio frequency fields 3 kHz to 300 GHz. It is the contractor's responsibility to obtain the HN national regulations regarding this issue.

4.5. TEMPEST Requirements

a. TEMPEST protection shall be achieved by means of TEMPEST counter measures to prevent compromising emanations (CE) exiting the facility.

b. Unless otherwise stated, the BRASS installation shall comply with the applicable documents (SOW SECTION 4 above Ref a – c). The following counter measures shall be used to avoid electromagnetic CE(s):

   i. The use of signal and power line low leakage filters.

   ii. Ensuring of sufficient distance between RED equipment and Inspectable Space (IS) perimeter.

   iii. Minimum Separation between any RED processor and RF transmitters as specified in SDIP 29/2

   iv. Ensuring conductor free zones between RED equipment and BLACK equipment/ lines.

   v. Ensuring adequate separation between RED and BLACK lines.

   vi. Shielding of lines where needed to minimize CE emanations and/ or induction.

   vii. Connecting all equipment to signal ground rails provided by the HN.

c. The Power Line Filter (PLF) used for separation RED processors/ Black equipment shall provide a minimum attenuation of 60 dB over the frequency range of 100 kHz to 1 GHz. It shall have low current leakage to avoid unwanted tripping of the Residual Current Detectors (RCD).

d. TEMPEST Facility Zoning information for ACMS site is available in SOW Annex-C. BRASS equipment shall be TEMPEST protected.

e. In order for the Contractor to integrate the crypto devices within BRASS system, the Contractor shall comply with the requirements as stated in the security reference documents from Book II Part IV SOW paragraphs 4.1.1. & 5.2.1.

4.6. System Design

System Design shall include the following activities, documents and reports

4.6.1. System Level Technical Review:

a. The Contractor's system engineering programme shall include provision for Critical Design Review (CDR). During technical review the Purchaser shall examine the functional requirements and the draft Detailed Design Review (DDS). The SEDP shall also identify and list specific CI(s) subject to technical review at sub-system and equipment levels. This listing shall be subject to update until such time as the system hardware and software baseline is established.

b. For Critical Design Review, the Contractor shall;

i. Provide well defined CDR entry and exit conditions based on contract requirements.

ii. Demonstrate, wherever possible, the products under review,

iii. Substantiate decisions with technical details and associated rationale,

iv. Ensure appropriate participation including that of subcontractors, vendors, and suppliers,

v. Host the review at an appropriate Contractor facility (or facilities),

vi. Provide administrative support (e.g. resources, materials, meeting rooms, security),

vii. Provide agendas,

viii. Provide minutes that document the proceedings including key points, decisions, and issues with associated rationale; open and unresolved items with their closure requirements and responsibilities.

c. Technical review shall be conducted to demonstrate progress in converging on viable traceable system requirements that are balanced with cost, schedule and risk.

d. Technical Review shall confirm the total system detailed design approach (integrated composite of people, product and process solutions) satisfies the functional baseline, risks are mitigated with closure plans for remaining risks demonstrating the required progress and that the total system is ready for detailed design

e. CDR shall consider all aspects of the design and cover all functional and performance requirements. It shall include for each Configuration Item (CI):

   i. Allocated functional and performance requirements derived from overall requirements specified in the Contract;

   ii. CI specifications, this to include drawings, schematic diagrams, models, manuals and other data as appropriate and addressing as a minimum:

      (1) functional specifications;
      (2) performance specifications (technical and environmental) including RAMT requirements;
      (3) interface requirement specifications;
      (4) interface control document (ICD) specifications;
      (5) physical layout (form and fit), including human engineering;
      (6) sub-system integration requirements;
      (7) current fabrication status and test results available to validate the design approach and achievement of relevant specification.
      (8) Site specifications

f. In preparation and conduct of a technical review the Contractor shall:

   i. Host and develop the agenda for the reviews;

   ii. Provide the Purchaser with appropriate technical material including draft CI specifications in quantities specified in SSS and in format specified in SOW paragraph 13.3 below;

   iii. Provide reports from and ensure participation by sub-contractors, vendors and suppliers as necessary;

   iv. Organise and present briefings as necessary;

   v. Provide appropriate facilities, administrative services and summary meeting reports;

vi. Provide schedule, test and design data and supporting analysis for the reviews;

vii. Provide appropriate technical personnel at the reviews;

viii. Provide the Purchaser with draft copies of the summary meeting reports in quantities specified in SSS and in format specified in SOW paragraph 13.3 below not later than two (2) weeks subsequent to the reviews.

g. The principle purpose of Purchaser participation is to approve the Contractor's design. Such approval is based upon Contractor supplied information and in no way relieves the Contractor's obligation to deliver a system wholly in conformity with the technical and environmental performance specifications contained in this Contract. Sufficient detailed information and test data shall be provided to assure the Purchaser that all functional and performance requirements have been achieved or have been modified to achievable limits without prejudice to contractual specifications.

h. CDR Entry Conditions

i. All following relevant documentation have been delivered

(1) Approved Final PIP Documentation
(2) Draft System & Subsystem Detailed Design Specifications (DDS);
(3) Interface Requirement Specifications;
(4) As Designed Product Drawings and Associated Equipment Lists
(5) Site specifications.
(6) CDRLs (Contractual Data Requirements Lists)

ii. The HW for related sites has been proposed by the Contractor.

iii. Approved Agenda (CDR)

iv. All Documents related to CDR reviews have been submitted and these documents have been reviewed by the NCI Agency.

v. Site Preparation Data Package (SPDP) as defined in SOW Section 12 have been finalized and approved

i. CDR Exit Conditions

   i. The documents related to CDR review have been formally submitted by Contractor and approved by the Purchaser.

   ii. All actions items, as documented in the minutes of the CDR meeting, have been agreed by the Purchaser as closed.

   iii. The HW for sites has been selected.

   iv. Overall Summary Schedule provided by Contractor.

   v. Technical risks have been assessed and minimised.

   vi. RAMT deliverables has been agreed

   vii. Revised PIP Documentation (if required).

   viii. Minutes has been recorded and approved.

j. For CDR documentation, the Contractor shall deliver “Detailed Design Specifications (DDS)” including: equipment design specifications, engineering data and drawings, preliminary installation drawings for each installation location as long as infrastructure requirements (power, cooling and civil works) and define the Configuration items including drivers/software adaptations, as compliant with SOW paragraph 4.6.2 below.

k. For CDR documentation, the Contractor shall also deliver Interface Control and Management document defining detailed interface requirements throughout the system and resolving methods to ensure interface compatibility, including system design, communications infrastructure and civil works (power supply, HVAC, fire extinguishing system, etc.) related interface issues.

l. For CDR documentation, the Contractor shall deliver “Interface Requirement Specification” as compliant with SOW paragraph 4.6.3 below

m. For CDR documentation, the Contractor shall deliver “As Designed Product Drawings and Associated Equipment Lists” as compliant with SOW paragraph 4.6.4 below

n. An output of the CDR shall be the CI specifications. The equipment covered by a CI specification shall be subject to configuration management once the specification has been approved. The Contractor shall provide the final version of CI specifications in quantities specified in SSS and in format specified in SOW paragraph 13.3 below to the Purchaser five (5) weeks after the CDR meeting.

4.6.2. System & Subsystem Detailed Design Specifications (DDS)

a. The purpose of the DDS is to provide visibility for the Purchaser into the proposed system development and to provide documentation against that the Purchaser may evaluate progress, foresee difficulties and provide guidance and recommendations to protect its interests.

b. The DDS shall encompass the areas set forth in PIP Section 2 in a refined and comprehensive manner, at least to the CI level.

c. The System & Subsystem DDS shall contain as a minimum (but not limited to):

i. Conformance Matrix linking Contract Requirements to details of the design specification;

ii. Presentation of detailed equipment and civil works (as stipulated in section 12) design specification;

iii. Security design documentation;

iv. Equipment performance calculations;

v. Identification of interfaces throughout the system to ensure interface compatibility;

vi. Presentation of detailed engineering drawings including The NATO Operational View (NOV) and NATO System View (NSV) diagrams as required in the SOW, SOW Annex-A and Annex-B for each capability;

vii. Definition of the CI(s);

viii. An Interface diagram (detailed);

ix. Software licensing, support and warranty agreements;

x. Design for System Management and Configuration Tools including security considerations.

xi. Proposed antenna definitions and specifications of materials used as to include requirements specified at Book II Part IV Annex-A Appendix-1

xii. The physical layout and operation principles of the BRASS BGR systems for each capability.

xiii. Proposed system topology, routing and transport for each capability;

xiv. All design constraints identified in the Detailed Design Specification Plan, for each capability;

xv. Detailed description of how Contractor's proposed system shall meet the functional requirements in the System Requirement Specifications (SRS-SOW Annex-A for each capability;

xvi. Detailed description of the main design features of the interfaces with each relevant other system in the SRS in line with the associated design constraints identified in the SRS for each capability.

xvii. A list of equipment (Hardware and software) planned to be delivered, for each capability

d. The Purchaser will review the document and provide its comments and observations in the Technical Reviews to be held according to the SSS.

e. The Contractor shall deliver the draft version of the DDS to the Purchaser (in CDR package) not later than four (4) weeks prior to the CDR meeting.

f. The comments and observations provided by the Purchaser shall be incorporated by the Contractor into the DDS.

g. It shall be noted that the DDS are the product of the Contractor. Review of the draft version and delivery of the final version does not imply acceptance of the detailed design by the Purchaser. 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 design proves deficient in terms of the Contract functional and/or performance requirements.

4.6.3. Interface Requirements Specification (IRS)

a. The contractor shall prepeare IRS document as part of Detailed Design Specificaction (DDS) documentation that specifies the interfaces among the HW and SW components of the system.

4.6.4. "As Designed" Product Drawings and Associated Equipment List

a. The Contractor shall prepare product drawings and associated equipment Lists provide engineering data to support competitive procurement and maintenance for hardware. These drawings represent the highest level of design disclosure.

4.7. Workmanship, Labelling and Cabling

4.7.1. MIL-STD-454 Requirement 9 shall be applied for Standard of Workmanship.

4.7.2. Weight Labelling: Items weighing more than the one-person values in table "Weight Limits" shall be prominently labelled with the weight of the object and the lift limitation, e.g. two-person lift, three-person lift, mechanical lift, etc

	Handling Function	**Weight Limit (kg)**
a.	Lift object from the floor and place it on a surface not greater than 1.5 m above the floor.	16
b.	Lift an object from the floor and place it on a surface not greater than 0.9 m above the floor.	20
c.	Carry an object up to 10 m.	19

4.7.3. European Community EMI Conformity for COTS Items: Each COTS item, including cables, shall bear the European Community (EC) CE conformity marking and the Contractor shall present to the Purchaser a copy of the relevant Manufacturer's Declaration of Conformity, i.a.w the EC Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

4.7.4. Cables/Connectors:

a. Power cables shall be Low Smoke Zero Halogen (LSZH) cables. All the other cables are highly recommended to be LSZH cables. In any case the Bulgarian regulation shall be followed in this matter

SECTION 5 SYSTEM SECURITY REQUIREMENTS

5.1. Purpose

This section describes the minimum security requirements for the BRASS BGR system, in accordance with the current NATO and National Security Policies concerning the protection of NATO classified information and National classified information.

5.2. References

5.2.1. NATO Security Policies are contained in the following documents for BRASS project.

a. C-M(2002)49-Corr9 (2002-June-17) – NATO Security Policy

b. AC/35-D/2000-Rev7 (2013-Jan-07) Directive on Personnel Security

c. AC/35-D/2001-Rev2 (2008-Jan-07) Directive on Physical Security

d. AC/35-D/1030 (2005-May-20)– Guidelines on Physical Security

e. AC/35-D/2004-REV3 (2013-Nov-15) – Primary Directive on CIS Security

f. AC/35-D/2002-Rev4 (2012-Jan-17) Directive on the Security of Information

g. C-M(2008)0113 (2008-Nov-27) The Primary Directive on Information Management

h. AC/35-D/1021-Rev 3 (2012-Jan-31) Guidelines for the Security Approval or Security Accreditation of Communication and Information Systems (CIS)

i. AC/35-D/1017-Rev2 (2003-Feb-26) Guidelines for Security Risk Assessment and Risk Management. of CIS

j. AC/35-D/1014-Rev3 (2012-Jan-31) Guidelines for the Structure and Content of Security Operating Procedures (SecOps) for CIS

k. AC/35-D/1015-Rev3 (2012-Jan-31) Guidelines for the Development of Security Requirements Statements (SRSs)

l. AC/35-D/1019-Rev1 (2008-Dec-12) Guidelines for the Security Evaluation and Certification of Communication and Information Systems (CIS)

m. AC/322-D/0030-Rev5 (2011-Feb-23) INFOSEC Technical and Implementation Directive for the Interconnection of Communication and Information Systems CIS

n. AC/322-D/0049 (2002-Apr-29) Directive for Transmission Security

o. AC/322-D/0047-Rev2 (2009-Mar-11) INFOSEC Technical and Implementation Directive on Cryptographic Security & Cryptographic Mechanisms

p. AC/322-D(2007)0036 (2007-July-12) Technical and Implementation Directive on Emission Security.

q. AC/322-D(2005)0031 (2005 June 20) – INFOSEC Technical & Implementation Directive for the Protection of the Confidentiality of NATO Information within non-NATO Nation Systems

r. AC/322-D/0048-REV2 (2011-Dec-09) Technical and Implementation Directive on Computer and Local Area Network (LAN) Security

s. NATO Computer Incident Response Capability (NCIRC) security settings for Windows operating systems

t. AC/35-D/2005-Rev2 (2010-Oct-18) INFOSEC Management Directive for communication and information systems

5.2.2. BRASS Associated Security Policies are contained in the following documents

a. Community Security Requirement Statement (CSRS) for BRASS Ver. 4.0 (2011 Sep 19)

b. BRASS System Interconnection Security Requirement Statement (SISRS) v1.0; 2013 Jan 21 (As Annex-B to CSRS for BRASS)

c. System Security Requirement Statement (SSRS) for BICC; 2011 Sep 29; Ver. 1.0 (As Annex A to CSRS for BRASS)

d. Security Accreditation Plan (SAP) for BRASS v 1.0 dated Nov 2010

5.2.3. BRASS BGR Project associated Security Policies are contained in the following document

a. MOA between MOD BGR and NCI Agency related to the cooperation on C4ISR activities (2010 February 24)

5.2.4. The National Security policies of BGR are contained in the documents to be provided by Security Accreditation Authority (SAA) of BGR.

5.2.5. In case of inconsistency between NATO Security Policy Documentation and BRASS Specific Security Documentation, the NATO Security Policy Documentation takes precedence.

5.3. BRASS BGR Systems Security Requirements

5.3.1. General Classification Requirements for BRASS documentation: The BRASS BGR Security mode of Operation will be NATO SECRET System-High: all data shall be protected as if it is NATO SECRET and a review and release capability has to be considered.

5.3.2. BRASS Security Accreditation

a. The overall BRASS BGR systems shall be subject to security accreditation. Ultimate aim is to achieve the 'Approval to Operate' (ATO) status for the entire BRASS BGR systems.

b. Bulgarian Security Accreditation Authority (SAA) will approve all security related documentation and will issue interim and final Security Accreditation Statement for BRASS BGR systems.

c. Security accreditation of interconnection of BRASS BGR to NS WAN is common responsibility of Bulgarian SAA and NATO CIS Security Accreditation Board (NSAB).

d. Security accreditation of interconnection of BRASS BGR to National Defence Network (NDN) is the responsibility of Bulgarian SAA.

e. For more guidance, on accreditation process, see Annex F (Support to Security Accreditation) of this SOW

5.3.3. Security Evaluation and Certification

a. The BRASS BGR system components shall possess Product Certification Reports issued by authorised Evaluation and Certification Authorities as results of Security Evaluation and Certification process as referenced in SOW Section 5 para: 5.2.1 above References (h) and (l).

b. Standard of certification process to be employed for the accreditation shall be approved in STVP.

c. All software shall be selected from NATO approved Fielded Product List (AFPL) for NS networks. All information assurance products shall be selected from NATO Information Assurance Product Catalogue (NIAPC) with 'green' evaluation scheme.

5.3.4. Security Requirements

a. The BRASS BGR system shall as a minimum have implemented the security mechanisms as defined in the NATO Security Policy and supporting directives and guidelines mentioned in SOW SECTION 5 above para 5.2.1 References (a through l), INFOSEC Technical and Implementation directives mentioned in SOW SECTION 5 above para 5.2.1 References (m through r) and BRASS Community security documents referenced in SOW SECTION 5 above para 5.2.2 References (a through d).

b. Every system that needs to be directly interconnected to BRASS must follow a series of rules. The security mechanisms given in the SISRS mentioned in SOW SECTION 5 above para 5.2.2 Reference (b) shall as a minimum be implemented. The compliance of external systems to those rules must be written and signed by the responsible SAA.

c. It shall be demonstrated that the BRASS BGR system shall possess all the security features stated in reference documents at SOW SECTION 5 above paragraphs 5.2.1.; 5.2.2.; and 5.2.3. Paragraph 5.2.1 applies to as well.

d. The BRASS BGR system shall apply C2 protective mechanism of Windows Operating System identical to the implementation used at the operational sites following NCIRC security settings for Windows operating systems. as set forth in SOW SECTION 5 above Reference (5.2.1.s).

e. Virus protection tools and/or mechanisms shall be applied to provide the integrity of the BRASS software and firmware. In addition all new software and firmware versions shall be scanned prior to their installation and shall be periodically checked to ensure that no virus and/or malicious code have been introduced.

f. BRASS BGR system shall apply the principle of Self-protecting node (SPN) – BRASS BGR shall treat other CIS as untrusted and implement protection measures to control information exchange with other CIS as set forth in SOW SECTION 5 above Reference (5.2.1.m).

5.3.5. BRASS Security Testing and Validation

a. It shall be demonstrated and shown that security mechanisms of the BRASS BGR system work as claimed in the System documentation. The demonstration shall be done to illustrate the mechanism used to prevent that an unauthorized user cannot bypass or otherwise defeat the security protection mechanisms.

b. The BRASS Initial Core Capability (BICC) core application software, being PFE, used in the Message Processing System (MPS) and Remote Supervisory and Control (RSC) shall be subject to security testing as being part of the final integrated system.

5.3.6. Security Deliverables

a. Security Deliverables are stated in Annex-E and SOW Section 13; paragraph 13.16.

b. The Security Accreditation Support package shall be integrated into the documentation delivered for FSA

5.3.7. Interconnectivity

a. The security accreditation shall be done for interconnection of BRASS BGR system to NATO systems and to national systems.

5.3.8. BRASS Crypto

a. The Purchaser will provide Ship-Shore and MRL Crypto.

b. The purchaser will provide Broadcast Crypto.

5.4. BRASS BGR Project Security Requirements

5.4.1. General Classification Requirements for BRASS documentation

a. The existence and purpose of BRASS system is classified as “NATO UNCLASSIFIED”. The BRASS security requirements associated with the enforcement mechanism are classified as “NATO RESTRICTED”.

b. Each paragraph in a classified document shall display a classification marking. The classification marking shall be placed prior to the beginning of the text of the paragraph, for example:

"13. (NR) Each paragraph in a classified document ……".

c. If a document contains restricted paragraph, the document shall be “NATO RESTRCITED”

5.4.2. The Contractor shall provide the security aspects related to requirements in the IFB. The Contractor’s design shall meet the safety and security requirements as set forth in the IFB. The Contractor shall agree to abide by and implement the security mechanism as defined in the NATO Security Policy and supporting directives as per the IFB references.

5.5. Information Exchange

5.5.1. Soft Copies of Documentation and information with“NATO RESTRICTED” and under classification level shall be exchanged between the Contractor and the Purchaser with appropriate ways in accordance with NATO rules.

5.6. Resourcing

5.6.1. The project manager and all personnel working on BRASS BGR project at HN or Contractor/Purchaser premises/sites shall be security cleared for “NATO SECRET” level.

5.6.2. Requests for visits shall be notified in writing and coordinated in advance with the Ministry of Defence (MOD) BGR and the NCI Agency. All visiting personnel shall comply with the security regulations of BGR and NATO. Minimum 25 working days is required for notification.

5.6.3. The project manager and the deputy project manager as well as system engineers and other engineers working at HN or Purchaser premises/sites shall be able to write and speak English to Level (3333) (STANAG 6001 (ED 2)).

5.6.4. The Purchaser reserves the right to request a replacement of personnel based on contract performance reasons.

5.7. Responsibilities

5.7.1. The Contractor shall be responsible to develop and implement the BRASS system in accordance with the IA requirements and provide all required security accreditation documentation for BRASS BGR system (in English and Bulgarian languages) and support the HN during the overall accreditation of the whole BRASS BGR system. The Contractor shall perform all activities as stated in the approved security documents complying with entire section 5 of SOW to achieve Interim Approval to Operate (IATO) before ISAT and the Full BRASS BGR System Security Accreditation before FSA in cooperation with responsible SAAs.

5.7.2. The Contractor shall provide the results of BRASS BGR system Security Testing and Evaluation within 2 (two) weeks of the tests along with test report.

5.7.3. The Contractor shall coordinate issues related to the security accreditation of the site premises with the Bulgarian SAA and HN.

5.7.4. The Contractor shall provide a Security Test & Verification Plan (STVP) that shall be used as an integral part of the overall BRASS BGR system Testing Activities. The STVP shall address in well-defined scenarios, all security functions required and implemented and shall demonstrate the implemented level of Security Functionality and Assurance in accordance with the Contract requirements and the corresponding NATO directives as stipulated in SOW SECTION 5 above Reference 5.2.1.i.

SECTION 6 QUALITY ASSURANCE (QA)

6.1. Introduction

6.1.1. The following reference documentation applies for QA purposes.

a. Allied Quality Assurance Publication (AQAP) -2000
b. AQAP - 2110
c. AQAP –2210
d. AQAP - 2070
e. AQAP 160 - NATO Integrated Quality Requirements for Software Throughout The Life Cycle
f. AQAP - 169 NATO Guidance on the use of AQAP-160
g. ISO/IEC 12207 – Software Life Cycle Process
h. ISO/IEC 15288 – Systems and Software Engineering – System Life Cycle Process
i. AQAP 2009 - NATO Guidance on the use of the AQAP-2000 Series
j. AQAP-2000 Series
k. AQAP 2050 - NATO Project Assessment Model
l. AQAP 2105 - NATO Requirements for Deliverable Quality Plans
m. AQAP 2310 - NATO Quality Management System Requirements for Aviation, Space And Defence Suppliers
n. International Standards 9000 Series
o. International Standard 10012-1 (ISO-10012-1)
p. Applicable NATO Standardisation Agreements
q. STANAG 4107
r. STANAG 4427

6.2. Quality Control System

6.2.1. The Purchaser will apply STANAG 4107 and AQAP(s) (a-m) specified above that the Contractor shall herewith accept and agree to.

6.2.2. The Contractor shall establish, document and maintain an effective QC System in accordance with SOW SECTION 6 above Reference (a) and/or equivalent ISO 9000 Series Standards throughout the life-cycle of the contract.

6.2.3. The Purchaser may delegate the Quality Assurance to the appropriate Government Quality Assurance Authority (GQAA) in accordance with STANAG 4107. The GQAA, when accepting the STANAG 4107 Request for GQAA Services, appoints his QA Representative(s) (QAR). The Purchaser, through their own Quality Assurance, however, will retain the overall supervisory and liaison authority concerning all QA/QC matters, and for this purpose will use their own QA Personnel. The term "National QAR" (NQAR) shall apply to any of the Purchaser appointed QARs, whether nominated by the GQAA or by Purchaser QA. During the entire contract implementation, the NQAR(s) within their own rights, defined in the contract applicable AQAPs, shall assure the Contractor's and Sub-Contractor's compliance with all contractual requirement.

6.3. Quality Assurance (QA) Programme

6.3.1. The Contractor shall be responsible for the control of quality of all deliverables and associated Contractual products throughout the life-cycle of the Contract.

6.3.2. The QA Programme shall ensure that procedures are developed, implemented and maintained to adequately control the development, design, production, testing and configuration of all deliverables. The QA Programme shall be described in the QA Plan as outlined below. The programme is subject to disapproval by the Purchaser, or its delegated representative(s), whenever it does not meet the QA requirements. It shall be subject to review for adequacy, compliance and effectiveness. The overall QA Programme shall adhere to the provisions of SOW SECTION 6 above Reference (a) and be consistent with the project philosophy of integrating COTS hardware and software as applicable.

6.4. Applicability

6.4.1. The QA programme shall apply to all hardware, software and documentation being developed, designed, acquired, integrated, maintained, or used under the Contract. This includes non-deliverable test and support hardware and software. Firmware shall be controlled as software. The QA programme shall also apply to civil works throughout the life cycle of delivered infrastructure (with associated earth, electrical and ducting works etc.) and systems (such as SB and NB PSS, HVAC, grounding etc.). The QA programme is also applicable to the whole package of documents, designs, plans and drawings pertaining Civil Works at any given stage of the project.

6.5. Organisation

6.5.1. The Contractor shall designate at least one person to perform the QA function for this project. Contractor personnel comprising the QA organisation shall have sufficient responsibility, authority, organisational freedom and independence to review and evaluate activities, identify problems and initiate or recommend appropriate corrective action.

6.5.2. Personnel performing QA functions shall have specific documented definitions of their assigned duties. In no case shall the Contractor QA personnel performing QA functions be the same personnel responsible for performing other tasks that are reviewed by QA.

6.5.3. Contractor QA personnel shall participate in the early planning and development stages to ensure that attributes of good quality for life-cycle procurement are specified in programme plans, standards, specifications and documentation. After establishment of attributes, controls and procedures, Contractor QA personnel shall ensure that all elements of the QA Programme are properly executed, including inspections, tests, analysis, reviews and audits.

6.5.4. A Contractor QA person shall be designated as the Contractor’s QA Management Representative and point of contact to interface with, and the resolution of quality matters raised by the Purchaser or his delegated National Quality Assurance Representative (NQAR) and identified in the Quality Plan.

6.6. QA PLAN

6.6.1. The Contractor shall provide a QA Plan to the Purchaser in accordance with the requirements of the above mentioned AQAPs, and as amended herein. The QA Plan shall be submitted to the Purchaser for review as part of the PIP in accordance with the SSS. The QA Plan shall be structured as a living document subject to revision /update, as required.

6.6.2. The QA Plan shall reference, or document, and explain the Contractor's QA procedures for analysis, software support, development, design, production, installation, configuration management, control of Purchaser furnished property, documentation, records, programming standards and coding conventions, library controls, reviews and audits, testing, corrective action and certification as specifically related to this project.

6.6.3. The QA Plan shall be compatible and consistent with all other plans, specifications, standards, documents and schedules, that are utilised under this Contract. All Contractor procedures referenced in the QA Plan shall either be submitted with the plan, or described in the plan and made available for review by the Purchaser upon demand.

6.7. Corrective Actions

6.7.1. The Contractor's corrective action system shall ensure prompt detection, documentation and correction of problems and deficiencies. The corrective action system shall track all reported and recorded problems and deficiencies until their closure and clearance.

6.8. Sub-Contractor Control

6.8.1. In the event that the Contractor sub-contracts any of the work contained in this Contract, the Purchaser reserves the right to perform reviews and audits at any of the Sub-Contractor(s) facilities. Such reviews and audits shall not be used by Contractor as evidence of effective control of subcontractor's quality. The Contractor shall conduct periodic audits of the subcontractors.

6.9. Certificates of Conformity (CoC)

6.9.1. When satisfied that the products and/or services provided by the Contractor are in conformance with the terms of this contract, a Certificate of Conformity (CoC) per SOW SECTION 6 above Reference (f) Annex B shall be countersigned and stamped by the cognisant NQAR(s). The preparation of the CoC(s) shall be the responsibility of the Contractor.

6.9.2. CoC(s) shall be required for all quantities contained in each contract line item. The Contractor shall submit copies of the CoC(s) to the Purchaser in quantities specified in SSS on delivery of the equipment.

SECTION 7 CONFIGURATION MANAGEMENT (CM)

7.1. General

7.1.1. This Section addresses the requirements relating to the CM.

7.1.2. The Contractor shall be responsible for establishing and maintaining an effective CM organisation to implement the CM programme in accordance with STANAG 4427 and managing the CM functions (configuration identification and documentation, configuration control, configuration status accounting, configuration audits).

7.1.3. The Contractor shall be responsible for the application of all necessary CM procedures, in accordance with the requirement and guidance stated below, throughout the life of the basic contract and during CLS.

7.1.4. The following reference documentation applies for CM purposes.

a. Allied Configuration Management Publication (ACMP) – 1 NATO Requirements for the Preparation of Configuration Management Plans.

b. ACMP – 2 NATO Requirements for Configuration Identification.

c. ACMP – 3 NATO Requirements for Configuration Control, Engineering Changes, Deviations and Waivers.

d. ACMP – 4 NATO Requirements for Configuration Status Accounting and Configuration Data Management.

e. ACMP – 5 NATO Requirements for Configuration Audits.

f. ACMP – 6 NATO Configuration Management Terms and Definitions.

g. ACMP – 7 NATO Configuration Management Guidance on the Application of ACMP 1-6

h. STANAG 4427

7.2. Deliverable Version Numbering

7.2.1. The Contractor shall propose a deliverable version control system as part of the CM Plan detailed below. This version control system shall allow for the unique identification of all changes to the deliverables, no matter how minor the change. The version control system shall also identify a difference between major and minor changes. Any doubt as to whether a revision constitutes a major or minor change shall be referred to the Purchaser for decision.

7.3. Configuration Management Plan

7.3.1. The Contractor shall provide a CM Plan in accordance with SOW SECTION 7 above Reference (a) tailored to the requirements of the proposed technical solution. The CM Plan shall be periodically updated as required. The CM Plan shall be part of the PIP Section 4. CMP shall be maintained during CLS period as well.

7.3.2. In producing the CM Plan, the Contractor shall define the organisation and procedures used to configuration manage the functional and physical characteristics of CI(s), including interfaces and configuration identification documents. He shall ensure that all required elements of CM are applied in such a manner as to provide a comprehensive CM programme.

7.3.3. The CM Plan shall address all disciplines within this SOW SECTION 7 above and shall as a minimum include, but not be limited to the following CM Plan Sections:

a. Introduction
b. Organisation
c. Configuration Identification and Documentation (CID)
d. Configuration Control
e. Configuration Status accounting
f. Configuration Audits
g. Management tools/Interface management

7.4. Configuration Identification and Documentation (CID)

7.4.1. The Contractor shall establish a configuration identification system. The system shall identify all documents necessary to provide a full technical description of the characteristics of the Hardware and Software CID(s) that require control at the time each baseline is established and shall include the relevant deliverables in the contract.

7.4.2. The Contractor shall propose appropriate CID(s) in the CM Plan including an explanation of the rational and criteria used in the selection process that shall be based on the criteria for selection of CID(s) as detailed in SOW SECTION 7 above Reference (b).

7.4.3. The CID structure shall be a CI tree structure (an explicit part of the CMP) with the BRASS BGR system being the top level CID and shall show the relationships between the lower level CID.

7.5. Baselines

7.5.1. **Functional Baseline**: The Contractor shall propose the CID that he considers to best describe the functional baseline, which includes all necessary functional characteristics, the test requirements, interface characteristics and the design constraints. From this, the Contractor shall establish the Development and Product baselines as described below.

7.6. Development (Allocated) Baseline

7.6.1. The Contractor's Development Baseline shall comprise the configuration documentation, which includes:

a. Functional and system design documentation, development specifications, performance specifications, and interface characteristics and documentation;

b. The allocation of functional characteristics to CID(s);

c. Design constraints;

d. The verification and testing deliverables required to demonstrate achievement of the functional baseline.

7.7. Product Baseline

7.7.1. The product baseline shall comprise the configuration documentation, which includes:

a. Product, material and process specifications;

b. Engineering drawings;

c. Other technical documentation for CID(s) that satisfactorily reflects the requirements of the functional and development baselines;

d. Production acceptance test results/reports.

7.8. Traceability

7.8.1. The Contractor shall ensure that there is full traceability through all baselines back to the functional baseline. The baselines shall be maintained by the Contractor in a database established by the Contractor as specified under CM Tools below.

7.9. Documentation

7.9.1. Detailed proposals for the documents that shall comprise the above baselines shall be included in the CM Plan for approval by the Purchaser. At the end of the contract, the Contractor shall deliver the baseline documentation in quantities as specified in the SSS and in format that complies with SOW SECTION 13 below. As part of the CM database, as specified under CM Tools below, the Contractor shall transfer a copy of the current version of all baselines to the Purchaser at contract completion.

7.10. Configuration Control (CC)

7.10.1. The Contractor shall describe his Configuration Control (CC) procedures in the CM Plan. The Contractor shall be responsible for issuing in a timely manner all approved changes and revisions to the functional, development and product baseline documents included in the Contract. This includes changes originated both by the Contractor and the Purchaser. Copies of change pages or documented revisions shall be provided in accordance with the Schedule of Deliverables. Where a change affects more than one document, or affects documents previously approved and delivered, the Contractor shall ensure that the change is properly reflected in all baseline documents affected by that change. The Purchaser must approve all changes prior to becoming effective.

7.11. Engineering Change Proposals (ECP)

7.11.1. Changes to baselined CID(s) shall be processed as either Class I or Class II Engineering Change Proposals (ECP)(s) as defined in SOW SECTION 7 above Reference (c). The Contractor shall propose in the CM Plan an ECP format based on the requirements in SOW SECTION 7 above Reference (c).

7.11.2. The Contractor shall use the CC procedures specified in the CM Plan for the preparation, submission for approval implementation and handling of ECP(s) to baselined CID(s). When submitting ECP(s), the Contractor shall assign a priority rating of Emergency, Urgent or routine. Extensions to the target times for processing Class I ECP(s) shall be mutually agreed upon by the Contractor and Purchaser. No Class I ECP shall be implemented until it has been approved by the Purchaser.

7.11.3. Prior to implementation, all Class II ECP(s) shall be submitted by the Contractor to the Purchaser for review and classification concurrence. If the Purchaser’s representative does not concur with the classification, Class I ECP procedures shall be applied and the ECP shall be formally submitted to the Purchaser for approval or disapproval.

7.11.4. All design changes shall be appropriately reflected in the technical documentation by the issue of appropriate changes or revisions. The Contractor shall provide all such changes/revisions to the Purchaser.

7.12. Requests for Deviation and Waiver

7.12.1. If required, the Contractor shall prepare, handle, and submit for approval, Requests for Deviation (RFD)(s) and Requests for Waiver (RFW) as defined in SOW SECTION 7 above Reference (c). The Contractor shall propose in the CM Plan a RFD/RFW format based on the requirements in SOW SECTION 7 above Reference (c). The Contractor shall be aware that permanent departures from a baseline shall be accomplished by ECP action rather than by RFD.

7.13. Configuration Status Accounting (CSA)

7.13.1. The Contractor shall be fully responsible for the Configuration Status Accounting (CSA) for all CID(s) in accordance with SOW SECTION 7 above Reference (d). This system shall consist of reports that shall be prepared and delivered in a manner, format and schedule that shall be proposed by the Contractor in his CM Plan and approved by the Purchaser.

7.13.2. At the end of the contract, the Contractor shall deliver a set of final CSA reports for each CID in quantitites as specified in the SSS and in format as specified in SECTION 13 below.

7.13.3. In addition, the Contractor shall develop and maintain a CSA Database using the appropriate database management and other related software tools for the entire period of the contract.

7.14. Configuration Audits

7.14.1. Configuration audits shall be established by the Contractor to verify compliance with the specifications and other contract requirements in accordance with SOW SECTION 7 above Reference (e). The Contractor shall include in the CM Plan detailed proposals for the audits.

7.14.2. The audits shall be carried out jointly by the Contractor and the Purchaser in accordance with the Contractor’s approved CM Plan and shall consist of:

7.14.3. Functional Configuration Audit (FCA) is the formal examination of functional characteristics of a configuration item, or system to verify that the item has achieved the requirements specified in its functional and/or allocated configuration documentation. In this contract, the FCA shall primarily consist of review of all the component based requirements of the Contract and contract documentation, and tests or test results where necessary to demonstrate the full compliance of the functional requirements with allocated components delivered to the Purchaser.

7.14.4. Physical Configuration Audit (PCA) is the formal examination of the "as-built" configuration of a configuration item and system against the technical documentation to verify the product baseline.In this contract, PCA shall consist of review and verification of design documentation against the delivered system and individual system components. PCA shall also include the review of system-wise functional and performance requirements that were not reviewed at FCA.

7.14.5. Audit Location. The FCA and the PCA shall be conducted after FAT at factory and after SAT at site respectively. The Contractor shall ensure that after completion of the FCA and PCA Minutes of meetings detailing these activities are published and distributed to the Purchaser.

7.15. Configuration Management Tools

7.15.1. The various baselines referred under SOW paragraph 7.5 above shall be established by the Contractor using automated tools.

7.15.2. A CSA database shall be maintained using the software tools for the entire period of the contract.

7.15.3. Upon request from the Purchaser, the Contractor shall transfer the current CSA database to the Purchaser. The Contractor shall deliver the latest version of CSA database along with the tool to the Purchaser prior to the FSA of the project (no later than 44 weeks after EDC).

7.15.4. During the life cycle of the BRASS BGR project and until the end of the Contractor Logistics Support (see SOW paragraph 8.7 below) , all baselined documents created under this contract shall be maintained by the Contractor in the CSA database using the software tools to allow efficient update, automated tracking of changes through all affected CID(s) and baseline documents, and continued automated maintenance and printing of these documents, including tables, figures, and readings.

SECTION 8 INTEGRATED LOGISTIC SUPPORT

8.1. Integrated Logistics Support Plan (ILSP)

8.1.1. In PIP Section 5 the Contractor shall describe the Contractor's logistics operation, especially as it relates to the requirements stated in this Section. Specifically, the Contractor shall describe his activities to:

a. Support the compilation of the Recommended Spare Parts Lists (RSPL) and Recommended Tools and Test Equipment Lists (RTTL);

b. Ensure that the specified preservation, packaging, handling, storage, packing codification, transportation and marking requirements of equipment are met;

c. Ensure that the warranty requirements of the Contract are satisfied;

8.2. Maintenance

8.2.1. Maintenance shall be accomplished at two levels as follows:

a. Operating Unit (OU): this equates approximately to 1st and 2nd Line, or field and limited maintenance.

b. Factory: 3rd and 4th Line Maintenance and above, including major overhaul.

8.2.2. OU Maintenance includes the following:

a. Routine housekeeping, including cleaning of equipment, shelves, racks, cooling equipment, filters etc, and replenishment of consumable materials;

b. Replacement of front panel plug-in components such as lamps, fuses, meters etc;

c. Recognition of faulty sub-assemblies using Built In Test (BIT) Equipment or similar self-test or alarm facilities, switch-over to operational stand-by equipment, and/or sub-assembly replacement;

d. Whenever practicable and feasible, fault diagnosis of failed sub-assemblies to Line Replaceable Unit (LRU), i.e. modules, Circuit Card Assemblies (CCA)(s) etc, using to the maximum extent possible, BIT equipment or similar self test facilities, and subsequent removal and replacement of failed LRU(s). In general the hard wiring of LRU(s) into sub-assembly chassis shall be avoided as far as possible, and requirements for common and special test equipment and tools shall be minimal. Similarly, diagnostic routines dependent upon spare parts substitution shall be avoided;

e. Generation of equipment failure reports, supply requisitions and other pertinent maintenance and supply records.

8.3. Spare Parts

8.3.1. The Contractor shall provide a fully detailed and priced RSPL no later than two (2) months after CDR meeting that shall detail comprehensively all spares in a hierarchical breakdown shall are required to meet the reliability and availability requirements. This RSPL shall include as a minimum:

a. Item sequence number;

b. Nomenclature;

c. True Manufacturer's Part number;

d. True Manufacturer's Identification Code;

e. Mean Time Between Failure (MTBF) (actual or predicted);

f. Population, by terminal and total;

g. Recommended quantity;

h. Unit Price (including packing/packaging and shipment).

8.3.2. Delivery of the RSPL shall be in accordance with the SSS. If requested by the purchaser a Provisioning conference may be held after submission of the RSPL.. The Contractor shall provide all relevant documentation including the full range of drawings. Appropriate technical staff with knowledge of the equipment concerned shall be assigned by the Contractor to enable the Purchaser to make a reasoned selection of the spare parts, tools and test equipment etc. required.

8.4. Tools and Test Equipment

8.4.1. The Contractor shall provide a fully detailed and priced RTTL no later than two (2) months after CDR meeting, for standard and special-to-type tools, test equipment and test fixtures, cables, connectors, support equipment, such as cranes, lifting platforms, etc. in accordance with the SSS up to Level 2. Requirements for standard and special-to-type tools, test equipment and test fixtures, cables, connectors etc. to enable the prescribed maintenance shall be minimal, comprising no more than such items as radio tester, automated test equipment, torque screwdrivers, etc. Quantities of such items to be recommended shall be the minimum consistent with the number required per maintenance operation, with no allowances being included for redundancy. The list shall clearly indicate for what maintenance action the recommended item will be used, parameters to be measured (if applicable), minimum/maximum test equipment specification requirement etc.

8.5. Marking of Items and Components

8.5.1. A nameplate in English language with non-erasable letters/numbers, giving the serial number , NCI Agency contract number and the part number shall be properly attached in a prominent position on each major assembly to enable reading and control with easy access when installed.

8.5.2. Marking shall be accomplished in a manner that will not adversely affect the life and utility of the item or component.

8.5.3. Whenever practicable, the marking shall be located in such a manner as to allow it to be visible after installation.

8.5.4. Marking shall be as permanent as the normal life expectancy of the material on which it is applied and shall be such as required for ready legibility and identification.

8.5.5. Marking shall be capable of withstanding the same environment tests required of the part and any other tests specified for the marking itself.

8.5.6. When possible, letters, numerals and other characters shall be of such a size as to be clearly legible.

8.6. Logistics Support during Implementation and Warranty

8.6.1. Warranty period starts with the successful completion of FSA and lasts twelve (12) months.

8.6.2. The maximum Turn Around Time for repairs during the Warranty period shall not exceed ten (10) days for any unit after the equipment has been received at the Contractors plant.

8.6.3. Up to FSA of the BRASS BGR System to be installed at the various sites, the Contractor shall provide his own spare parts, tools and test equipment to maintain the equipment to the required performance level.

8.6.4. During the Warranty, the contractor shall have the responsibility to perform full CLS services under the Contract.

8.6.5. These CLS services, during the Warranty period, shall be identical to those to be performed under a full CLS and shall be at no cost to the Purchaser.

8.6.6. The HN will Operate and Manage the BRASS BGR system after FSA.

8.7. Post Warranty Contractor Logistics Support (CLS)

8.7.1. The Contractor may be obliged to enter into a CLS Frame Agreement, as set forth in Book III, with the HN (after FSA) or their representatives starting at the end of the Warranty. The initial three (3) years Post Warranty CLS subsequent contract might be renewed twice, for a total period of ten (10) years, when combined with the first one-year warranty.

8.7.2. During this time, the Contractor shall be responsible for maintaining all stocks of spares, test and other maintenance equipment, Automated Test Equipment (ATE) facilities, and all repair documentation including manuals etc., to support a CLS/RON contract throughout its life, at no additional cost to the HN.

8.7.3. The Contractor shall at all times also be responsible for the maintenance of items such as Mock-ups, Test jigs, Tools etc., as well as for the preventive maintenance to ensure that the response times specified in SOW paragraph 8.7.8 below can be met.

8.7.4. The Contractor shall guarantee the provision of such equipment replacement/repair services throughout the stipulated period of ten (10) Years. If at any time the Contractor wishes to withdraw these replacement/repair services, he shall transfer to the HN at no additional cost, all requisite fault diagnostic and repair expertise and instructions, documentation etc., and special-to-type software and hardware including Test equipment, mock-ups etc., to enable such repair at a National Facility.

8.7.5. Alternatively if agreed to by both parties, and again at no additional cost, the Contractor may transfer to the Purchaser/Nation sufficient spare sub-assemblies, modules, circuit card assemblies etc. to support a discard maintenance concept for the remaining operational life of the equipment.

8.7.6. Throughout the life of this Contract, the Contractor shall maintain comprehensive repair records to enable detailed fault analysis, and early detection of failures/maintenance trends. Periodically, the Contractor shall be required to forward the results of these analyses for review by the Purchaser.

8.7.7. The maximum repair Turn Around Time (TAT) shall not exceed ten (10) days for any unit after the equipment has been received at the Contractors Plant. This shall include in-processing, trouble shooting, repair and check-out and release to the Site or Depot.

8.7.8. HN may require the Contractor to provide the following Logistics Support Services after warranty:

a. Full CLS Services (including helpdesk facility service charges during working hours and possible on-site intervention, that shall be charged on a daily basis during normal working hours, excluding transportation);

b. Post Design Services;

c. Provision of spare parts;

d. Documentation covering on-site intervention activities and BRASS BGR repair;

e. Repair on Need (RON) or per occurrence for LRU/CCA's etc. and annual estimated occurrence of failures per LRU/CCA;

8.8. Contractor Logistics Support (CLS) Plan

8.8.1. The Contractor shall provide as part of the PIP Section 11, a CLS Plan describing the basis execution of a prospective CLS Contract. This plan shall be detailed enough to form a comprehensive understanding of how he proposes to meet the logistic support requirements of this SOW for the maximum Support Period of the installed BRASS BGR System. This Plan shall detail the following:

a. The Contractor shall demonstrate that the Contractor’s proposed CLS Management Organisation and Structure, to carry out the CLS effort, have adequate experience in the maintenance and support of major RF defence systems. The experience described shall expand on the Corporate Experience descriptions to specifically highlight the Prime Contractor's and subcontractors' contracted maintenance and supply efforts for a similar size RF defence systems concerning BRASS communications in HF (BLOS) radio systems, over the last five (5) years. The description shall identify any similarities between CLS contracts previously delivered and the requirements under this SOW.

b. CLS Strategy, including intervention on each site, preventive and repair activities, spares replenishment plan and process, identifying the items of equipment (assemblies and sub/assemblies) that are to be repaired and services to be provided by the Prime Contractor with its internal "in-house" resources during the support period. The Contractor shall identify the location of the repair facilities that will be utilized, and/or the source within the corporate organization of the service and expertise required. The Contractor shall identify additional resources not under the direct control of the CLS PM that may be accessed during periods of "surge" demand. The Contractor shall provide the Corporate Structure of the Prime Contractor and the administration of the prospective CLS project within the overall corporate structure.

c. Description of proposed method to meet intervention response and repair times if site or mission critical support availability is endangered,

d. Description of how CLS shall be fulfilled during times of crisis and conflict,

e. Method for site personnel to inform CLS Contractor when spares have been used and when assistance is needed,

f. Method of recording and proposed measurable criteria for evaluating the Contractor’s performance during CLS,

g. Description of the strategy for replacing hardware that can no longer be economically supported by the Contractor or sub-contractors,

8.8.2. The Contractor shall provide a description of how its proposed CM procedures shall continue to be implemented on the hardware and software/firmware during the CLS periods.

8.8.3. The Contractor shall provide a description of the proposed logistic and maintenance information processes. This description shall detail how the information from sites and the Contractor's maintenance facilities will be collected, stored and made available for evaluation.

8.8.4. The Contractor shall identify its major proposed sub-contractors for the CLS contract. The Contractor shall identify the firm, the nation of origin, the major items (assemblies, sub-assemblies) or services that the proposed sub-contractor shall be required to furnish, repair, modify and perform. The Contractor shall include a letter of intent from the proposed sub-contractor that details its willingness to enter into a sub-contract with the Contractor, if the CLS contract would be awarded. .

8.8.5. The Contractor shall provide a description of how the QA/QC Programme of the Prime Contractor and sub-contractors providing CLS services shall meet the provisions of this contract. The Contractor shall include applicable certificates (issued by National Governments or International Organisations such as ISO) that demonstrate that the sub-contractors Quality Programme conforms to the requirement of the Prospective CLS Contract. The Contractor shall also demonstrate how the provisions of the Prospective CLS Contract regarding QA/QC shall be inserted in all subcontracts and enforced by the Prime Contractor.

8.9. NATO Codification of Items

8.9.1. In addition to the terms of the Clause 31 of the NATO Communications and Information Organization (NCIO) General Provisions entitled "NATO Codification" the Contractor shall support the codification of all equipment/spares to be delivered. The Contractor shall guarantee that any subcontract entered into as a result of this contract shall contain the standard NATO codification clause as above to provide NATO Stock Numbers (NSN)(s) as follows:

a. All LRU(s);

b. All items shown in the RSPL and RTTL;

c. All additional items selected at the Provisioning Conference (see SOW paragraph 8.3.2 above);

d. Equipment/spare parts affected by Equipment Design Change Notices (EDCN)(s);

e. Those items substituted due to a Spare Parts Design Change Notice (SPDCN);

f. The Contractor shall commence the codification action whenever the Purchaser has approved any of the items listed above for procurement.

8.10. Transportation and Packing

8.10.1. With the sole exception of items to be returned for repair/exchange from a site to the Contractor, all supplies covered under this Contract shall be transported through Contractor arrangements to the destination(s) detailed in the SSS at the expense of the Contractor (also during the warranty).

8.10.2. The Purchaser shall not be liable for any storage, damage, or any other charges involved in transporting of supplies prior to the actual acceptance of such supplies at the designated destinations. The Contractor shall deal with the insurance.

8.11. Preservation and Packing

8.11.1. The Contractor shall, for the purpose of transportation, package, create, or otherwise prepare items in accordance with the best commercial practices for the types of supplies involved, giving due consideration to shipping and other hazards associated with the transportation of consignments overseas.

8.11.2. For items of supply such as spare parts, test equipment and tools etc, the Contractor shall preserve and package items to withstand the following:

a. Long term storage for a minimum of five years in a temperate climate and in permanent buildings, and temporary storage of up to six months in enclosed transport vehicles; and,

b. Movement including road (truck), rail, air (C130, C160), and sea, and handling by any means.

c. HN will provide rooms for storage of the spare parts in permanent heated buildings/rooms. Spare parts shall be packed and prepared by the Contractor to be stored in such buildings. However, HN needs to know how much square meters Contractor will need to store spare parts.

8.11.3. Special care shall be taken to ensure that, in dealing with equipment destined for installation in "clean areas", due account be taken of the necessity to preserve the environmental conditions during unpacking and installation.

8.11.4. The Contractor shall provide any special packing/containers required for the shipment of repairable items at no extra cost to the Purchaser.

8.12. Notice of Shipment and Request for Custom Form 302

8.12.1. A customs declaration form 302 is required for all shipments entering into any EU state from a non-member Nation.The Contractor shall conform to the requirements of Clause 20 of the Contract General Provisions entitled “Notice of Shipment and Delivery” prior to the shipping of any items under this Contract.

8.13. Packing Lists

8.13.1. The Contractor shall establish the packing lists in such a way as to permit easy identification of the items to be delivered at the sites. These packing lists shall reflect the same wording and sequence as those used in the contract schedule of supplies and in the invoices.

8.13.2. Packing lists shall accompany the shipment. Each individual container/box from a consignment must have one packing list in a weatherproof envelope affixed to the outside of each container/box, indicating exactly what is contained inside. One packing list shall be put inside each container/box.

8.13.3. The Contractor shall also furnish one copy of the packing list in the English language to the Purchaser and to the Freight Forwarder, the number of copies required by this Forwarder.

8.13.4. The packing lists shall contain the following information as a minimum:

a. Shipping address;

b. Package number;

c. Contract number;

d. Contract item number;

e. Item description;

f. Part number;

g. NATO Stock number (if available);

h. Serial number (if available);

i. Quantity shipped;

j. Number of the corresponding Customs Form 302 (when required);

k. Shipping dimensions & weight per separately packaged item

8.13.5. Where manufacture is under Government Quality Assurance Authority (GQAA) surveillance, there is a requirement for Certificates of Conformance to be included with packing containers, three each per pack, one inside and two outside in a waterproof envelope.

8.13.6. Contractor shall provide CoC that the equipment offered conforms to the contractual standards and is in Conformance with STANAG 4107 and National codes, laws, regulations.

8.14. Marking on the Packing

8.14.1. The packages or containers in which supplies are transported shall, in addition to normal mercantile marking, be marked with the following data on a separate nameplate (or transfer or stamping if nameplate is not practical):

a. System/sub-system denomination;

b. Purchaser contract number;

c. Contract Item Number Manufacturer's name and address;

d. Ship to address.

8.14.2. To enable boxes, crates and other containers to be identified easily and to ensure correct assignment of unique equipment to its appropriate site, a coding system shall be proposed by the Contractor for approval by the Purchaser.

8.15. Packing and transportation of cryptographic equipment

8.15.1. The packing and transportation of cryptographic equipment and documentation shall comply with NATO rules and be accomplished in accordance with Allied Military Security Guidelines (AMSG) 293 and AMSG 505. The Contractor shall pay the packing and transportation cost required.

SECTION 9 RELIABILITY, AVAILABILITY, MAINTAINABILITY AND TESTABILITY (RAMT)

9.1. Reference

NATO Maritime Communications Reference Architecture, December 2006.

9.2. General

9.2.1. The Contractor shall conduct an effective Reliability, Availability, Maintainability and Testability (RAMT) program. This program shall be planned, integrated, and developed in conjunction with system and equipment design, fabrication, installation and test activities to ensure the achievement of the overall program objectives inherent in the Reliability, Availability, Maintainability (RAM) criteria specified below. RAMT program shall identify the specific configuration items at the system and sub-system level that are subject to tests.

9.2.2. The overall ILS Package for this Project, including the Recommended Spare Parts, Test Tools, Test Equipment, Technical Documentation, Maintenance Procedures, and Training shall be designed to support the RAM requirements defined in this section.

9.2.3. Availability, when expressed as a probability of having full required functionality and performance for the system over the operational lifetime, shall be greater than 99.8 %.

9.3. RAMT requirements

9.3.1. Reliability shall be expressed as Mean Time Between Failures (MTBF), where ‘failure’ is understood to mean any condition in which the item, assembly, sub-system or the entire system is not operating according to specification. The MTBF of the system shall not be less than 1000 hours.

9.3.2. At the system level, a service degradation shall be treated as a failure when 30% percent of the system services (transmission and receiving) become unavailable

9.3.3. The system shall experience on average no more than two (2) failures per calendar month of full operation.

9.3.4. Maintainability shall be expressed as Mean Time To Repair (MTTR), to include fault isolation, access, disassembly, remove and replace, reassembly, configuration, check-out and start-up, and to exclude administrative and logistics delay times. The maximum permitted MTTR of the system shall be two (2) hours and the maximum time to repair (TTRmax) at the 95th percentile of all corrective maintenance actions shall be four (4) hours.

9.3.5. Intrinsic availability Ai shall be calculated as MTBF / (MTBF + MTTR). The intrinsic availability of the system shall attain at least 99,8%, assuming no scheduled downtime will occur.

9.3.6. The system design shall include Built-In Test Equipment (BITE) capable of detecting 95% of all failure modes.

9.3.7. The Contractor shall develop and maintain a Reliability Block Diagram (RBD) of the entire system, relating all items (i.e. hardware down to LRU level and all software modules) based on failure dependencies, and explaining how the reliability of each item contributes to the success or failure of the entire system. Firmware shall be treated as being part of the pertinent LRU.

9.3.8. The RBD shall clearly capture and display the MTBF, MTTR and Ai characteristics of each item, assembly, sub-system, and the entire system. The results from the RBD shall be used to calculate and predict system Reliability, Maintainability, and Intrinsic Availability.

9.3.9. A professional tool shall be used to develop and analyse RBDs. A general purpose tool such as Microsoft Excel shall not be used as the main tool. The tool shall be capable of exporting and reporting data and results in electronic formats compatible with MS Office 2010 format. All data and results pertaining to the development and analysis of RBDs in this tool shall be made available to the Purchaser at the request of the Purchaser.

9.3.10. The Contractor shall develop and maintain a RAMT case in which all RAMT activities shall be documented. The RAMT case shall include:

- all COTS equipment data sheets and references, clearly indicating the COTS equipment's reliability and maintainability characteristics used as data input to any of the RAMT activities;
- the complete set of Reliability Block Diagrams, including reliability, maintainability and intrinsic availability allocations per block, per aggregated block, per sub-system, per location, and for the entire system;
- all intermediate and final calculations on intrinsic availability, reliability, maintainability and percentage coverage of failure modes by BIT equipment;

a. The RAMT case shall form a body of evidence, providing sufficient credibility that all RAMT requirements have been met and providing credibility to the data used and the results achieved in all calculations and models. The RAMT case shall provide rationale and justifications for all data and formulas used in any of the calculations and models.

b. Within PIP, the Contractor shall explain his RAMT approach. At CDR meeting, the contractor shall present the RAMT case. The finalized RBD shall be presented at CDR.

c. The RAMT requirements of the system shall be verified with the following methods:

   i. The Reliability and Availability aspects of the system shall be verified first by inspection and analysis on RBD after SAT. After the FSA, during the warranty period, the reliability and availability of each item in the RBD shall be observed and the items which don't comply with the Ai specifications in RBD shall be repaired/replaced under warranty case.

   ii. The Maintainability requirement of the system shall be demonstrated by the contractor according to MIL-STD-471A or equivalent. The demonstration shall be performed as part of SAT. The results, conclusion and recommendations of the maintainability demonstration shall be captured in a maintainability demonstration report, to be included in the RAMT case. The result of the demonstration shall be statistically analysed to verify MTTR requirement specified above is met.

SECTION 10 TEST AND EVALUATION (T&E)

10.1. Introduction

This section outlines the testing requirements to be carried out during the implementation and acceptance of contract deliverables.

10.2. General Principles

10.2.1. All deliverables to include hardware, software and firmware supplied by the Contractor under this contract shall be tested to meet the requirements of this contract.

10.2.2. Test shall be performed for each equipment/subsystem/system as per the following phases:

a. The system Design, Development and Factory Acceptance Test (FAT) phase ,

b. Phase II: System Acceptance Test Report (SAT) phase, and

c. Phase III: The Final System Acceptance (FSA) phase

10.2.3. Formal testing is initiated by a TRR (Test Readiness Review). The primary purpose of this review is to evaluate test progress and to verify that scheduled tests may begin. There is one TRR per Test Phase. The Contractor shall prepare a TRR Report for each TRR.

10.2.4. System/subsystem tests shall be performed at the Contractor premises during FAT. The Individual Site Acceptance Test and System Acceptance Test shall be conducted at MOD BGR sites.

10.2.5. The Contractor shall be responsible for integrating the PFE into his test programme to the extent that PFE is an integral part of the system, sub-system or network, as specified in SOW paragraph 3.4 above.

10.2.6. All the BRASS testing shall be the responsibility of the Contractor who shall provide all the personnel, documentation, equipment, test data and facilities required for installation, commissioning and execution of the test. The Contractor shall be entirely responsible for the co-ordination and performance of the tests, and shall ensure that an adequate number of Contractor's engineers and technicians are present to ensure the timely completion of all tests. The Contractor shall provide the necessary duly calibrated test equipment, tools and any other items required for the satisfactory completion of the tests and the recording of their results. This shall include but not be limited to the following:

a. Performance Measurement instruments

b. Protocol Analysers

c. Installation tools

d. Test Plans and Procedures

e. Any transmission services/resources required to achieve test configuration

10.2.7. The Contractor shall assign and provide a Test Director and Test Operators and the Purchaser and/or his Designated Representative will attend and witness the testing.

10.2.8. The Purchaser shall have the right to demand repetition of tests, proof of the validity of the test equipment calibration, and performance of reasonable additional tests to clarify doubtful or marginal results. The Contractor shall make available to the Purchaser, all facilities, information and assistance necessary to permit a valid interpretation of the test results.

10.2.9. The Test Environment, defined by the Contractor and approved by the Purchaser in Test procedures document as per SOW 10.4.2.e, shall be under the control of the Purchaser during the testing period. Prior to the commencement of the tests, the Test Environment shall be baselined and no changes to hardware, software, firmware and/or configuration shall be introduced by the Contractor unless explicitly authorised in writing by the Purchaser. Failure to do so by the Contractor shall render the complete testing null and void.

10.3. Test Plan

10.3.1. The Contractor shall provide, as part of the PIP Section 6, a system Test and Evaluation Plan describing all the activities necessary to complete the entire test programme as outlined below. The plan shall also indicate the stage at which FSA shall be held in accordance with SOW SECTION 11 below.

10.3.2. The Contractor shall describe in the Test Plan the global organisation, including relationships between the different actors involved (that shall cover all testing stages).

10.3.3. The Contractor 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,

10.3.4. The Contractor shall describe the tasks that will permit to meet testing requirements,

10.3.5. The Contractor shall identify all CI(s) that are subject to the test program and shall indicate by which method the items will be evaluated,

10.3.6. The Contractor shall identify (in a Traceability Matrix) for each requirements or derived business use case or derived system use case, the proposed methodology of validation, and where testing is proposed, the associated test case(s),

10.3.7. The Contractor shall identify the tests associated with each testing stage and identify any tests that can only be performed at the Purchaser’s facility (in particular test of interfaces requirements),

10.3.8. The Contractor shall identify the Contractor's requirements for configuration and support of the Purchaser's test facility,

10.3.9. The Contractor shall include in the Test Plan as annexes, template for:

a. Test case description (business test cases and system test cases),

b. Test procedure description,

c. Test waiver request,

d. Test results sheet,

e. Test report template.

10.4. Testing

10.4.1. Test Procedures Definitions

a. Analysis/Certification (A/C): Test by A/C consists of design documentation/calculation or certification of recognised third party government laboratory or Manufacturer documentation and/or CoC based mainly on Test Results etc. that can prove that the requirement is met without performing the test. An example is the reliability analysis.

b. Demonstration (DEM): Demonstration is defined as the determination by actual operation and/or adjustments as to whether or not an item has the capability of performing its specific function(s) in accordance with the conditions and the requirements of the performance specifications. This verification method consists essentially in a functional/ operational test.

c. Testing: Testing is defined as the determination by comparison of the results of qualitative and/or quantitative data collected by appropriate instrumentation during the systematic exercising of an item to the stated requirements of the performance specification that the item exhibits conformity. Tests shall be carried out whenever a) or b) above do not cover the requirements.

d. Inspection: Inspection is defined as the determination by simply visual inspection as to whether or not an item conforms to the performance specification.

10.4.2. Test Procedures

a. Before each major test (FAT, ISAT and SAT), a Test Readiness Review shall be conducted by the Contractor with the participation of the Purchaser and the Contractor. The Contractor shall not proceed to a formal test until authorised by the Purchaser.

b. The Contractor shall submit the draft test procedures for FAT, ISAT and SAT to the Purchaser for approval before TRR and no later than three (3) months prior to the execution of the tests.

c. Following approval by the Purchaser, printed copies of the co-ordinated and approved Test Procedure (Final) shall be issued and distributed one (1) week prior to the first application of the test. Approval of the Test Procedure by the Purchaser will be for application of the tests only and shall not represent an agreement that the test documents supersede the requirements of the Contract.

d. The Contractor shall ensure that four (4) copies of the relevant Test Procedure are made available at each site for Purchaser's use.

e. Each test procedure shall as a minimum include, but not be limited to the following:

   i. Scope

   ii. Approach

   iii. Testing Environment with a block diagram of the test layout

   iv. List of all required test equipment

   v. A detailed step-by-step procedure written so that the procedure can be clearly understood and followed by the Test Group

   vi. Objectives and expected test results with permissible test limits;

   vii. Test data sheet(s)

   viii. Requirements Coverage and Test Matrix

   ix. Observations Sheets

   x. Signature Sheets

f. The Contractor shall provide the Purchaser with information and assistance as may be necessary during the review and evaluation of the test procedures.

g. Modification of inaccurate or inadequate Test Procedure and any subsequent work arising there from shall be carried out at the Contractor's expense, including retesting due to deficiencies identified by the Purchaser.

10.4.3. Test Readiness Review (TRR) Meeting:

a. TRR Meetings shall be conducted by the Contractor before each test stage as per paragraph 10.4.3.c below to determine whether the Contractor is in fact ready to begin testing.

b. TRRs shall be conducted, as needed, for each CI to confirm completeness of test procedures, to assure that the CI is ready for testing, and to assure that the performing activity is prepared for formal testing. TRR shall confirm that:

i. test procedures comply with test plans and descriptions, demonstrate adequacy to accomplish test requirements, and satisfy CI specification requirements for verifications;

ii. pre-test predictions and informal test results (if any) indicate testing will confirm necessary performance;

iii. required operation and support documents are complete and accurate.

c. The Contractor shall conduct TRRs at various stages of system development including but not limited to the following:

i. Prior to initiation of In-Plant formal and Contractor formal testing,

ii. Prior to Phase 1 Factory Acceptance Test (FAT)

iii. Prior to Phase 2 Individual Site Acceptance Test (ISAT)

iv. Prior to Prior Phase 3 System Acceptance Test (SAT)

d. The outcome of TRR is the decision to proceed or not with test execution in accordance with the entry criteria required by the TRR checklist approved by the Purchaser. There is one TRR per test event.

e. The Contractor shall present the following for review (this will compose in more detail the TRR checklist):

i. Requirements changes: Requirements Specs that have been approved since SRR that impact Testing

ii. Design changes: Any changes on the design that have been made since CDR that impact testing (ECPs)

iii. Software TP and TD

iv. SW Test Procedures

v. Description of Configuration items under test (HW/SW/Licenses)

vi. Test environment (test tools)

vii. Resources

viii. Problems

ix. Test limitations

x. Schedules

10.4.4. Test Readiness Review Report

a. For each formal test event, the Contractor shall prepare a TRR Report for each TRR.

b. Materials used for the review constitute the Test Readiness Review Report. The Test Readiness Review Report associated to a test event will be delivered 10CD before TRR.

c. The final TRR CDRL will then be delivered simultaneously with the draft test report incorporating the TRR minutes.

10.5. Installation Checkout

a. HW Installation Checkouts consist in a visual inspection of installation workmanship, installed equipment's iaw the drawings & as-designed lists, cabling, equipment/cables labelling on the basis of a checklist.

b. Contractor and their Subcontractors perform in advance their HW Pre-Checkouts using the checklist.

c. Results of Contractor HW Pre-Checkouts are recorded in checkout booklets per cabinetand for other installed equipment.

d. When Contractor HW Pre-Checkouts are completed the Contractor shall state to Purchaser their readiness for HW Installation Checkouts.

e. HW Installation Checkouts are conducted with the participation of the NCI Agency, Host Nation and Contractor/Subcontractors.

f. During HW Checkout findings/results/action items are recorded in the Checkout Checklists and will be corrected/completed by the Contractor/Subcontractors.

g. The corrections will be checked at the next hardware checkout depending of the deadline.

h. Contractor needs to provide the following required documentation (10 days in advance):

   i. Checkout Checklists

   ii. Cabinet Drawings

   iii. Work Station Drawings

   iv. Operations and Technical Room Layout Drawings

   v. PDP Drawings

   vi. Interconnection Drawings

   vii. Cable Data Sheets

   viii. Equipment Certificate of Conformities (CoCs)

   ix. As-Designed Configuration Index

   x. Draft As-Built Drawings (ABDs)

   xi. Other as required for the this specific project like Antenas

i. At the end of the meetings, minutes shall be recorded with all the findings and AIs.

j. AIs shall be solved to declare the installation finished.

k. Installation CO shall be part of the Site Installation Acceptance.

10.6. Requirements Coverage and Test Matrix

10.6.1. The Contractor shall develop and provide as part of the Test and Acceptance Plan the Requirements Coverage and Test Cases Cross Reference Matrix. The matrix shall provide the mapping of the requirements into individual test cases and shall identify Test Case group (i.e. System, Subsystem etc.) and number. In some cases additional specific detailed requirements might be present in their respective sections, but these requirements are always related to the same overall requirement and shall thus be reflected in the details of the Test Steps to be included in the related Test Case. The matrix shall contain but not be limited to:

a. Contract Reference

b. Requirement Definition

c. Related Test Case Reference

d. Related Test Procedure Overview

10.7. Factory Acceptance Test (FAT)

10.7.1. For BRASS system, a representative scaled down system (Test Bed) approved by the Purchaser shall be assembled and installed at Contractor's facilities at first to perform the FAT. These tests shall demonstrate the functionality and shall include at least one (1) test case for each module/function. For each test of the adapted BICC software, a related software Test Report shall be compiled. The main installation activities for FAT shall include:

a. The installation material at Contractor's Facilities;

b. The connection/integration of the sub-systems:

i. ACMS –MPS, Remote Supervisory and Control (RSC), Communication Interface and Switching System (CISS) and Voice Management Sub-System (VMSS)

ii. Transmitting (TX) Site Equipments,

iii. Receiving (Rx) Site Equipments

c. System Configuration;

d. The site installation, inspection and pre-testing.

10.7.2. For BRASS system, the FAT shall include:

a. Radio communication equipment (Transmitters and Receivers) functional tests
b. Switching Sub-System and Modems functional tests for Tx and Rx sites
c. Remote Supervisory and Control functionality tests for Tx and Rx sites
d. ACMS Integration tests that consist of verifying the functional integration of the ACMS components;
e. BRASS Integration test that consists to set up the BRASS system at Contractor's factory and to check the functionality between ACMS and its remote Rx-Tx stations with the following objectives:
    i. To verify that the subsystem conforms to the corresponding Design Specification at Subsystem level.
    ii. To ensure that the functional requirements of the Subsystems are fulfilled.
    iii. To ensure that the subsystem is a fully integrated and stable entity that is ready to be installed and integrated in the System.
    iv. To verify that drawings and manuals meet the documentation requirements.

10.7.3. Entry/Exit conditions

a. Entry conditions as defined by FAT TRR
    i. Sites Survey conducted and reports delivered to Purchaser
    ii. PIP delivered to Purchaser, reviewed and accepted by the Purchaser
    iii. RSPL delivered to Purchaser
    iv. RTTL delivered to Purchaser
    v. Site Installation Specifications delivered to Purchaser
    vi. FAT procedures approved by the Purchaser
    vii. CDR were completed
b. Exit conditions

i. All test criteria shall be passed successfully

ii. Recorded deficiencies that the Purchaser classifies as mandatory shall be cleared

iii. Acceptance of the FAT Report by the Purchaser

10.7.4. The Purchaser acceptance of FAT Test Report shall grant permission to the Contractor to proceed with the delivery and installation of the BRASS BGR systems at sites.

10.8. Individual Site Acceptance Tests (ISAT)

10.8.1. After installation and integration, ISAT shall be performed with the following objectives:

a. To verify the functionality of the contractual item hardware, firmware and software of BRASS equipment as individual subsystems;

b. To demonstrate that the subsystems are fully functional.

10.8.2. This phase, ISAT functional tests shall take place to verify that BRASS BGR systems' equipment and subsystems, after installation and interconnections, are fault-free, working properly and meet the relevant design specifications.

10.8.3. The testing includes:

a. Equipment Functional tests

b. Subsystems functional tests

c. Site system tests: including and not limited to testing of the system security, complete power supply, power load tests, switching between Main Power Supply System and SB and NB PSS, redundancy of power supplies, testing of electrical safety (RCD), Air conditioning units, Aircraft Warning Lights, fire alarm and extinguishing system, compliance etc.

d. Conformity of Subsystems to the corresponding Detailed Design Specification at subsystem level.

e. The build and test of the complete software from scratch using only the delivered configuration items (source codes, system files, drivers, etc.).

10.8.4. Entry/Exit conditions

a. Entry conditions:

i. TRR and Completion of System Installation report accepted.

ii. ISAT procedures approved by the Purchaser

iii. Site Installation Specifications (Final) approved by the Purchaser

iv. Approval to Test issued by HN National Security Accreditation Authority (SAA)

v. Successful completion of training of the Test personnel

b. Exit conditions:

i. All test criteria shall be passed successfully

ii. Recorded deficiencies which the Purchaser classifies as mandatory shall be cleared

iii. Acceptance of the ISAT Report by the Purchaser

10.8.5. The Purchaser acceptance of all ISAT Test Reports shall grant permission to the Contractor to proceed with the SAT of the BRASS BGR systems at sites.

10.9. System Acceptance Test (SAT)

10.9.1. After installation and integration, a SAT shall be performed with the following objectives:

a. To verify the integration of the system;

b. To demonstrate that the system is fully functional (i.e. each main function of the system shall be tested under real operational conditions);

c. For BRASS, to demonstrate that the ACMS is able to remote control the radio stations in Tx and Rx sites;

d. For BRASS, to demonstrate that the ACMS is capable of performing operational requirements (broadcast, ship-shore, MRL etc.).

10.9.2. During this phase, System Acceptance Test (SAT) functional tests shall take place to verify that;

a. BRASS BGR system equipment, subsystems/system, after integration, are fault-free, working properly and meet the relevant design specifications.

b. BRASS BGR system are able to fully meet all the operational objectives and requirements as set forth in SOW paragraph 3.2 above.

10.9.3. The testing includes:

a. System Functional Integration tests,

b. Conformity of System to the corresponding Detailed Design Specification at system level,

c. The build and test of the complete system from the delivered configuration items (source codes, system files, drivers, etc.), and

d. Operational tests to verify that the system fully meets the operational requirements as stated in SOW paragraph 3.2 above.

10.9.4. Entry/Exit conditions as per SAT TRR

a. Entry conditions:

i. SAT procedures approved by the Purchaser

ii. ISAT Report(s) accepted

b. Exit conditions:

i. All test criteria shall be passed successfully

ii. Recorded deficiencies that the Purchaser classifies as mandatory shall be cleared

iii. Acceptance of the SAT Report by the Purchaser

10.9.5. Contractor shall prepare at least following documents for Software installation & integration tests:

a. Test Plan

b. Test Description

c. Test reports

d. Test readiness Review Report

10.10. Test Reports

The Contractor shall supply the completed test reports for FAT and ISAT/SAT, that fully document the outcome of the tests, within two (2) weeks of completion of the respective tests procedures, for Purchaser review and acceptance.

10.11. Test Data Sheets (TDS) and Test Results

10.11.1. Test results shall be recorded on Test Data Sheets (TDS)(s). The Test Procedures that shall be issued and submitted to the Authority for approval shall include blank TDS that specify the data to be collected and the method to use for recording the results of the tests. The test data sheets shall contain, as a minimum, space for insertion of:

a. Test location and date;

b. Name and Organisation details for Test Director, Contractor and Purchaser Representative;

c. Equipment type and serial number(s);

d. Test procedure reference number and issue number;

e. Type and serial numbers of test equipment employed;

f. Test results;

g. Observations;

h. Comments;

i. Signature of the official representatives of the Contractor and the Purchasers representative.

10.11.2. One (1) copy of the test data sheets shall be provided to the Purchaser at the completion of testing. Where appropriate, back-up information such as photographs and graphic information used during testing shall be appended to the test data sheets.

10.12. Test Failure Procedure

10.12.1. If the tests to be performed do not result in accordance with the completion criteria relevant to the test being performed (i.e. failures) the subject test(s) will be withdrawn from the testing suit and a preliminary investigation into the cause of the failure shall be carried out and an observation report shall be provided by the Contractor.

10.12.2. Testing may resume with the next test after the withdrawal of the failed tests, if the successful termination of the withdrawn tests is not a prerequisite to the following tests. This shall be subject to the approval of the Purchaser.

10.12.3. The point at which testing of the withdrawn test(s) is to recommence will be proposed by the Contractor who shall provide the reasons for his proposal and details of remedial action taken in a written reply to the observation(s) raised. Either at that time, or subsequently, it shall be subject to the endorsement by the Purchaser.

10.12.4. The procedure shall permit other test series to be carried out should the Contractor propose that it is practical to continue testing, while a particular test has been withdrawn for investigation.

10.12.5. In the event that a particular series of tests meet the criteria after more than one attempt at any test, the Purchaser may request the repeat of the test(s) relating to that specification paragraph.

10.12.6. All tests shall be done to verify that the equipment provided under this contract meets the specified requirements; their results shall be recorded and any failure to complete a test successfully shall be recorded as deficiency.

SECTION 11 FINAL SYSTEM ACCEPTANCE (FSA)

11.1. Introduction

11.1.1. This section outlines the FSA process by which the deliverable items for which the Contractor is responsible under this contract will be accepted by the Purchaser. The procedure and documentation necessary at each stage of acceptance are defined to ensure that all contractual requirements are completed and that all deliverables are supplied to the Purchaser. The Contractor shall address the FSA Process as part of the PIP Section 8 which shall be updated before the FSA, if necessary.

11.1.2. The system shall be finally accepted (FSA completion) after the successful completion of the following phases:

a. Sucessful provision and installation of all supplies and services in accordance with SSS (excluding options) at sites and other designated locations

b. Satisfactory completion of applicable factory (hardware and software) FAT, sites (ISAT) and system acceptance tests (SAT).

c. Successful completion of any retrofit activity and/or regression testing resulting from previous testing activities with resolution of all deficiencies.

d. Successful provision and delivery of consumables, spare parts, COTS and other software licences, passwords and documentation.

e. Successful completion of the training and all contract requirements, except warranty.

f. Successful completion of Final System Acceptance (FSA) activities with closure of all observations and deficiencies.

11.2. Definitions

11.2.1. A deficiency is a formal record of any aspect that could jeopardise successful completion of the Contract.

11.3. Clearance of a Deficiency

11.3.1. A Deficiency is cleared when the Purchaser has endorsed that the corrective action taken in respect of the Deficiency has been completed to the Purchaser's satisfaction.

11.4. Deficiency Classification

11.4.1. Deficiency Classification is the classification that the Purchaser assigns to a Deficiency. The categories for classification are defined as:

a. Critical: Departure from the specification that must be rectified prior to the completion of SAT as applicable and before FSA can take place. The date by which this must be completed shall be agreed.

b. Deferment: Departure from the specification that may be rectified before or after the Test Procedure; the date by which this must be completed shall be agreed. Deferments that are not completed by the due date shall become critical for FSA unless the due date is modified by agreement.

c. Omission: A departure from the specification where it is agreed that no remedial action is necessary.

11.5. Deficiency Procedure

11.5.1. Deficiencies shall be handled in accordance with the following procedures. The Contractor shall submit all deficiencies to the Purchaser for endorsement of the clearance action taken.

11.5.2. A Deficiency shall be recorded when recognising any aspect that could damage successful completion of the Contract. These aspects shall include but not be limited to:

a. A design shortage or deficiency revealed in any design, implementation or test specification;

b. Any shortage or deficiency revealed by inspection or application of testing procedures;

c. Any comment raised by the Contractor concerning any aspect of the Contract;

d. Any comment raised by the Purchaser or his designated representative concerning any aspect of the Contract.

11.5.3. Deficiency sheets shall be maintained by the Contractor and shall record the following information:

a. The serial number of the deficiency sheet;

b. The deficiency;

c. Sufficient information to define the context of the deficiency in terms of the articles to which it applies, the state of articles (including any appropriate environmental details, as applicable), and the date of the deficiency;

d. The authorised personnel endorsing the deficiency;

e. Any clearance action taken, such as repair and testing, a specification modification, receipt of a written reply from the Contractor etc., as applicable;

f. The authorised personnel endorsing the clearance and the date of clearance.

11.6. FSA Entry and Exit Conditions

11.6.1. FSA is defined in this Contract as the act by which the Purchaser accepts all supplies and services provided by the Contractor, as defined below.

11.6.2. Entry conditions:

a. All deliverables, including documentation, test equipment, spares, licences, etc., for which the Contractor is responsible under the contract have been supplied and accepted by the Purchaser; (Documentation includes logbooks delivered in accordance with SOW paragraph 12.6.1)

b. A deliverables inventory has been provided that details all the deliverables to be supplied under the terms of the contract;

c. The SIS documents have been supplied with updates to accurately reflect the “As Built” configuration and verification of the accuracy of the Documentation has taken place;

d. CoC(s) has been supplied that the equipment conforms to the contractual standards and applicable manufacturing standards;

e. All observations and deficiencies have been resolved by the Contractor;

f. FAT, ISAT/SAT Reports have been submitted by the Contractor and accepted by the Purchaser.

g. A QA Report has been supplied by the Contractor's QA Organisation;

h. A complete list of Keys and any Password and/or Code necessary for the Purchaser to operate the system from day to day, has been supplied to the Purchaser.

i. Successful completion of the training and all contract requirements, except warranty.

j. Approval of Security Accreditation Support package and obtaining the Approval to Operate (ATO) as stipulated at SOW Section 5 and SOW Annex-F.

11.7. FSA Report (FSAR)

11.7.1. The Contractor shall provide the Final System Acceptance Report (FSAR) before the FSA meeting.

11.7.2. The documents listed below shall comprise the FSAR that shall be prepared by the Contractor:

a. CoC that the equipment offered conforms to the contractual standards and is in Conformance with the National codes, laws, regulations and local rules and practices of the Country of installation.

b. Deficiency Summary Sheets that shall list all outstanding deficiencies. A Remarks column shall briefly record the technical or operational significance and a decision column shall record the Policy Decision taken in respect of each Deficiency. A clearance date column and a signature column are also required.

c. FAT, ISAT/SAT Reports;

d. An Inventory of provided supplies that shall detail all the deliverables furnished by the Contractor to meet the terms of the contract for the FSA. The inventory shall include all licences identifiers and keys.

e. SIS documents, with updates, to accurately reflect the “As Built” configuration;

f. Acknowledgemnet of COTS and other software licences delivery;

g. A QA Report provided by the Contractor's QA Organisation.

h. Acknowledgement by MOD BGR and NCI Agency that all Keys and Password lists have been received.

11.8. Final System Acceptance Meeting (FSA meeting)

11.8.1. When there are no deficiencies open from the SAT Report, regardless of classification type, then the FSA meeting shall take place within four (4) weeks from SAT.

11.8.2. The FSA meeting shall be convened and chaired by the Purchaser when he considers that all the deliverables are ready for FSA. The Contractor shall arrange the taking, typing and distribution of minutes of the FSA meeting.

11.8.3. FSA shall be granted in writing from the Purchaser through the FSA document, which shall be signed by both the Purchaser and Contractor. The date of FSA shall be specified in this formal acceptance Document. Except as otherwise provided in the Contract, acceptance by FSA shall be conclusive except as regards latent defects, fraud or such gross mistakes or negligence as to amount to wilful intend.

11.8.4. In signing the FSA document the Purchaser certifies that the equipment or work concerned is in accordance with the terms of the Contract and thereby grants FSA.

11.8.5. Final Technical Transfer referred to SSS CLIN 1.4.8 is part of the FSA Meeting

SECTION 12 SITE PREPARATION AND INSTALLATION REQUIREMENTS/ CIVIL WORKS

12.1. General

12.1.1. The purpose of this section is to define the scope of the civil works to be implemented by the Contractor.

12.1.2. The Contractor’s responsibility consists of:

a. Antenna foundations;

b. Antenna mountings and installations;

c. Grounding/lightning of antennas and warning signs for BRASS and DLOS antennas;

d. Distribution electrical power panels for BRASS dedicated equipment and associated cable ducts,

12.1.3. All the warning signs and warning labels installed by the Contractor shall be provided both in English and Bulgarian languages.

12.1.4. All the works listed herein shall be planned, designed and implemented according to respective Bulgarian legislations and Health and Safety (H&S) Regulations (including but not limited to the Construction Law, Law on Environmental Protection and the Security regulations of BGR). [Spatial Development Act and Ordinance № RD-02-20-19 from 29.12.2011 for the design of construction construction of buildings through the implementation of the European system Design of Structures].

12.1.5. The design and implementation of the works listed herein shall also be compliant with respective HN regulations addressing local seismic conditions

12.2. Liaison with the Host Nation

12.2.1. Eight (8) weeks after signature of the contract, the Contractor shall provide to the Purchaser, a detailed draft Site Preparation Data Package (SPDP) for all sites. The Purchaser will review the Draft SPDP and send the comments to the Contractor in one (1) week upon receipt of draft SPDP. Upon revision of the SPDP, the Purchaser will coordinate a meeting, no later than within 2 weeks upon receipt of draft SPDP, in HN facilities between the Contractor, the Purchaser and HN to finalise the site facilities requirements and to achieve the approval of SPDP by the Purchaser. Planned Beneficial Occupancy Date (BOD), representing the date when the Contractor can start any site preparation works on site(s), will be recorded at the meeting. Contractor shall send the final version of the SPDP within one week after the meeting and Purchaser shall send the formal approval in one week upon receipt of the last version of the SPDP.

12.2.2. The Contractor shall not start any works on sites of the BRASS BGR system before receiving a Site Readiness Statement and approval confirming the BOD date from the Purchaser.

12.2.3. The contractor shall plan for, as a minimum, joint (HN, The Purchaser and Contractor) site visits at each site as follows:

a. The Contractor’s Site Survey (2 – 3 weeks after the Contract Award) conducted in order to collect necessary information for the SPDP preparation;

b. SPDP co-ordination meeting with the HN per SOW paragraph 12.2.1 above

c. An independent site visit in the middle of the site construction works. The most convenient time is to be co-ordinated between the HN and the Contractor;

12.2.4. During the site surveys, Contractor shall

a. identify the appropriate geographical positions for antennas installation and determine requirements for cable trenches dug for connection from antenna farm to RX/TX buildings.

b. determine the power and supply circuit requirements for the BRASS System including location for each room of electrical control panel, specialized plugs or electrical service some equipment may require.

c. assess the space available for installing the BRASS System including floor treatments requirements and minimum clearance height.

d. provide advice in HVAC ductwork and plumbing routing (for HN to ensure that HVAC ductwork and plumbing routing do not conflict with cable tray or telecommunications conduit routing);

e. clarify requirements for the grounding system including fault protection grounds, lightning protection grounds, signal reference grounds and DC power grounds; in particular “CIS Contractor” will determine the most appropriate location where “HN” shall install the Telecommunications Grounding Busbar in each BRASS System room;

12.2.5. It is the Contractor’s responsibility to assure protection of the equipment and materials delivered by the Contractor under this contract during the installation phase until FSA.

12.3. Access to the sites and use of existing facilities and utilities

12.3.1. The Host Nation will arrange a secure site to store all BRASS equipment delivered by the Contractor before the installation

12.3.2. HN will not be able to provide access to any communication and/or IT services including internet. It is the Contractor’s responsibility to organize his own means of communication.

12.4. H&S obligations, building permit and other associated legal licenses

12.4.1. During the performance of the Work under the Contract, in setting the working schedule for each site, the Contractor shall comply with National and local laws and regulations

12.4.2. Before the site survey, HN will nominate a National Technical Representative who will provide guidance on the above matters specified at paragraph 12.1.4.

12.4.3. The equipment provided by the Contractor shall comply with MIL-STD 461 and 462 or 2004/108/EEC as well as National laws and regulations to be applied, regarding electromagnetic compatibility.

12.4.4. The Contractor shall apply the doctrine stipulated in STANAG 2345 as well as National laws and regulations to be applied regarding protection against exposure to electric, magnetic and electromagnetic fields.

12.4.5. The installation of antennas supplied by the Contractor shall be properly connected to the grounding system in accordance with INFOSEC requirements.

12.4.6. Regarding contractor delivered equipment; Contractor shall conform to human engineering principles and criteria as required by IEC 950 or equivalent as well as national laws and regulations to be applied.

12.4.7. The Contractor shall apply ICAO requirements for Aircraft Warning Lights to be installed on antenna masts

12.4.8. The Contractor shall apply engineering principles, criteria and techniques to identify and eliminate safety hazards in the “BRASS System” in accordance with MIL-STD-882D as well as national laws and regulations to be applied.

12.4.9. The Contractor is responsible for obtaining all of the required building permits and related documents in accordance with BGR law.

12.4.10. HN is ready, upon request, to advise the Contractor, and if possible and necessary to assist, in the process of obtaining building permit, and other related authorizations.

12.4.11. Masts and equipment shall be supplied with all required homologation, certifications, operational and maintenance manuals both in English and Bulgarian languages.

12.4.12. All the warning signs and warning labels installed by the Contractor shall be provided both in English and Bulgarian languages. They shall be of sufficient quality and durability to withstand local weather conditions (including solar radiation) and assure at least 7 (seven) years of operation without substantial degradation.

12.5. Site Preparation Data Package (SPDP)

12.5.1. The Contractor shall provide the SPDP in conformity with the preliminary SPDP, attached to SOW Annex-C that shall include but not be limited to the following detailed information in a form of text and illustration:

a. Listing of the existing equipment and structures to be dismantled/demolished, (by HN) clearly indicating the ones that are to be reused, disposed by the Host Nation or re-installed;

b. Listing and status/working conditions of non-project related equipment that has to be temporarily dismantled to allow works by the Contractor;

c. Listing of equipment to be installed including functional description of each components as well as general equipment specifications to include;

i. physical specifications - height, length, width, and weight (floor loading) of each equipment rack, cabinet and console,

ii. equipment rack, cabinet and console templates,

iii. manufacturer's specific machine configuration and space requirements,

iv. maintenance access requirements for each equipment rack, cabinet and console.

d. Equipment layout including consideration of space between power and communication lines and RED/BLACK cables runs as stipulated in the document listed in SOW Section 4 above (paragraph 4.1.1. g and h);

e. Special requirement for movement of equipment on site;

f. Site facilities and utilities requirements during installation time;

g. Site layout plan including detailed layouts (placement) of all equipment racks, cabinets and consoles, showing equipment racks, Transmitters, Antennas, Short Break (SB) Power Supply Sub-System (PSS), No Break (NB) Power Supply Sub-System (PSS), HVAC, Fire Extinguishing System, etc. including equipment layout.

h. Positioning of the TEMPEST filters and/or isolators-couplers required to meet the requirements as stipulated in the document listed in SOW Section 4 above (paragraph 4.1.1. g and h) as well as to comply with the TEMPEST protection practices..

i. Any additional action that the Contractor might need such as provisional dismantling of electrical/electronic equipment during installation of the antennas or CIS equipment under this contract.

j. A heat load budget and Heating, Ventilating and Air Conditioning (HVAC) interface requirements for the BRASS BGR systems equipment that shall contain and not be limited to:

   i. heat load calculation,

   ii. operating and none-operating environment conditions (temperature range, relative humidity range, atmospheric pressure, ingress protection (IP rating)).

   iii. Pressure and any other special heating/cooling capacity requirements.

   (*Note: HN BGR will ensure that HVAC ductwork and plumbing routing do not conflict with cable tray or telecommunications conduit routing*).

k. A power budget and equipment power interface requirements, including location for each room of electrical control panel, specialized plugs or electrical service some equipment may require, input voltage and frequency tolerances, inter-unit cabling and connection differentiating their red and/or balck nature.

   (Note: Host Nation will ensure that power cables routing do not conflict with existing (power, telecommunications, etc.) conduit routing during Contractor's SPDP preparation and implementation.

l. Electrical diagrams including location and description of Electrical Power Distribution Panels (EPDP)(s), integration and interface with the SB PSS and Prime Power Supply System provided by HN, electirical power utilization plan including;

   i. location and description of power supply panel,

   ii. input voltages, frequency, and tolerances,

   iii. safety and secure grounding as per SDIP 29/2[3],

[3] *Ground, Secure: Ground serving as the grounding point for RED equipment. Because compromising emanations may be present on the grounding lead of RED equipment, the grounding electrode should be physically located within an inspectable space.*

iv. kVA required for each equipment rack, cabinet and console and the type of termination to Purchaser power supply, cable connections, terminal strip, etc,

v. phasing number and colour code of conductors per cabinet/rack,

vi. location of power and signal entry points and their respective penetration sizes,

vii. inter-unit cabling and connection differentiating their red and/or black nature

viii. UPS (Uninterruptible Power Supply)

m. Other CW requirements that are the Contractor's responsibility as stipulated in paragraph 3.5.

Note: After civil works are finished, HN Bulgaria will ensure that facilities meet security zoning and physical security area requirements prescribed for the level of classification of the BRASS BGR System.

n. requirements for the grounding system for antennas including fault protection grounds, lightning protection grounds, signal reference grounds and DC power grounds.

o. Identification of antenna civil works requirements for land excavation, levelling, trenching and disposal to be conducted by the HN.

p. identification of the appropriate geographical positions for antennas installation and requirements for cable trenches dug for connection from antenna farm to RX/TX buildings (required civil works related to trenches and manhole boxes foir transmission lines is Host Nation's responsibility).

Note: *HN BGR will ensure that cable routing do not conflict with existing (power, telecommunication, etc.) conduit routing*;

Ground, Safety: Ground to protect personnel and equipment from electric shock and damage in the case of faults occurring in the equipment. The safety ground may be considered a secure ground if it is contained within an inspectable space.

Inspectable Space: Inspectable space is the three dimensional space surrounding equipment processing NATO classified information within which TEMPEST exploitation is not considered practical or where legal authority exists to identify and remove a potential TEMPEST exploitation threat

q. (If any) List of trees to be removed and structures to be demolished.

r. special requirements for installation (requirements for vehicle, cranes, movement of equipment on site, wall penetrations, removal of existing antennas, etc..)

s. Electrical works required

12.5.2. In the SPDP, as defined and listed in the SOW paragraph 12.5.1 above, the Contractor shall thoroughly describe the civil works, power and site preparation requirements, that must be accomplished prior to the start of the installation of the delivered BRASS BGR Systems as set forth in the SOW Section 12 and SOW Annex C of the Prospective Contract

12.6. Recording of on Site Activities

12.6.1. Throughout the implementation of the project, the Contractor shall maintain at each site a logbook in which each incident, event and major activity shall be recorded on daily basis. Incidents or events include, but are not limited to: equipment failure, personnel incident, visitors, power failure, lighting strike affecting the site etc. Major activities include, but are not limited to: earth works, concrete pouring, antenna assembly etc. Additionally following information (non-exhaustive list) shall be recorded in the logbook: quantity and quality of material and equipment delivered to the sites (including remarks on rejected material/equipment due to non-compliance with required specifications or/and quality standards), number of personnel and names of team leaders conducting major activities, weather and environmental conditions affecting conducted works. When no incident happened, and no major activities were conducted the words “No significant event to report” shall be noted in the log book. The logbook records shall be reviewed, approved and signed by the site supervisor on daily basis. The logbook shall be delivered to the Purchaser as a part of the FSA documentation. Nevertheless, the Purchaser reserves the right to review the logbook at any given time during the project implementation. The logbook shall be presented for review either during site visits or sent to the purchaser via email as a scanned copy.

12.7. Disposal of Non-Reused Equipment and Structures

12.7.1. The Host Nation is responsible for dismantling of all radio and computer equipment if any that will not be reused for the BRASS BGR systems, as approved in the SPDP.

12.8. Hazardous material disposal

12.8.1. In case of finding unexploded ordnance or other explosive remnants coming from military and non–military activities, the Contractor is obliged to report that fact to BGR representative. Subsequent disposal will be conducted by BGR MIL at no cost to the Contractor.

12.8.2. There is very low risk of finding unexploded ordnance or other explosive remnants coming from military and non–military activities at ACMS, Tx and Rx sites.

12.8.3. Disposal of any material containing Asbestos is HN Bulgaria's responsibility.

12.8.4. Disposal of any hazardous material is HN Bulgaria's responsibility

SECTION 13 DOCUMENTATION

13.1. Technical documentation

13.1.1. The Contractor shall provide technical documentation as covered in the various Sections of this SOW and in SSS. The Purchaser will review the technical documentation and will provide comments to the Contractor within 15 working days after receiving the documents (unless specified otherwise in this SOW).

The technical documentation consists of the following main functional groups:

a. Logistics Documentation

b. Civil Work Documentation

c. Training Documentation

d. Technical Manuals

i. User Manuals

ii. Maintenance Manuals

iii. As-Built Drawings Technical Manuals

iv. Site Maintenance Manual

13.1.2. Logistics Documentation

a. The Contractor shall provide the various Logistics documentations as described in SOW Section SECTION 8 above in the appropriate format as described in SOW paragraph 13.3 below .

13.1.3. Civil Work Documentation

a. Whenever Civil Works Documentation is mentioned the definition includes also documents concerning other devices, equipment and installation, provided by the Contractor, as stipulated in SOW Section 12 Civil Works.

b. The Contractor shall provide the various Civil Works documentations as described in paragraphs pertaining CW in SOW Section 8 above. The documentation format shall be as described in SOW paragraphs from 13.2 to 13.9 inclusive, when applicable.

c. The CW documentation shall address and present graphically, in narrative form and in relevant tables, matrixes, part lists and calculations requirements stipulated in the EN Eurocodes and other listed below references (including but not limited to):

i. basis of structural design (EN 1990);

ii. actions on structure (EN 1991);

iii. the design of concrete (EN 1992), steel (EN 1993), composite steel and concrete (EN1994), timber (EN 1995), masonry (EN 1996) and aluminium (EN 1999) structures;

iv. geotechnical design (EN 1997);

v. the design, assessment and retrofitting of structures for earthquake resistance (EN 1998);

vi. Construction Products Directive (COUNCIL DIRECTIVE 89/106/EEC), particularly Essential Requirement 1 "Mechanical resistance and stability" and Essential Requirement 2 "Safety in case of fire";

vii. ISO Standards pertaining technical, construction and building drawings including relevant installations;

viii. ISO standards pertaining technical product documentation and document management;

ix. IEC 60617 – Graphical symbols for use in electro-technical diagrams;

x. IEC 60417 – Graphical Symbols for Use on Equipment;

xi. ISO 6790 – Equipment for fire protection and fire fighting -- Graphical symbols for fire protection plans – Specification.

13.1.4. Training Documentation

a. The Contractor shall develop all respective BRASS system hardware and software training, organise and conduct training courses and shall provide training documentation in accordance with the schedule in SSS, support in order to enable the Purchaser/HN personnel to test, operate and maintain the BRASS BGR System and its support equipment. These Documents shall conform to the standards outlined in this SECTION 13 and SOW SECTION 14 below.

13.1.5. Technical Manuals

a. The Contractor shall furnish BRASS BGR system user manuals and maintenance manuals that shall be developed to respond to the requirements of the personnel in operating and maintaining the BRASS BGR system and equipment. Whenever in section 13, BRASS BGR system or BRASS BGR system/equipment is mentioned the definitions include BRASS BGR Supporting Systems, provided by the Contractor, such as BRASS dedicated NB PSS, antenna masts, Aircraft Warning Lights, Lightning Protection, and Grounding.

b. The User Manuals shall be a system level document that addresses the operation of the BRASS BGR system as a single entity. The Manual shall describe operation and maintenance of the BRASS BGR System/Equipment, standard trouble shooting, repair and test procedures.

c. The Maintenance Manuals shall address the BRASS BGR system as a single entity, with appropriate drawings, of the mechanical, electrical and electronic assemblies and sub-assemblies that comprise the BRASS BGR system/equipment in sufficient detail to allow technical staff to maintain the system to site level. The Maintenance Manuals shall describe operation and maintenance of the BRASS BGR System/Equipment, standard trouble shooting, repair and test procedures.

d. The as-built drawings shall provide full details of how all of the major assemblies of the supplied equipment have been physically installed and mechanically/electrically integrated. These drawings shall comply with the standards described in SOW paragraph 13.7 below.

e. In-depth specification and lower level repair and maintenance of sub-assemblies and major system components are expected to be addressed by the Original Equipment Manufacturer's (OEM) Manuals. Operations and maintenance of the integrated system shall be addressed in the BRASS BGR User and Maintenance Manuals. The contractor shall edit, produce and deliver the required number of copies of the final versions in quantities specified in SSS and in format specified in SOW paragraph 13.3 below.

f. If changes to previously delivered documents have been made, the contractor shall deliver change pages, replacement drawings/schematic diagrams etc. as appropriate.

13.2. The Presentation of BRASS BGR User, Maintenance Manuals and Site Maintenance Plan

13.2.1. The presentation of BRASS BGR Manual by the Contractor shall include the following subject areas:

a. Preface;

b. Equipment Descriptions;

c. Installation and Commissioning Instructions;

d. Operating Instructions;

e. Maintenance Instructions

f. Fault finding techniques;

g. Crypto specific issues and procedures:

13.2.2. Preface

a. The Preface Section shall include a summary description of the concept of operation of the BRASS BGR Systems and its major constituent assemblies, subassemblies and components. The preface shall highlight major design features and restrictions. The preface shall contain a table of contents and a list of illustrations, drawings and acronyms. The preface shall also contain a section concerning Health/Safety and Accident prevention. The Health/Safety and Accident prevention section must be provided in English.

13.2.3. General Equipment Descriptions

a. The General Equipment Description Section shall contain a listing of all the important functional and performance parameters of the BRASS BGR system/equipment constituent assemblies, subassemblies and components. It shall include as applicable, the following:

i. Power consumption and ventilation data, e.g., quantity of cooling air in cubic meters per minute, temperature, vents, etc;

ii. Characteristics and acceptable deviations of all input signals;

iii. Characteristics and acceptable deviations of all outputs;

iv. The required external power supply voltage and frequency characteristics with acceptable tolerance;

v. Equipment performance and the environmental conditions over which the design performance criteria shall continue to meet;

vi. The overall weight of each major sub-unit;

vii. The overall dimensions and internal dimensions of each major sub-assembly;

viii. Detailed specification giving the accuracy and tolerance of built-in test equipment and facilities.

b. As a sub Section, the Contractor shall indicate whether there is an OEM manual that has been delivered with the system documentation. For all equipment that does not have an OEM Manual, the Contractor shall provide detailed specifications for the equipment, including drawings and diagrams as well as instructions for replacing the LRU for the equipment.

13.2.4. Installation and Commissioning Instructions

a. The Installation and Commissioning Instructions Section shall include the electrical and mechanical information necessary for mounting and de-mounting the major assemblies, subassemblies and components of the related BRASS BGR system/equipment constituent and step-by-step instructions for the proper installation/de-installation of the BRASS BGR System as a whole. Items also to be covered in this Section are:

i. Detailed mechanical installation instructions;

ii. Detailed external and inter-unit cabling instructions, including earthing and grounding connections;

iii. Detailed list of checks to be carried out prior to application of power for the first time;

iv. Detailed list of checks to be carried out following application of power and prior to putting the equipment into service. Where these checks are identical to the maintenance procedures reference may be made to the maintenance procedures, as duplication of text is not required;

v. List of tools, test equipment and software etc required for fault isolation, exchange and check-out of LRUs.

vi. Detailed sequence of instructions required to install all software in a new computer and run the software.

vii. All relevant administrator instructions pertaining to access control.

13.2.5. Operating Instructions

a. The Operating Instructions Section shall include basic operating procedures covering but no limited to the following:

i. Switching ON power;

ii. Powering up the System;

iii. Logging

iv. External communications;

v. Interpretation of alarm and warning conditions and associated immediate action instructions;

vi. Emergency procedures and back-up systems;

vii. Powering-down the System;

viii. Switching OFF the equipment;

ix. Emergency Switching OFF.

b. In order to provide a comprehensive description of the operation of the BRASS BGR System, the Contractor shall, in this Section as applicable, provide a functional and performance description of all equipment that is visible to the operator, when deployed or in storage. The description shall cover the overall physical, electrical and electronic characteristics, as applicable, using as back-up information block diagrams, photographs or other suitable illustrations. All major assemblies shall be clearly identified, and also all operator and maintenance control panels. The function of each control and indicator shall be included in tabular form.

c. The description shall include details of all circuits and mechanisms to permit the reader to obtain a thorough understanding of the design principles and operation of the equipment. It shall include, but not be limited to, the following:

   i. Detailed descriptions of all electrical and electronic circuits, as applicable, including circuit functions of integrated circuits where used;

   ii. Detailed description of the mechanical construction of all assemblies and sub-assemblies including detailed descriptions of all included mechanisms;

   iii. The purpose and associated characteristics of each variable control, and adjustable mechanism;

   iv. All interface characteristics;

   v. Detailed construction and servicing data to permit maintenance and replacement when necessary.

13.2.6. Maintenance Instructions

a. The maintenance instructions section shall include, but not limited to, the following:

   i. Maintenance operations summary for organizational, intermediate and depot level

   ii. Recommended test equipment

   iii. Procedures for performance tests

b. The instructions shall be provided in accordance with the following maintenance levels:

   i. 1st LEVEL, Organizational

ii. 2nd LEVEL, Intermediate

iii. 3rd LEVEL, Depot

c. The instruction shall include a schedule of preventative maintenance operations indicating the periodicity intervals, daily, weekly, monthly, etc.

13.2.7. Fault Finding Techniques

a. The Finding Techniques Section shall contain a description of the faults most likely to occur, with the related symptoms, comprehensive procedures for fault tracing, location and repair identifying the required test facility (BIT Equipment, test equipment, test fixtures), and any special servicing instructions.

b. Tables shall be included stating the operating limits of all voltage supply lines and conditions of measurement. Where applicable, corresponding current limits shall be given; the average value of current taken by each stage and by each unit and/or sub-unit shall also be stated.

13.2.8. Crypto specific issues and procedures

a. The handling, packaging and transportation of Cryptographic equipment and documentation shall comply with NATO rules and be accomplished in accordance with SDIP-293/1.

13.2.9. Site Maintenance Plan

a. The site maintenance plan shall collect the preventative maintenance operations of all the devices and equipment. The document shall be used by technical personnel as their principle document for their support operations. The document shall contain check list forms to be used by the personnel for logging and reporting activities.

13.3. Format Criteria

13.3.1. Contractor developed Documentation and Manuals shall be provided in loose-leaf form, and presented bound in stiff backed covers with 4-ringed binders that permit the removal and insertion of individual pages and drawings. The manual shall lie flat when opened at any page.

13.3.2. Drawings contained in the manual shall be on a pull-out sheet and so positioned on the sheet that the complete drawing is clear of the text when the sheet is opened out. As an alternative, drawings may be published in a separate volume without the pull-out feature. In either case, drawings shall not be folded more than twice and when folded be of normal manual page size. Horizontal folding shall be avoided.

13.3.3. Manuals shall also include a cover and title, plus a title page laid out as follows:

a. TOP: NATO classification of the manual and the name of the manufacturer of the equipment;

b. MIDDLE: Name of assembly or unit, type designation, number and name of the part of the manual and contract number;

c. BOTTOM: NATO classification of the manual and the number and date of approval.

13.4. Publication Criteria

13.4.1. The manuals, exclusive of covers shall be produced on the best grade white bond or lithographic paper. All paper used for drawings and calibration curves etc. shall be of a quality and thickness that will permit repeated folding and opening without tearing and cracking at the folds.

13.4.2. The individual pages in the manuals shall be Deutsches Institut für Normung (DIN) A-4 size (210 mm x 297 mm), pre-perforated and shall be so arranged and confined (including the titles and page numbers) within standard printing size margins for binding. The pages of the manuals shall be consecutively numbered.

13.4.3. Each page shall contain the appropriate NATO classification of the manual at the top and bottom of each page.

13.4.4. All drawings and schematic diagrams are to be of the same length as other pages of the manuals. The appropriate NATO classification shall be at the top and bottom of each drawing and, in addition, each drawing shall also contain the security classification in the identification block of the drawing.

13.5. Drawings, Illustrations and Photographs

13.5.1. The Drawings, illustrations and photographs Section in manuals shall permit identification of the location of all assemblies and, subassemblies. The drawings shall show the interconnection of these units and how to isolate and remove the units from the System in order to replace or perform maintenance.

13.5.2. Where Original Equipment Manufacturer Manuals do not exist, or are inadequate in detail, inter-unit and sub-unit cabling and wiring diagrams shall be provided for all electrical and electronic assemblies; annotated line drawings shall be provided to permit identification of all mechanical assemblies and mechanisms and parts thereof. As a minimum, the following drawings shall be included:

a. A block diagram of the system and/or sub-systems;

b. A block diagram of assemblies and sub-assemblies;

c. A block diagram of major units;

d. Layout diagrams of modules and boards/CCAs;

e. Flow diagrams of the signals of the whole equipment with indication of adjustment and tuning parameters - voltages and wave-forms shall be shown not only for test points separately identified on the equipment, but also at all other points necessary to perform routine maintenance, fault diagnosis and corrective maintenance.

13.6. Original Equipment Manufacturer Manuals

13.6.1. For all assemblies, subassemblies, components and parts that the Contractor obtains from other manufacturers/vendors and incorporates into the BRASS BGR System and test equipment, the Contractor shall provide the OEM Operating Manuals.

13.6.2. These Manuals shall provide the detailed information necessary for the BRASS BGR Operators to disassemble and assemble the units down to the lowest replaceable unit level of maintenance and provide the necessary drawings/schematics, specifications, wiring diagrams etc, to allow the operators to trouble shoot and fully understand the design and operation of the particular equipment.

13.6.3. OEM manuals are to supplement the BRASS BGR Operator's Manuals and thus are expected to be referenced in the latter as a way of providing the specific detail on the particular equipment. The contractor shall provide the OEM Manuals on CD-ROM and in hardcopy with exactly the same number of copies of each to the HN sites together with the associated equipment.

13.7. As-Built Drawings

13.7.1. As-built drawings shall be self-sufficient and independent of any other documents.

13.7.2. There shall be a master list of as-built drawing provided for each site respectively.

13.7.3. The master list of as built drawings shall contain at the minimum following information: site identification and the master list title, issue of the master list, and following data reference every listed drawing: ordinal number, number, title, issue, and number of sheets.

13.7.4. The as built drawings shall be compiled in a drawing package for each site respectively. The compilation shall be done against the ordinal numbers assigned to every drawing in the respective master list.

13.7.5. The title of each drawing and each master list plus all included text and annotations shall be in English.

13.7.6. The number and scale of each drawing (where applicable) shall be clearly indicated, in addition to the issue number of each drawing.

13.7.7. Definition(s) may be given on the drawing, where used, or on a summary sheet, or sheets, at the front of the document.

13.7.8. All drawings shall be to a scale of not less than 1:50.

13.7.9. As-built drawings shall cover the following, as applicable:

a. All floor and wall plans to include the physical details of all installed equipment, apparatus and devices plus CW modifications and new structures implemented by the Contractor;

b. The physical details of all installed equipment, apparatus, devices etc., if not visibly depicted due to the original scale of the drawing, shall be presented in an appropriate scale to enable clear identification as to their type and function. If applicable, narrative description shall be inserted;

c. All plans and drawings necessary to represent correctly and completely antenna farms, antennas, masts, theirs foundations, associated cabling and ducting with connections to equipment and devices provided by HN, roads and other CW implemented by the Contractor;

d. Location plan with complete details of all cross-connection frames and patch panels;

e. A plan showing the descriptions of all grounding and earthing conductors, electrodes and joints and where they are connected to any existing earthing system;

f. Physical details of all cable racking and cable numbers and cable functions to include as appropriate all connections, connectors and sockets;

g. Details covering all wiring termination points including wire numbers and colour coding, if applicable;

h. Ancillary equipment details to include, as appropriate, connection points and termination points;

i. The functions of all inter-connecting cables, with their codes, colour code and the function of each separate conductor;

j. Drawings showing only an axonometric view of any given piece of equipment are not acceptable. The drawings shall depict all the necessary interconnections, inside view of installed equipment and dimensions;

13.7.10. An Purchaser approved “As Built Product Drawings and Associated Equipment List” are the basis for Acceptance of sites installation and integration.

13.8. Format for As-Built Drawings

13.8.1. The drawings shall be printed on not larger that DIN A-1 sized sheets.

13.8.2. A consistent numbering system for the as-built drawings shall be adopted that reflects the contract, project, system, assembly and/or sub-assembly and sequence number.

13.8.3. The scale of all drawings shall be quoted, where applicable.

13.8.4. The appropriate NATO classification shall be on the top and bottom of each drawing and, in addition, each drawing shall also contain the security classification in the identification block of the drawing, which shall be placed in the lower right hand corner.

13.9. Delivery and Verification of As-Built Drawings per Site

13.9.1. 10 weeks before the FSA, the Contractor shall deliver two complete sets of draft marked-up as-built documentation.

13.9.2. A joint review of the as-built documentation shall be conducted between the Purchaser, Host Nation and the Contractor within one week receipt of draft one week,

13.9.3. Upon completion of the review the Contractor shall edit, produce and deliver the required number of copies of the final draft version eight (8) weeks prior to conducting the formal FSA activities. The Final version of the as-built documentation shall be delivered at FSA.

13.9.4. If changes to previously delivered documents have to be made, the Contractor shall deliver replacement drawings/schematic diagrams and/or aperture cards as appropriate.

13.9.5. Final Version of the overall BRASS BGR level As-Built documentation shall be delivered one week before FSA as specified in SSS, for each BRASS BGR site.

13.10. BRASS BGR Logbooks per Site

13.10.1. From the start of each type of integration activities for BRASS BGR System, the Contractor shall keep a Logbook of all events concerning that system through to FSA.

13.10.2. In particular, the logbook shall record all Contractor activity and equipment performance.

13.10.3. All equipment failures or parts replacements shall be documented in the logbook with a traceable means to determine reasons for failure of the specific (serial numbered) equipment.

13.10.4. The logbook shall be used as an input to assess the reliability of the equipment.

13.10.5. All logbooks shall be periodically countersigned by the Purchaser's representative and a copy handed over to the Purchaser during FSA.

13.10.6. The Contractor may retain the original but shall not maintain a parallel equipment-related activity logbook or similar records for company use only.

13.10.7. The Purchaser reserves the right to review the logbook at any given time during the project implementation. The logbook shall be presented for review either during site visits or sent to the purchaser via email as a scanned copy.

13.11. Test Procedures and Test Reports

13.11.1. These documents shall be produced and delivered in accordance with the requirements given in SOW.

13.12. Soft Copy Format

13.12.1. “Soft copies” of all documentation composed and compiled by the Contractor shall be delivered in CD-ROM or DVD format to Purchaser and HN and shall be compatible with latest version of Microsoft Office suite maintaining compatibility with previous versions, MS Project and Portable Document Format (PDF), following a basic naming convention like [BRASS-BGR]-[title]-[date”yyyy.mm.dd”]-[version]-[originator].

13.12.2. OEM Manuals shall be delivered in the format specified above, if available. If not available in this format, one of the other common use formats will be accepted. If the commercial documentation is not available in CD-ROM, another form of electronic media is acceptable with the prior authorization of the Purchaser PM.

13.12.3. As-Built Drawings shall be delivered on the Software Graphics Package, AutoCAD, Visio and .PDF.

13.12.4. The physical support of the electronic, optical or soft copies shall display the highest level of the classification of its contents.

13.12.5. The Header and/or Title of the directory structure of the documentation provided in soft copies shall bear a reminder of the highest classification level of its contents.

13.12.6. For ease of handling, unclassified documentation shall be separated from classified documentation and provided on separate CD-ROM or DVD whenever possible.

13.13. Amendments

13.13.1. The Contractor shall be the responsible authority for the issue, control, and distribution of amendments to delivered documentation in the format provided for the associated equipment or system until expiration of the warranty period.

13.14. Language

13.14.1. All deliverable documentation shall be provided in the English language. Documentation affecting Safety Hazard and health protection matters shall be delivered in both English and HN language -Bulgarian

13.15. Manual Issuing Schedule

13.15.1. Two releases of manuals shall be issued for each equipment; firstly a draft version and then the final version.

13.15.2. The Contractor shall submit draft copies of each manual (as specified in SSS) to the Purchaser for review not later than two (2) months prior to the delivery of the BRASS BGR System at the first site location. Any resulting recommended changes, corrections and/or additions submitted by the Purchaser shall be incorporated and the final versions, in the requisite number of copies. The Contractor shall submit the final versions of the manuals within the time frame as specified in the SSS.

13.15.3. However, until the expiration of the warranty, the Contractor shall remain responsible for any changes to the manuals required as a result of any omission or inaccuracy discovered in use or, whenever changes/modifications in equipment or spare parts are made under the Contractor's responsibility. Changes to the final manual may be in the form of change pages, provided that a suitably updated change-page listing of all changes is supplied with each group of loose pages changed.

13.15.4. The Contractor shall deliver the final accepted copies of each manual at the time of FSA for all subsequent systems.

13.15.5. The Contractor shall deliver hard copies and soft copies of the BRASS BGR Operators' Manuals as specified in the SSS, separately for each BRASS BGR Site.

13.15.6. The format requirements of electronic media are detailed in SOW paragraph 13.12 above.

13.16. Documentation Submission Plan

13.16.1. The Contractor shall prepare and maintain a complete record of all documentation required under this Contract. This Document Record shall be submitted as part of the PIP Documentation and shall be continuously updated throughout the life of the Contract to reflect the current status of all documents.

13.16.2. The Contractor shall also maintain version control of all documentation submitted throughout the Project life cycle.

13.16.3. Following documentation shall be delivered by the Contractor according to the following table, as further specified in SSS. This list does not waive the Contractor from delivering any of the documentation items specifically covered by the Contract and Purchaser approved PIP.

Document	Reference	CLIN in SSS
General Documentation (CDRL)		
Project Implementation Plan (PIP)	SOW 2.3	1.1
CDR Documentation	SOW 4.6; 13	1.2.1
Interface Control and Management Documents	SOW 2;3;4;7;13	1.2.2

Document	Reference	CLIN in SSS
As-Build Drawings	SOW 4; 8; 10; 13	1.2.3
User Manuals	SOW 13	1.2.4
Maintenance Manuals	SOW 13	1.2.5
Site Maintenance Plan	SOW 13	1.2.6
Logistics documentation	SOW 13	1.2.7
Logbooks	SOW 13	1.2.8
Recommended Spare Parts List	SOW 8.3	3.1
Recommended Tools and Equipment List	SOW 8.4	3.1
Site Installation Specifications	SOW 3.7	4.3
Training documentation	SOW 13; 14	4.9.2
Reports		
Project Checkpoint Reports	SOW 2.4	1.3.1
Project Progress Reports	SOW 2.5	1.3.2
Detailed Design Specifications	SOW 4.6; 13	1.3.3
Configuration Item (CI) specifications	SOW 4; 7	1.3.4
Installation Checkout Reports	SOW 10.5	1.3.5
Configuration Status Accounting	SOW 7.13	1.3.6
Test Procedures and Test Reports	SOW 10; 13	1.3.7
Test Readiness Review Reports	SOW 10.4	1.3.8

Document	Reference	CLIN in SSS
Final System Acceptance Report	SOW 11.7	1.3.9
Deficiency Clearance Report	SOW 11.2, 11.3, 11.4, 11.5	1.3.10
Documentation Record	SOW 13.16	1.3.11
FAT Report	SOW 10	2.1
Site Survey Reports	SOW 3.6	4.1
Training Reports	SOW 14	4.9.4; 4.9.5; 4.9.6
Security Documentation		
Security Accreditation Plan (SAP)	SOW 2.3; 5	9.1
Security Test & Verification Plan (STVP)	SOW 2.3; 5	9.2
System Security Requirements Statement (SSRS)	SOW 2.3; 5	9.3
System Interconnection Security Requirements Statement (SISRS)	SOW 2.3; 5	9.4
Security Operating Procedures (SecOps)	SOW 2.3; 5	9.5
Security Risk Assessment	SOW 2.3; 5	9.6

SECTION 14 TRAINING

14.1. General

14.1.1. The Contractor shall develop all hardware and software training, organise and conduct training courses and shall provide training support in order to enable the Purchaser/HN Personnel to test, operate and maintain the BRASS BGR System and its support equipment (including No Break (NB) Power Supply Sub-System (PSS), BRASS dedicated HVAC and Gas Fire Extinguishing System (FES) at the BRASS ACMS site).

14.1.2. The contractor shall conduct a training programme for his responsibility area and provide the training material necessary to ensure the Purchaser's/HN's personnel gain the necessary skills and knowledge to operate, maintain and repair the respective BRASS BGR Systems/equipment.

14.2. Training Requirement Analysis (TRA)

14.2.1. The Contractor shall develop a Training Requirement Analysis (TRA), to determine the gap between the current and the expected knowledge and qualifications of the nominated trainees for all courses, except the training for test personnel. The TRA shall be conducted to identify the differences between the trainees current skills and those required to operate and maintain the BRASS BGR. The TRA shall be based on a questionnaire submitted to the trainees by the contractor.

14.3. Training Plan

14.3.1. The Contractor shall develop a Training Plan based on the TRA provided by the Contractor as stated in SOW paragraph 14.2.1 above. In addition, the Training plan shall provide detailed proposals for all Contractor provided training, including syllabuses, schedules, student prerequisites, evaluations and instructors. The Contractor's proposed format may be acceptable subject to approval by the Purchaserl.

14.3.2. The Contractor shall prepare and submit a draft Training Plan as part of the PIP for Purchaser's approval at least three months before start of any training. The Training Plan shall describe how the Contractor shall conduct the totality of the training.

14.3.3. Two (2) weeks after receipt of the Purchaser's comments, the Contractor shall deliver, for Purchaser's acceptance, the final version of the Training Plan that shall incorporate all Purchaser comments.

14.3.4. The final version of the Training Plan, as accepted by the Purchaser, shall be the official document against which the Contractor is expected to conduct the training.

14.3.5. The Training Plan shall contain a training schedule that shall be in the form of a course block time table, showing the sequence of periods of instruction.

14.3.6. Each block shall show the lesson title and its assignment as: classroom, hands-on equipment and/or testing.

14.3.7. The Training Plan shall furthermore contain a course syllabus providing the following information:

a. Course title;

b. Security classification;

c. Total duration in hours;

d. Course objectives;

e. General course information;

f. Training equipment or special equipment/tools requirements including those support equipment to be provided by the HN (i.e. a VGA Projector and Screen, a White Board with White Board Markers and the availability of a photo copier machine);

g. Maximum number of student working positions; and

h. Classroom requirements.

14.3.8. The Training Plan shall provide information on the training to be provided to HN personnel. The Training Plan shall identify appropriate courses or course modules to provide initial training for all initial site personnel and to meet specific training requirements of test personnel, HN instructors and software support site personnel. The Contractor shall, when possible, consolidate instructors from all sites onto a single set of courses and may consolidate system managers training. The Plan shall include the following information for each course:

a. Course description. This shall be a narrative explanation of the subject matter of the specific course. The course format, objectives, and training materials shall be described in sufficient detail to ensure the students will receive required training. A proposed syllabus shall be included, detailing the subject matter to be covered. Any breakdown into modules shall be described.

b. Student prerequisites (if required).

c. Course length (including time devoted to each area of the course).

d. Method of presentation for each element of the syllabus (show breakdown of methods, i.e., lecture, demonstration, hands-on and directed studyetc.).

e. Method of evaluation. Establish minimum acceptable written and performance standards and a method of evaluation of directed study. A plan shall be included to show that each student achieved at least minimum course objectives by written and performance tests.

f. List of training material and training equipment required (contractor-provided documents or materials shall be included). This shall include the appropriate standards for electronic data.

g. Description of the minimum capabilities of necessary training equipment, together with the logistic implications of using the training equipment.

h. Recommended maximum size of course. Recommended location of training and type of facility required (i.e., classroom, auditorium, facility, etc.)

i. List of measurable objectives (tasks) required by graduates to demonstrate successful completion of course.

j. Proposed schedule for training course.

k. Relationship to related programme milestones and to Test & Evaluation schedule.

l. Number of hours of "hands-on" training to be provided to each student

14.3.9. Where commercial courses are proposed, the Training Plan shall include as much of the information required in previous paragraph as is available, together with a justification for using the commercial course.

14.3.10. In addition to the required information for each course, the Training Plan shall include the proposed training schedule for each site, indicating the courses or modules required for each trainee and optimising the trainees' learning and attendance requirements. The Plan shall also show the overall training schedule, showing how limited resources (such as instructors, training facilities and training equipment) will be provided for each course.

14.3.11. The Training Plan shall contain the Curriculum Vitae (CV) of each proposed instructor.

14.4. Training Program

14.4.1. For the training purposes, student groups shall include the personnel assigned for the following standard posts of a BRASS System, of which definitions and tasks are set forth in Annex A and Annex-B of this SOW:

Student Groups	Posts of BRASS System
FAT, ISAT and SAT “Test Personnel”	System Administrator HN and Purchaser Representatives.
BRASS System Administrators	System Administrator

Student Groups	Posts of BRASS System
System Operators	Watch Supervisors Assistant Watch Supervisors Broadcast Operators Ship/Shore Circuit Operators MRL Circuit Operators
BRASS Maintainers	System Technicians
BRASS supporting equipment maintainers / operators	Technicians (SB and NB PSS, HVAC, Gas FES)

14.4.2. The training program shall consist of the following courses, and it is the sole responsibility of the Contractor to assure that all training provided at the different levels outlined here below allows Control, Operation and Maintenance in accordance with the Operational requirements and Maintenance concept.

Required level of knowledge	Type of the course		
	Operators	Maintainers	System Administrators
BRASS ACMS Software and System functionality	Yes	Yes	Yes
BRASS BGR system administration	No	No	Yes
Radio comms operating	Yes	No	Yes
Radio maintenance	No	Yes	No
BRASS supporting equipment maintainers / operators	Yes	Yes	No

Total Students to be trained	Host Nation
System Administrators	3
Instructors for Operators	3
Operators	10
Instructors for Maintainers	3
Maintainers	3
Test personnel	3
BRASS supporting equipment maintainers / operators	2

14.4.3. As a general rule, all Instructors participate in the normal training courses. The Instructors for Operators are expected to be System Administrators.

14.5. Training Courses

14.5.1. Training for System Administrators:

a. The Contractor shall conduct training for the BRASS BGR System Administrator Personnel. The related training material shall be delivered in accordance with the SSS of the BRASS BGR project.

b. The training shall cover all aspects required to administer, configure and operate the BRASS BGR System and any of its sub-systems taking into consideration the privileges and authorizations of the System Administrators.

c. It shall include as necessary Control aspects, all Operational and hardware and software configuration aspects.

d. After the training, the System Administrators shall be able to operate, configure and administer the BRASS BGR system hardware and software at the relevant locations within the HN.

e. The Contractor shall recommend the number of courses to be held for all personnel to be trained. All training shall be held at the locations within the HN (Asparuhovo, Gorna Traka and Galata).

f. Exact dates for the courses shall be mutually agreed by the Parties and shall be consistent with the requirements of the SSS.

14.5.2. Training for Test Personnel:

a. The Test Personnel are the personnel designated by the HN among all personnel of BRASS BGR System to participate in the BRASS BGR test and evaluation activities.

b. The Contractor shall provide training for the Purchaser/HN test personnel that will participate in the BRASS BGR test and evaluation activities. The contractor shall provide specific training for test personnel immediately before the start of tests. The training for test personnel shall cover test methods, test procedures and test equipment used during acceptance tests. This training shall provide the trainees with the skills needed to use the appropriate tools in all the tests involving Purchaser participation.

c. Exact dates for the courses shall be mutually agreed by the Parties and shall be consistent with the requirements for conducting tests as required either during the FAT, ISAT or SAT.

14.5.3. Training for Operators:

a. The Contractor shall conduct training for the BRASS Operator Personnel. The related training material shall be delivered in accordance with the SSS of the BRASS BGR project.

b. The training shall cover all aspects required to configure and operate radio communication equipment and software functionality of the BRASS System and any of its sub-systems. It shall include as necessary control aspects for all operational features of hardware, firmware and software of the system.

c. After the training, the Operators shall be able to operate the BRASS system at their locations within the HN (Asparuhovo, Gorna Traka and Galata).

d. The Contractor shall recommend the number of courses to be held for operator personnel to be trained. All training shall be held at the locations within the HN (Asparuhovo, Gorna Traka and Galata).

e. Exact dates for the courses shall be mutually agreed by the Parties and shall be consistent with the requirements of the SSS.

14.5.4. Training for Maintainers:

a. The Contractor shall conduct training for the BRASS BGR Maintenance Personnel. The related training material shall be delivered in accordance with the SSS of the BRASS BGR project.

b. The training shall cover all aspects required to configure, maintain and trouble shoot the BRASS BGR System and any of its sub-systems (including NB and SB PSS, BRASS dedicated HVAC and Gas Fire Extinguishing System (FES) at the ACMS site). It shall include as necessary control aspects for all hardware, firmware and software maintenance aspects.

c. After the training, the Maintainers shall be able to configure, maintain and trouble shoot the respective hardware, firmware and software of BRASS BGR System at the locations within the HN (Asparuhovo, Gorna Traka and Galata).

d. The Contractor shall recommend the number of courses to be held for all personnel to be trained. All training shall be held at the locations within the HN (Asparuhovo, Gorna Traka and Galata).

e. Exact dates for the courses shall be mutually agreed by the Parties and shall be consistent with the requirements of the SSS.

14.6. Instructor Training (Train the Trainer)

14.6.1. Instructors are the personnel designated by the HN among all personnel of BRASS BGR System.

14.6.2. For each course provided for personnel as per SOW paragraph 14.4.2 above, the Contractor shall also provide equivalent training for Instructors designated by the HN. Additional course modules shall provide the instructors with the necessary knowledge and skills to maintain the training material and material up-dates provided by the Contractor.

14.6.3. The training shall cover all aspects required to operate and maintain the BRASS and Systems.

14.6.4. It shall include all the required Control aspects, all Operational and hardware and software maintenance aspects.

14.6.5. After the training, the Instructors shall also be able to perform all follow-on Training courses for Personnel at all levels.

14.7. Duration of Training courses

14.7.1. For all Training courses, the contractor shall recommend the course length in the training Plan to be submitted, which will be subject to Purchaser acceptance.

14.7.2. The Contractor shall assume that the daily course instruction shall not exceed six (6) hours per day.

14.7.3. Courses shall only be scheduled on normal working days and not on weekend or public holidays.

14.8. The Host Nation Personnel Qualifications

14.8.1. The Host Nation Personnel will have the following qualifications:

a. Operators will have or will acquire knowledge of specific Operating Systems and Tools.

b. Maintainers will have or will acquire knowledge of digital Radio technology.

c. System Administrators will have or will acquire knowledge of specific Operating Systems and Servers and will also be instructed in digital radio and transmission techniques.

d. System Administrators and Operators will have or will acquire Allied Communications Publication (ACP) ACP127 knowledge.

14.8.2. It is the responsibility of the HN to assure that the students meet the requirements of SOW paragraph 14.8.1 above.

14.8.3. The training for Host Nation personnel shall be developed on the assumption that they are military operators with a minimum electronics and/or information technology background as stated.

14.9. Language Qualifications

14.9.1. It can be assumed that Host Nation personnel selected to attend the courses will meet the minimum Standardized Language Proficiency (SLP) of 2222 in English corresponding to NATO STANAG 6001.

14.10. Contractor Instructors

14.10.1. The qualification of the Contractor instructors shall be addressed apart from the confirmatory terms. Contractor instructors shall be certified engineer/technicians, thoroughly familiar with the subject matter. They shall have experience in preparing and conducting training.

14.10.2. The instructors shall meet a minimum of SLP 4444 in English corresponding to the NATO STANAG 6001. Because the students will come from the HN the Instructor shall be obliged to use easily understandable English.

14.10.3. All instructors shall have a security clearance of “NATO SECRET”.

14.11. Training Material

14.11.1. The Contractor shall prepare and submit in advance to the Purchaser all material that will be used for the training no later than two weeks before the training. The Purchaser approved training material shall be available before the courses start.

14.11.2. Training material shall be designed and developed to be suitable for use during the Contractor-conducted training and for the future training of all categories of replacement personnel by HN Instructors..

14.11.3. The package shall include the following capabilities as a minimum.

a. Definition of the Final training objectives

b. Choice between mandatory and optional lessons, steps and points as determent by course entrance tests.

c. Topics to be covered for each lesson, step and point.

d. For each topic, video clips, animation, still photos and test as necessary for the full explanation of the topic.

e. Exercises for every lesson.

f. Test at the end of every lesson.

g. Results of the tests per lesson and per course.

h. Evaluation of the quality of the course by relating the test results to the course objectives in a cumulative statistical analysis.

14.11.4. HNThe Contractor shall make maximum use of available technical manuals for the preparation of training material.

14.11.5. Training material shall not duplicate any information readily available in other documents unless justified by specific training needs and shall adhere to documentation standards as per SOW SECTION 13 above.

14.11.6. HN will provide the necessary facilities (i.e. Training room) and support equipment for training (i.e. a VGA Projector and Screen, a White Board with White Board Markers and the availability of a photo copier machine) as stated in the approved Training Plan.

14.12. Training Documentation

14.12.1. Training documentation provides the minimum documentation required to conduct and maintain the training programme. Training documentation includes data in electronic media and in hardcopy as appropriate.

14.12.2. The Contractor shall provide training handbooks for each training course.

14.12.3. The training handbook shall be used as the student's main working document.

14.12.4. The training handbook shall provide the student with necessary information on all lesson objectives and contents, guidance for all learning activities and cross-references to assist the students in achieving the course objectives.

14.12.5. The instructor guide shall be a complement to the training handbook.

14.12.6. The instructor guide shall contain all necessary information to prepare, conduct and evaluate lessons, exercises and examinations. This shall include fault-finding or fault-isolation exercises and classroom or practical examinations with the associated answers.

14.12.7. The documentation shall contain sufficient instructions to guide students through all specified training. Existing manufacturer's training and service manuals, preferably in electronic format, can be used in so far as they meet specified requirements. The training documentation should be for students with the prerequisite knowledge of similar equipment or relevant theory, use of general electronic test equipment and a basic knowledge of hand tools. Training documentation stored in an electronic database shall meet the requirements set forth in the contract Statement of Work and Procurement Specification(s), ensuring that the areas discussed below are accessible and completely detailed. Instructions shall be provided on how to electronically access database information.

14.12.8. Format: Contractor's format is acceptable subject to Purchaser approval. However, the material for each course or module shall include a table of contents. This shall include a listing of all major subjects and the page number or image on which they appear or instructions on how to electronically access the data.

14.12.9. For each course, the training documentation shall consist of course documentation for trainees and instructor material to support a training programme. The training documentation shall cover as a minimum, all the topics identified in the course syllabuses included in the Training Plan.

14.13. Review and delivery of the material

14.13.1. All training material prepared and delivered under this contract shall be subject to review and approval by the Purchaser.

14.13.2. The Contractor shall deliver the following documentation for each type of training to the Purchaser for review sufficiently in advance to allow for coordination/negotiation of any necessary changes in the early stages of development of the material:

a. A representative lesson plan from each of the proposed training handbook;

b. The corresponding sections from the Instructor Guide;

c. Any supporting aids;

14.13.3. The Contractor shall subsequently submit two complete sets of draft training material within two (2) months of the start of the first training course to permit the Purchaser to review them.

14.13.4. The Purchaser will review the material for not more than one (1) calendar month and provide to the Contractor comments and requests for revisions as appropriate.

14.13.5. The Contractor shall deliver the final version of the training material to the Purchaser not later than two (2) weeks prior to the start of the first training course.

14.13.6. The course material shall be designed to guide the students in obtaining the required skills through the training programme concerned. The course material shall provide adequate information about the sections listed below. Relevant sections shall include a number of exercises to evaluate student understanding of information provided in that section. Each section may refer the student to other supplemental written or audio-visual material (e.g. transparencies, 35 mm slides, charts, computer discs, DVD format video, or other commercially available electronic medium in the appropriate NATO/European format), which shall be included in the package. Additional topics and material can be added. Course material shall include the following sections, as appropriate.

a. Required Material. Data indicating all equipment and material required by the student, including test equipment, audio-visual material, tools, and supplies,

b. General information about the system, software or equipment for which the training will be carried out,

c. Installation and preparation instructions,

d. Operating information, covering all personnel who interface with the system concerned, during all phases of its use,

e. Technical description,

f. Hardware Maintenance, covering routine inspections and adjustments, preventive maintenance and corrective maintenance (troubleshooting and repair) at relevant maintenance levels,

g. Software Maintenance, covering system recovery following software problems on-site and in-depth adaptive, perfective and corrective software maintenance at the responsible support site,

h. System Management, including the system manager functions and all other specialised areas, such as security, database, network and communications management,

i. Reference data

14.13.7. Instructor Material: Guidance for instructors shall be provided. The guidance shall include

a. Student exercises and all answers and other marking guidance,

b. Descriptions of points where instructor involvement, observation, or action is necessary or recommended to ensure safety or verify student performance,

c. Instructional malfunctions to be introduced by the instructor and diagnosed and repaired by the student. A minimum of five malfunctions is required for each separately identifiable system, module or circuit. The malfunctions should approximate as nearly as possible, problems likely to occur, and may consist of a combination of system maladjustments and bad components. A listing of malfunctions will be given that shall include:

i. Action required by instructor to install malfunction; exact component or module to replace or maladjustment to make,

ii. Description of symptom caused by malfunction,

iii. Test equipment and tools required to detect and isolate the malfunction or procedures required to recover software functionality,

iv. Suggested allowable time for student to diagnose malfunction.

14.14. Presentation by Trainer

14.14.1. The Contractor shall be prepared to provide demonstration lessons, randomly selected by the Purchaser in order to provide evidence of the preparedness of the lessons and capabilities of the Instructor.

14.14.2. The Purchaser can require this demonstration at a mutually agreed time prior to the commencement of any formal training.

14.15. Quantities

14.15.1. The Contractor shall deliver the following quantities of training documentation for each type of training. This is in supplement to what needs to be provided for each student (E= Electronic, P=Printed Version):

Type	Draft Qty	Final Qty
Instructor guide	2 E	1 E + 8 P
Student handbook	2 E	1 E + 8 P

Type	Draft Qty	Final Qty
Instructor guide for Train the Trainer	2 E	1 E + 8 P
Student handbook for Train the Trainer	2 E	1 E + 8 P

14.15.2. An additional copy of each type of training documentation shall also be provided, in accordance with the provisions stated in SOW paragraph 13.12 above.

14.16. Training Management

14.16.1. At least two calendar weeks prior to the start of a course the Contractor shall provide a written certification that all required/agreed training staff, facilities, equipment and other resources are ready for the conduct of the training.

14.16.2. The performance record shall be based on the results of regular test(s) performed by the trainees during/after the training courses to evaluate the understanding of the lecture.

14.16.3. The Contractor shall provide each graduate at the end of the courses with a personal certificate. One copy of each certificate shall be submitted to the Purchaser.

14.16.4. The Contractor shall not let students leave the course without permission.

14.16.5. The Contractor shall accept that the Purchaser can nominate up to two (2) members of the Project Team, NCI Agency or HN, to attend each course in a monitoring role; such attendees will be additional to the planned course size.

14.16.6. The training shall be assisted by threshold knowledge test(s) for nominated personal. If the total test results represent 50%, or more, fail results, the Contractor shall report that fact to the purchaser and repeat the concerned lecture(s) at no additional costs.

14.17. Trainee and Training Course Completion Report and Certificates Of Training

14.17.1. Description Purpose: The Trainee and Training Course Completion Report provides the results and evaluation of training for presentation of each course carried out. Certificates of Training are provided for each trainee who completes the course satisfactorily.

14.17.2. Source documents. The applicable issue of documents cited herein, including their approval dates and dates of any applicable amendments, notices and revisions shall be as specified in the contract.

14.17.3. Format. The format of the completion report shall utilise Appendix C of MIL-STD-1379 as guidance.

14.17.4. Content. The Completion Report and Certificates of Training shall contain the following:

14.17.5. Front matter. Content of the front matter shall utilise Appendix C of MIL-STD-1379 as guidance.

14.17.6. Evaluation of Training: The Evaluation of Training shall consist of the following:

a. Name of Contractor. The name of Contractor shall be the complete name of the Contractor or Sub-Contractor conducting the course

b. Instructor in charge. The name of the instructor in charge.

c. Course information consisting of:

i. Course title.

ii. Location of the course.

iii. Duration (with dates) of the course.

iv. Course objective.

v. System/equipment/software covered by the course.

vi. Grading system for the course (e.g. pass levels, distinction levels).

vii. Total number of trainees.

viii. Number of trainees achieving each grade

d. Trainees information consisting of:

i. Name of each trainee.

ii. Rank/grade of each trainee.

iii. Branch of service/agency and parent unit of each trainee.

iv. Attendance information for each trainee.

v. Individual and cumulative total grade in quantitative terms for each trainee.

vi. Instructor's evaluation of each trainee.

vii. Any specific certification required following training (e.g. for test operators).

viii. Student course critique

ix. Action taken or recommended;

x. Problems encountered (if any)

e. Instructor evaluation of training consisting of:

i. Considerations about course material, course presentation, value of training aids, tools and equipment, remarks and recommendations of overall course.

ii. All problems encountered during the conduct of the course, such as students without agreed prerequisites, deficient subject coverage, equipment failures and documentation deficiencies. Recommendations for any supplemental training that may be required shall also be included.

f. A Certificate of Training shall be completed for each trainee who satisfactorily completes the conducted course. The certificate shall contain, as a minimum, the following:

i. Name of organisation conducting the training.

ii. Title of the course.

iii. Subject matter, if not apparent from the course content.

iv. Location where the course took place.

v. Dates of the course.

vi. Rank/grade of trainee.

vii. Parent unit of trainee.

viii. Statement of satisfactory (or better) completion of the course.

ix. Any specific certification resulting from the course.

x. Signature and name of responsible training officer

14.18. TIME FRAME FOR TRAINING -

The Contractor shall apply to following timeframe for trainings

CLIN IN SSS	Training	TIME FRAME no later than (NLT)
4.9.3	Training of Testing Personnel	For FAT: EDC + NLT 43 weeks For ISAT: EDC + NLT 55 weeks For SAT: EDC + NLT: 57 weeks
4.9.4	Training of Operators (including reports)	After SAT – Before FSA NLT 60 weeks
4.9.5	Training of Maintainers (including reports)	After SAT – Before FSA NLT 60 weeks
4.9.6	Training of System Administrators (including reports)	After SAT – Before FSA NLT 60 weeks
4.9.7	Instructor Training (Train the Trainer	After SAT – Before FSA NLT 60 weeks

Appendix 1 to Book II Part IV

ABBREVIATIONS/ACRONYMS

A	
A/C	Analysis/Certification
ACMP	Allied Configuration Management Publication
ACMS	Automated Control and Management System
ADP	Automatic Data Processing
AMSG	Allied Military Security Guidelines
ARQ	Automatic Repeat Request
ASTM	American Society for Testing and Materials
ATE	Automated Test Equipment
B	
BCOA	BRASS Co-ordinating Authority
BCS	BRASS Control Stations
BCST	Broadcast
BER	Bit Error Rate
BGR	Bulgaria
BICC	BRASS Initial Core Capability
BIT	Built In Test
BOD	Beneficial Occupancy Date
BRASS	Broadcast Maritime Rear Link and Ship/Shore System
BREITA	BRASS Enhancements Increment one (1) Target Architecture
BSAS	BRASS Security Accreditation Strategy
C	
C2	Command and Control
CALS	Computer-aided Acquisition and Logistic Support
CAT	Computer Aided/Assisted Training
CC	Configuration Control
CCA	Circuit Card Assemblies
CCTV	Closed-circuit Television
CDR	Critical Design Review
CE	compromising emanations
CI	Configuration Item
CID	Configuration Identification and Documentation
CIS	Communications and Information Systems
CISS	Communication Interface and Switching System
CLD	Central Logistics Depot
CLIN	Contract Line Item Number
CLS	Contractor Logistic Support
CLS	Contractor Logistics Support

CM	Configuration Management
CO	Contracting Officer
CoC	Certificate of Conformity
COLOC	Change of Location of Command
COTS	commercial off the shelf
CP	Capability Package
CSA	Configuration Status Accounting
CSR	Configuration Status Report
CUN	Common User Network
currents	conducted interferences
CW	Civil Works
D	
DDS	Detailed Design Specifications
DEM	Demonstration
DHS	Delivery of Hardware on Site
DIN	Deutsches Institut für Normung
DTS	Data Terminal Set
E	
ECP	Engineering Change Proposal
EDC	Effective Date of Contract
EDCN	Equipment Design Change Notice
EMC	Electromagnetic Compatibility
EMI	Electromagnetic Interference
EMI/EMC	Electromagnetic Interference and Compatibility
EN	European Norms
EPDP	Electrical Power Distribution Panels
EU	European Union
F	
FAT	Factory Acceptance Test
FCA	Functional Configuration Audit
FES	Fire Extinguishing System
FIP	Fleet Interface Point
FSA	Final System Acceptance
FSA	Final System Acceptance
G	
GQAA	Government Quality Assurance Authority
GSM	Global System for Mobile Communications
H	
HF	High Frequency
HMI	Human Machine Interface
HN	Host Nation
HQ	Headquarters

H&S	Health and Safety
HVAC	Heating, Ventilating and Air Conditioning
I	
IAW	In accordance with
ICOA	International Civil Aviation Organization
IEC	International Electronical Commission
IETM	Interactive Electronic Technical Manual
IFB	Invitation for Bid
ILS	Integrated Logistics Support
ILSP	Integrated Logistic Support Plan
INFOSEC	Information Security
IS	Inspectable Space
ISAT	Individual Site Acceptance Test
IT	InformationTechnology
L	
LAN	Local Area Network
LRU	Lowest Replaceable Unit
LSF	Low Smoke and Fume
M	
MIL	Military
MIL-STD	Military Standards
MOD	Ministry of Defence
MPDB	Main Power Distribution Board
MPS	Message Processing System
MRL	Maritime Rear Link
MTBF	Mean Time Between Failure
N	
NATO	North Atlantic Treaty Organisation
NB PSS	No Break Power Supply Sub-System
NCI Agency	NATO Communications and Information Agency
NDN	National Defence Network
NGCS	NATO General Communication System
NLT	Not Later Than
NQAR	National Quality Assurance Representative
NSN	NATO Stock Number
O	
OEM	Original Equipment Manufacturer
OJT	On-the-Job Training
ORLA	Optimum Repair Level Analysis
OTAM	Off The Air Monitoring
OU	Operating Unit
P	
PABX	Private Branch Exchange

PAI	Preliminary Acceptance Inspection
PC	Personal Computer
PCA	Physical Configuration Audit
PMCP	Project Management and Control Plan
PCR	Project Checkpoint Report
PDF	Portable Document Format
PERT	Program Evaluation Review Technique
PFE	Purchaser Furnished Equipment
PIP	Project Implementation Plan
PLF	Power Line Filter
PM	Project Manager
PMP	Project Management Plan
PMS	Project Master Schedule
PPM	Project Progress Meeting
PPM	Project Progress Meetings
PPR	Project Progress Report
PSK	Phase Shift Keying
PSS	Power Supply System
PTO	Project Team Organisation
PWBS	Project Work Breakdown Structure
Q	
QA	Quality Assurance
QC	Quality Control
R	
RAMP	Risk Assessment and Management Plan
RAMT	Reliability, Availability, Maintainability and Testability
RCD	Residual Current Detectors
RF	radio-frequency
RFD	Requests for Deviation
RFW	Requests for Waiver
RON	Repair On Need
RPM	Revolutions per Minute
RSC	Remote Supervisory and Control
RSPL	Recommended Spare Parts List
RTTL	Recommended Tools and Test Equipment List
Rx	Receiving
S	
SAP	Security Accreditation Plan
SAT	System Acceptance Test
SB PSS	Short Break Power Supply Sub-System
SDD	System Design Document
SDIP	(SECAN) Doctrine and Information Publications

SECAN	Military Committee Communication and Information Systems Security and Evaluation Agency
SecOps	Security Operating Procedures
SEP	System Engineering and Design Plan
SIRS	System Interconnection Requirement Statement
SIS	Site Installation Specifications
SIS	Site Installaton Specifications
SLP	Standardized Language Proficiency
SNMP	Simple Network management Protocol
SOI	Start of Installation
SOW	Statement of Work
SPD	surge protection devices
SPDCN	Spare Parts Design Change Notice
SPDP	Site Preparation Data Package
S-S	Ship-Shore
SSEP	System Safety Engineering Plan
SSR	Site Survey Report
SSRS	System Security Requirement Statement
SSS	Schedule of Supplies and Services
STANAG	Standardization Agreement
STVP	Security Test & Verification Plan
SITP	System Installation Transition Plan
SUCOC	Succession of Command
T	
TAT	Turn Around Time
TDS	Test Data Sheet
THD	Total Harmonic Distortion
Tx	Transmitting
U	
UPS	Uninterruptible Power Supply
V	
VDC	Volts of Direct Current
VMSS	Voice Management Sub-System
W	
WBS	Work Breakdown Structure
WS	Workstation

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IFB AMD 2

BOOK II
PART IV

ANNEX A
SYSTEM REQUIREMENTS SPECIFICATION

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SECTION 1 INTRODUCTION

1.1. Purpose

1.1.1. The purpose of this document is to specify the System Requirements of BRASS portion of the BRASS BGR project that is planned for modernization and upgrade of the existing HF Maritime Radio Stations and COMMCEN (Communication Center) of Bulgaria.

1.1.2. The purpose of a general BRASS system is to provide communications and associated services between the ashore Maritime Commanders and their assigned naval forces.

1.2. Scope

1.2.1. The System shall provide Broadcast, Ship-shore, MRL and Voice Communication capabilities to Bulgaria and to NATO in accordance with BRASS Baseline specifications. It shall manage and conduct the provision, implementation monitoring and acceptance of BRASS compliant Automated Control and Management System (ACMS) in Naval Communications Centre GORNA TRAKA (NAVCOMMCEN) in order to improve its performances and services interoperable with NATO units. New transmitting and receiving sites shall be established in ASPARUHOVO and GALATA to improve HF coverage. The ACMS and Tx/Rx radio sites are on the outskirts of the city of Varna on the Black Sea Cost.

1.2.2. The core software shall be a replication of the Approved BICC SW (BRASS Initial Core Capability Software), adapted by the Contractor for the Host Nation (HN) to tailor the specific installation and integrated with Commercial off the Shelf (COTS) applications.

1.2.3. Scope of the project is summarized below

a. Implementation of a full BRASS ACMS capability with Message Processing; Communications Interface and Switching; Remote Supervisory and Control; Voice Management; and Power Supply sub-systems;

b. Implementation of eight 5kW solid-state HF transmitters, related antenna matrix (min 10x11) and ancillary equipment at Asparuhovo Transmitter Site;

c. Implementation of 6 wide-band dipole and 2 Rotatable Horizontal Log-periodic Array (RHLPA) antennas at Asparuhovo Transmitter Site;

d. Implementation of 5 HF receivers, related antenna matrix (min 7x7) and ancillary equipment at Gorna Traka Receiver Site;

e. Implementation of 3 wide-band dipole and two RHLPA antennas at Galata Receiver Site;

f. Implementation of a DLOS system, consisting of base stations, masts and antennas to connect the Gorna Traka (ACMS), Asparuhovo (Tx) and Galata (Rx) sites;

g. Implementation of a voice system that can be connected to either the RED or BLACK network, thereby providing both secure and unclassified services. Contractor's design shall not allow RED traffic to flow into the BLACK network (or vice-versa) through the voice system.

h. Civil works at all 3 stations to include BRASS and DLOS antenna foundations and subsequent installation and mounting as well as distribution electrical power panels. The Contractor is responsible for antennas' correct operation.

1.2.4. The Asparuhovo transmitter site is in an elevated position about 100m above the nearest inhabited areas. Contractor shall take necessary precautions to avoid risk of interference with other commercial, public safety or international users. In the event of unexpected interference being identified, corrective action shall be taken by the Contractor.

SECTION 2 GENERAL BRASS SYSTEM CHARACTERIZATION

The following information is taken from BRASS Baseline Architecture.

Unless otherwise stated, the specifications and descriptions described below shall be accepted as requirements for the BRASS BGR system.

2.1. General Description

2.1.1. The purpose of BRASS is to provide communications and associated services between the ashore Maritime Commanders and their assigned naval forces.

2.1.2. Implementation of BRASS shall provide enhancement to Broadcast, Maritime Rear Link (MRL), and Ship Shore (S-S) services; thus ensuring timely, accurate and reliable command communications and exchange of information between Maritime Commanders and their assigned naval forces, as operationally required. It further provides:

a. Interoperability between different naval communications systems;

b. Security and survivability;

c. Flexibility;

d. Adaptive communications management by Maritime Commanders;

e. A high degree of automation, supervision and control;

f. Exchange of information/directives among the BRASS authorities, which are BRASS Co-ordinating Authority (BCOA), BRASS Control Authority (BCA) and BRASS Control Stations (BCS). Those are operational entities for the operational control of the broadcast capabilities.

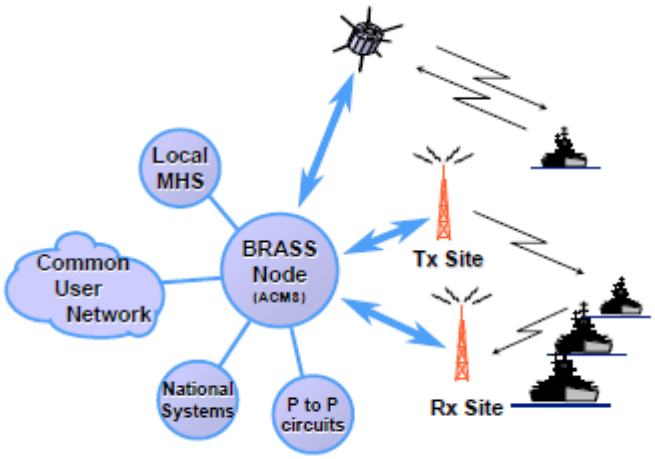

Figure 1: General BRASS High Level Conceptual View

2.1.3. Routing of messages from shore to ship is normally performed by one-way transmission, shore to ship, called “BROADCAST” that do not require reply from the ship. Routing of messages from ship to shore is performed by a two-way link called “SHIP-SHORE”. For particular purposes a two-way link called Maritime Rear Link “MRL” may be established for exchanging record message traffic between a Command ashore and a Command afloat.

2.2. Maritime Communications Control Organization and Duties

2.2.1. The Maritime Communications Control Organization has a hierarchical structure and comprises three levels of authority;

a. The Broadcast Co-ordinating Authority (BCOA) is the highest authority within the Maritime Communications Control Organisation, responsible to the Strategic Commander(s) for the coordination of all maritime communication services.

b. The Broadcast Control Authority (BCA) is responsible to the Operational Control (OPCON) Authority for communication planning and managing broadcast, ship-shore and MRL services in support of operations and exercises. It is located in a NATO/National Maritime Headquarter (HQ).

c. The Broadcast Control Stations (BCS) are the lowest level of BRASS authority that is operating and controlling BRASS services (Broadcast, Ship-Shore and MRL). They have to monitor circuits and correct technical malfunctions where necessary and when possible. In the current BRASS system, the BCS provides a network-enabled Fleet Interface Point to the NGCS, NATO Messaging Systems, national systems (where security certifications allow) for military messaging in a variety of formats (e.g., X.400, STANAG 4406 Annex-E SMTP, ACP-127).

2.2.2. In this organization each BRASS Control Station shall:

a. receive the message traffic to be dispatched by the Broadcast(s);

b. compile the Broadcast(s) and forward it to the Transmitting Site in keystream form;

c. perform the OFF The Air Monitoring (OTAM) of each radiated HF Broadcast;

d. switch and route received and transmitted messages between all connected systems and PtoP users.

e. manage the Ship-to-Shore circuits associated with the Broadcasts;

f. manage MRLs circuits;

g. forward the message traffic received on the Ship-to-Shore circuits;

h. perform any format modification to adapt the traffic received on the Ship-to-Shore circuits with the format required by the forwarding circuits;

i. store, retrieve and forward on request, the message traffic handled by system;

j. manage the backlogs, if any;

k. log all the relevant activities performed within the system.

l. provide capability to generate messages.

m. reroute messages to another broadcast.

n. implement contingency procedures in support of 24/7 operation.

2.2.3. In addition to above listed tasks, each BRASS CS shall also perform the following routine activities, strictly linked with the Broadcast management:

a. issue its own daily Broadcast Guard List,

b. issue hourly Traffic Lists (RECAP);

c. inform the users of a Broadcast about the traffic dispatched on it.

2.2.4. BRASS CS shall also include the capability for exchanging messages with the respective Broadcast Coordination Authority (BCOA) and BRASS Control Authority (BCA) all the information necessary to allow the superior authorities to perform their functions.

SECTION 3 OPERATIONAL OBJECTIVES FOR THE BRASS IMPLEMENTATION

The overall operational requirement for a BRASS system is to provide the automation and enhancement of the services described in subsequent sections within the ACMS, Rx and Tx sites.

3.1. Support By/To a NATO BRASS Node

3.1.1. Adequate support by/to other BRASS nodes is an important aspect of the BRASS system. The support can range from a mere re-routing of traffic via an alternate path, to radiating additional Broadcast or Ship-Shore components upon approval by the parent Broadcast Co-ordination Authority (BCOA). Approval by the BCOA is not automated in the BICC software.

3.1.2. Support is required in two cases:

a. In case of major failure of one element of a BCS;

b. To improve the coverage of a given broadcast.

3.1.3. Failure of one element of the BRASS Control Station may require a support from an adjacent BRASS Node. Failures can occur in three ways.

- Transmitting site is out of order;
- Link between BCS and transmitting site is out of order;
- BCS is out of order.

a. **Transmitting Site is Out of Order**:

Considering the following figure, the Broadcast Control Station (A) (BCS (A)) is still capable of compiling its broadcast but its TX site is out of order.

In this case there shall be two support options.

i. The compiled and encrypted broadcast message (in keystream form) is transferred to the adjacent BCS (B). There it is sent to the Tx (B) where the keystream is transmited by using some of frequencies allocated to (B).

ii. The message is sent to BCS(B) through CUN. BCS(B) then compiles, encrypts and transmits the broadcast message using its own TX site.

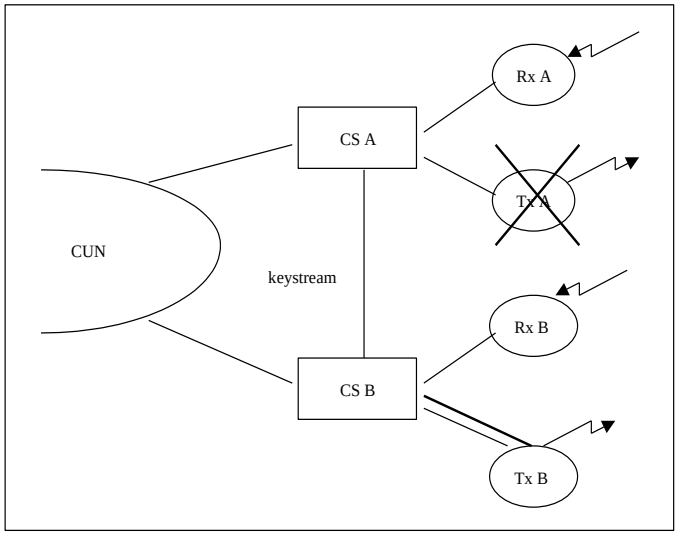

Figure 2: Connectivity needed when Tx site is out of order

b. **Link between BCS and transmitting site out of order**

Considering the following figure, this case is similar to previous case and the same options shall be valid for this case too.

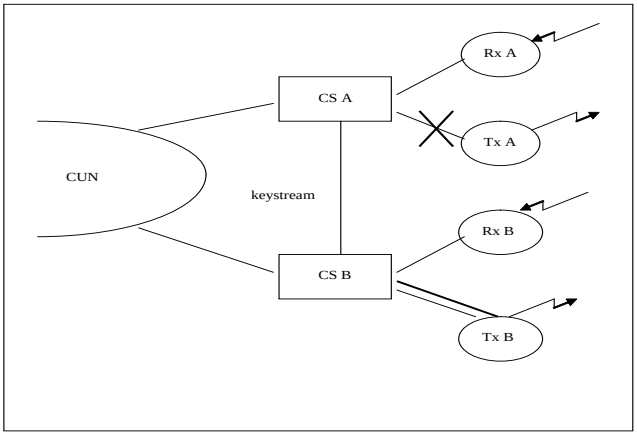

Figure 3: Connectivity needed when link between BCS and its transmitting site is down

c. **BCS is out of order**

Considering the following figure, the ACMS cannot compile its broadcast.

In this case the following way of action shall be possible.

The message is sent to BCS(B) through CUN with ACP-127. BCS(B) then compiles, encrypts and transmits the broadcast message using its own TX site.

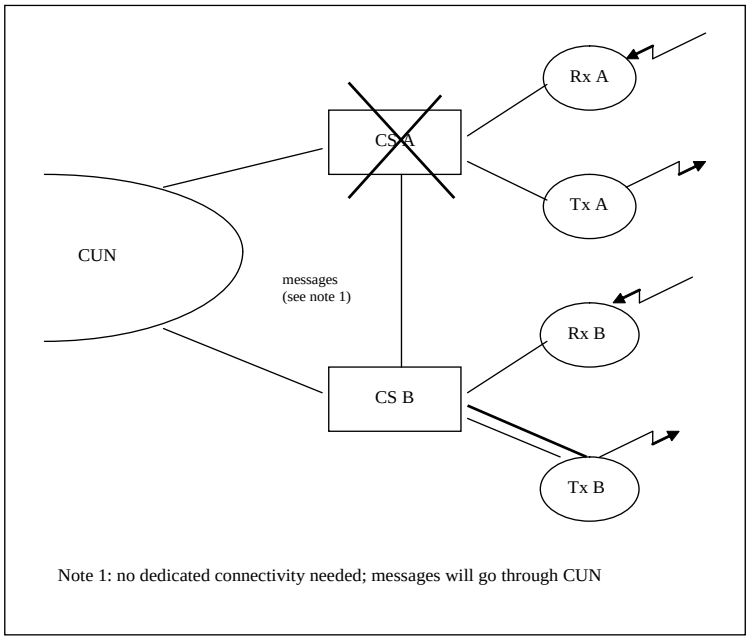

Figure 4: Connectivity needed when BCS is out of order

3.1.4. **Improve the coverage of a broadcast**

a. To improve the coverage of a given broadcast, it may be necessary to transmit some messages or the whole keystream through an additional transmitting site. If the whole broadcast has to be transmitted through an additional site, the case is similar, from the adjacent point of view, to the case of a transmitting site failure. The system shall allow the following scenario:

i. First. the BCS A shall transmit the compiled broadcast keystream to BCS B:

ii. Second. the BCS B shall radiate the keystream from its transmitting site, using some of its own frequencies.

b. Due to the limited amount of available frequencies and transmitters, the performance of the broadcast naturally belonging to B will decrease (i.e.: improving the coverage of one broadcast will then deteriorate the performance of any other broadcast).

3.2. Functional Requirements to Support By/To a NATO BRASS Node

3.2.1. The ACMS shall be able to be connected to the National Defence Network (NDN) and thereto to the NATO Point-of-Presence to receive/transmit messages and key streams from/to external users, including NATO ACMSs.

3.2.2. To allow the above mentioned (paragraph 3.1 of this Annex), supports, the present node shall keep the broadcast databases of an adjacent node to support up to date.

3.2.3. The system shall be able to accept the key-stream from another BRASS node. The key-stream is the output of the crypto device that shall be transmitted directly, without further processing by the red side of the system. Data rates for key-streams shall be in compliance with the data rate specified in Broadcast, S/S and MRL services. The same rates apply to the BGR BRASS project for HF services for Broadcast, Ship Shore and MRL. National Connectivity to NGCS is a Host Nation / NATO responsibility, and the Contractor shall assume that there is an interface point to the NDN in ACMS. Approved NATO operating procedures and concept for data transfer between NATO General Communication System (NGCS) and National Defence Networks (NDN) will be employed for retransmission of NATO key streams (re-keying).

SECTION 4 PARTICULAR BULGARIAN BRASS SYSTEM DESCRIPTION

4.1. Purpose

4.1.1. The purpose of implementing BRASS in Bulgaria (National Component) and upgrading the existing communications equipment is to provide adequate telecommunications infrastructure (receivers, transmitters, ancillary equipment, and antennas) to BRASS implementation, as well as providing a backup to NATO BRASS facilities in the Eastern and Southern regions.

4.1.2. This project shall develop shore-based surface C2 infrastructure in Bulgaria in accordance with NATO standards. The overall operational requirement for this project is to provide the automation and enhancement of the required services within the ACMS and the Rx site in Galata and Tx site in Asparuhovo. The implementation shall follow the specifications and requirements as in this Contract which, by itself, prepares the capability for an eventual future BRASS Enhancement implementation.

4.1.3. The installation of BRASS compliant Automatic Data Processing (ADP) and radio support in Bulgaria, is required to improve its performances and to automate some tasks that are presently manually carried out by operators (man-functions), through implementation of proper ADP oriented solutions (machine-functions).

4.1.4. It shall use existing equipment to the maximum extent possible; however, it shall provide the required hardware (mainly COTS products) to make it a coherent entity.

4.1.5. The core software shall be a replication of the existing NATO-owned BRASS software, integrated with COTS applications. However, due to the inherent specificity of the project architecture, some software modifications and adaptations (to the core software) shall be done. This will be further detailed in following sections. The Annex B “Software Functional Description” constitute the functional requirements of the BICC SW as originally contracted.

4.1.6. The Contractor shall provide installation, modification and adaptation of the BICC SW (as specified in SSS CLIN 8) to the specific implementation proposed by the Contractor and that are not included in the Annex B functionalities.

4.2. Provided Services:

4.2.1. The overall operational requirement for this project is to establish the following services within Naval Communications Centre GORNA TRAKA (NAVCOMMCEN), using new transmitting and receiving sites.

a. Provision of NATO Broadcast re-key capability;

b. Off the Air Monitoring (OTAM);

c. Management of naval Broadcast, Ship-Shore, MRL and Point-to-Point (PtP) circuits;

d. Provision of plain and NATO secure narrow band voice communications;

e. Support to shore to ship messaging;

f. Management of Crypto equipment;

g. Automatic storage and retrieval of message traffic handled by Naval Communications Centre GORNA TRAKA (NAVCOMMCEN);

h. Remote control of assets belonging to the system in transmitting and receiving sites.

4.2.2. The system shall provide the following general services

a. **Broadcast re-key**

Re-keying and monitoring of one NATO compiled and directed broadcast and provision of one National Broadcast in accordance with STANAG 4285 and 4539. The modulated signal shall be transmitted in J2B mode, at up to 600 baud on HF components and capable of being directed to any achievable area beyond traditional AOR, when required by NATO. Broadcast Designator will be assigned in future.

b. **Ship Shore (S-S) and Maritime Rear Link (MRL)**

Management of two S-S circuits and one MRL circuit, covering Black Sea, Mediterranean Sea, Middle East and Red Sea. Half and full duplex mode of operation, at (up to) 2400 bps, in accordance with STANAG 4285 and 4539 and protocol in accordance with STANAG 5066 techniques are required.

c. **Voice Management service**

This capability shall support both open and secure narrow band voice communications on simplex and duplex mode. It is assumed that this service will share radios listed above and only two voice channel required at a time and for a short period. In this respect, voice communication service shall share transmitters and receivers with S-S or MRL services.

The MRL receiver shall also be used for continuous watch keeping on voice channel.

d. **Point to Point services**:

This capability shall support asynchronous / synchronous serial communications to 5 (five) locatons on top of other requirements. It shall be possible to expand capacity to 50 locations by adding additional hardware.

4.3. Descriptions and location of sites

4.3.1. Bulgarian BRASS node shall consist of:

a. One (1) Automated Control and Management System (ACMS);

b. One (1) Transmitter (Tx) Site (at Asparuhovo);

c. One (1) Receiver (Rx) Site (at Galata);

4.3.2. Present situation of the sites at Gorna Traka, Galata and Asparuhovo is comprehensively presented in SOW Annex C.

4.3.3. The main parts of each site are given below. The detailed technical and functional explanation of each part is given in Section 5 System Functional Description and Section 6 System Technical Description.

4.4. Automated Control and Management System (ACMS)

4.4.1. The system shall be controlled and managed by Bulgarian Naval Communications Centre. The Centre is located in GORNA TRAKA. The ACMS shall consist of the following elements:

a. Message Processing System (MPS);

b. Communication Interface and Switching Management System (CISS);

c. Remote Supervisory and Control (RSC) System;

d. Voice Management Sub System (VMSS);

e. Precise Timer and Frequency Standard Sub System (PTFS)

f. Power Supply Sub-System

4.5. Transmitter site

4.5.1. The transmitter site will be built up in ASPARUHOVO the distance from the ACMS is approximately 9 km.

4.5.2. The site shall be mainly equipped with:

a. Four (4) 5 kW transmitters for NATO BCST re-key service;

b. Four (4) 5 kW transmitters for National BCST, S-S and MRL services;

4.5.3. Details are specified at SOW Annex-A paragraph 6.11

4.6. Receiver site

4.6.1. The receiver site will be built in GALATA, in the south-eastern part of Bulgaria approximately 5 km from coast line, 8 km from GORNA TRAKA ACMS site and 2,5 km from Asparuhovo tranmistter site.

4.6.2. The site shall be mainly equipped with:

a. One (1) receiver, for NATO BCST re-keying service – Off the Air Monitoring (OTAM);

b. Four (4) receiver, for one (1) National BCST service – Off the Air Monitoring (OTAM), two (2) S-S service and one (1) receiver, for MRL service and watch keeping on voice channel;

4.6.3. Details are specified at SOW Annex-A paragraph 6.12

SECTION 5 SYSTEM FUNCTIONAL DESCRIPTION

5.1. Software functional description

5.1.1. System software functional description is presented explicitly in SOW Annex B. Other requirements and issues related to software are presented below.

5.1.2. The Application software to run on the MPS and RSC shall be based on the BRASS ICC Software MPS/RSC being developed for the BICC. The BRASS ICC Software MPS/RSC will be PFE and will be provided by the Purchaser after Contractor's site survey report is issued to the NCI Agency (once contract is awarded) as well as after Facility Security Clearance (FSC) is submitted to the Purchaser as stated in SOW Annex-D. BICC software shall be modified and adapted by the Contractor for the BRASS BGR and specific site configuration. The PFE delivery of BICC software will include the followings:

a. BICC software source code

b. System Design Document for MPS

c. System Design Document for RSC

d. Database Design Document

e. BICC software Handbook

f. Operator Manuals for MPS and RSC

5.1.3. The software shall be modified (change in the source code), if required, to adapt it to the local condition (e.g. Adding new drivers and related GUI for remote control of the new equipment) and to BRASS BGR system other functional and performance requirements. BICC software can exchange information with other components (STANAG 5066; X.400 and ACP-127) through the serial ports and network connections.

5.1.4. It shall be noted that the current version of BICC software runs with the following COTS software applications (presented at Table 1 in parapraph 5.1.8).

5.1.5. COTS software shall be upgraded according to the current technology.

5.1.6. COTS software applications shall be provided by the Contractor as they will not be provided as PFE.

5.1.7. The delivery of any COTS software shall include licenses, documentation and CD or DVD containing the software and any activation key required.

a. Windows Server

The current version of the BICC software is designed to work on Windows Server 2003. The Contractor shall port the required BICC software modules to Windows Server 2012 or newer. The change of the version of operating system or COTS has to be coordinated with Security Accreditation Authorities.

b. Windows Client

The current version of the BICC software is designed to work on Windows XP SP3 on workstations. The Contractor shall port the required BICC software modules to Windows 10 or newer. The change of the version of operating system or COTS has to be coordinated with Security Accreditation Authorities.

c. Oracle.

The current version of the BICC software is designed to work with Oracle 10g (Database management system). The Contractor shall provide an adaptation of the BICC SW to work with the newest version of the Oracle database or any other comparable database management system with clustering capabilities. This change shall be coordinated with the Security Accreditation Authorities.

d. Acrobat Reader

e. Open Master

f. Open master Agent

g. VNC Client

h. Microsoft Office Professional

The Contractor shall provide the most current version of the Microsoft Office Suite approved from security point of view. There are no interfaces between the Office suit and the BICC software.

i. Winproject

The Contractor shall provide the most current version of the Microsoft Project approved from security point of view.

j. Development environment used for porting of the BICC software

The Contractor shall provide the most current version of the Integrated Development Environment (IDE), Compilers, Version Control System, bug reporting system and other tools required for software maintenance.

k. Open Agent Tool Kit

l. EMS (Nms2K-xEMS Selex)

m. RACALL

n. McAfee Antivirus Client (Latest Version)

o. McAfee Antivirus Server (Latest Version)

p. ARQ Software

q. X.400 Application (XOMAIL or other compatible X.400 solution.

The X.400 capability is not currently part of the BICC software and shall be delivered to the ACMS by the COTS application (X.400 Application).

r. Gateways (X.400 software).

5.1.8. List of COTS that is known to be compatible with BICC SW:

Windows	2003 SP2
	XP SP3
Oracle 10g	Standard Edition 1 release 10.2.0.1
	Enterprise Edition release 10.2.0.1 + Oracle Fail Safe
	Client release 10.2.0.1
Acrobat reader 7.0	
WinProject 2000	
McAfee Agent for Epo 4.5.0.	McAfee Viruscan Enterprise 8.7i(release 8.7.0)
	McAfee Epo(Orchestrator) 4.5.0
ARQ Software	(MDH Stanag 5066 sw 1.10.4 - Selex) *Note 1: At the time of IFB release, the MDH software, does not support the full-duplex MRL mode required for STANAG 5066 compliance.* *Note 2" Full duplex functionality of STANAG 5066 protocol shall be implemented in the ARQ software by the Contractor.*
-Nms2K-xEMS Selex	(only if Selex switches family CD141 is used)
Open Master Evidian SW suite (SLM 6.0)	
MS Visual Studio Enterprise 6.0	

Office XP Professional 2007	
Racall	(only if Selex switches family CD141 is used)

Table 1: List of COTS that is known to be compatible with BICC SW

5.1.9. If any of the COTS applications, listed above, need to be upgraded (if not supported or available at the time of project implementation and warranty), the Contractor shall be responsible for integration, modification and adaptation of the BICC software.

5.1.10. Not every workstation has to be provided with these applications. Microsoft office shall be available on all workstations. For Visual Studio and Winproject, one licence is enough.

5.1.11. The contractor shall provide the necessary number of licences for the applications (DBMS, Antivirus, XOMAIL etc.) and operating systems used in his solution.

5.1.12. The type of Oracle licence depends on many factors like the number of processors on the servers or the role of the host computer in the system or the number of connected clients. For MPS and RSC servers it is the Enterprise Edition because of the support for clustering. Other licensing solution can be available. Oracle licensing policy shall be referred for details.

5.1.13. COTS products may be replaced. Replacing these COTS may add some extra development work to BICC software adaptation and use of some COTS products may not be allowed from the security point of view or may require additional approval process.

5.1.14. Only products from the Approved Fielded Products List (AFPL) are allowed on the NATO Secret networks. AFPL is a collection of products Software, Hardware and Firmware authorized to be used on networks managed by NCI Agency. AFPL products are only mandatory for NCI Agency managed networks but compatibility with this list will be beneficial during the accreditation process of the interconnection to the NATO network.

5.1.15. In case of replacement of COTS products the Contractor shall use the ones reconized by the NATO AFPL.

5.1.16. It shall be noted that the operating system will be applied security policies pursuant to latest NATO Approved Security Policies, including security setting templates. The Contractor shall be responsible for modifying the BICC software to allow operation with the NATO security settings if settings are different from the current one.

5.1.17. The security settings changes in time and are different for different versions of operating system. Current version of BICC software works with the current settings for Windows 2003.

5.1.18. The Contractor shall be responsible for modifying the BICC software to allow operation with the National and NATO security settings if required.

5.1.19. Security settings shall comply with the NATO security settings in accordance with NATO document: “AC/322-D/0048-Rev2; INFOSEC Technical and Implementation Directive for Computer and Local Area Network (LAN) Security” and other relevant NATO documentation stated in the Contract.

5.1.20. Porting the BICC software to the supported version of the operating system is required. The operating system shall be supported during the contract including the warranty period. The version of operating system or COTS shall be coordinated with Security Accreditation Authorities.

5.1.21. The software design environment used to develop BICC software is MS Visual Studio Enterprise 6.0. Most of the code is written in Microsoft Visual Basic 6.0 (Graphical User Interface part) and Microsoft Visual C++ for the drivers part. For the remote control some parts of Open Master API are used on the SNMP agent site.

5.1.22. The BICC software consist of around 35 applications of different purpose and more than 70 drivers and services for different kind of equipment to allow the remote control. Version 1.6 of the BICC SW will be delivered as PFE to the Contractor.

5.1.23. The communication among MPS applications is based on Oracle DB, DCOM and MSMQ and on RSC site on Oracle DB, SMNP protocol and file system.

5.1.24. In order to meet the NATO security policy, the COTS Software to be provided by the Contractor shall be current and supported versions by the Original Vendor and the Contractor shall be responsible for porting of the PFE software and its integration onto these software platforms.

5.1.25. The Contractor shall provide licenses and support for the COTS software at not only implementation phase but also during the warranty period.

5.1.26. The Contractor shall perform all the required preparation, porting, modification, and adaptation of the PFE BICC SW in order to have it run on the new BRASS Bulgaria SW and HW environment and to meet all the functional and performance requirements of the project.

5.1.27. In case of a design change required to provide a functional and performance requirement of the BRASS Bulgaria system specified in this contract, the modification of the BICC SW shall be contractor responsibility.

5.1.28. Any deficiency or bug found in the SW after contractor activities shall be considered as the result of the Contractor's SW modification activities unless the Contractor proves and demonstrates the opposite (i.e. the source of the problem is PFE BICC SW).

5.2. AUTOMATED CONTROL AND MANAGEMENT SYSTEM (ACMS)

5.2.1. General Functional Requirements

a. The ACMS shall receive messages and key-streams to be broadcast from the NATO Messaging System, point-to-point circuits, Communication Centres and other ACMSs. Having processed the messages, it shall broadcast them to the commands and the surface ships at sea.

b. The ACMS shall also receive Shore-to-Ship and MRL messages from ashore, and MRL and Ship-to-Shore messages from the units afloat. The ACMS shall process and route Ship-to-Shore and MRL traffic. ACMSs of different BRASS systems are interconnected via dedicated encrypted circuits or via the NGCS and NDN connectivity. The afloat units are interconnected to the ACMSs via protected HF, and/or SATCOM circuits accessed through NDN and NGCS.

c. The ACMS shall meet the following main functional requirements:

i. the receiving of messages from various incoming sources (Common User Network-CUN, local message handling systems, NATO SATCOM, Local CCIS (or similar), National systems, other NATO networks, in house sources (e.g keyboards, tape readers, scanners...) and ship side sources/circuits), for display, editing, routing, distribution, compilation, screening and vetting by various operators, with varying levels of access and processing authority;

ii. forwarding of messages to BCST, Ship-Shore and MRL circuits for transmission;

iii. routing of messages to shore circuits for distribution to addresses;

iv. assisting of messages drafting and creating free text documents;

v. accepting input traffic in all following formats: ACP 123, ACP126, ACP 127, ACP 128, X.400; STANAG 4406 (for compatibility with the NATO Messaging System). In the current BRASS architecture, only ACP-127 text messages are sent to the subscribers at sea;

vi. translating input messages into ACP 127 format prior to distribution to operators;

vii. recording message traffic in appropriate databases and storing the information necessary for message compilation;

viii. keeping trace of the work carried out to allow statistical analysis;

ix. character by character comparing of the sample message and decrypted message received off the air, in accordance to the OTAM functional requirements;

x. circuits and key-streams management;

xi. system management and control;

xii. message processing with the main function of providing automation support to the operators for transmission, reception, analysis and storage of the messages.

5.2.2. **ACMS Automation Functions**

a. The BGR ACMS shall provide automation for the functions related with the services listed below (Services and related automatic functions are indicated in Book II Part IV Annex-A and B in detail):

i. Message Management and Handling, functions related with the message acceptance, assembly, distribution, display, editing and output: comprising the update of the archives, databases and relevant records;

ii. Radio Link Management, functions related with the message reception and transmission of message traffic over broadcast, S-S, MRL and Point to Point circuit, segmentation and OTAM;

iii. Remote Control of the BRASS Assets, functions related with the system management, monitoring and remote control of radio devices, antennas and communication links;

iv. Voice Management, functions related with the communication in voice (internal and/or over the radio circuits);

v. Support by/to the adjacent BRASS Nodes, to share the BRASS assets amongst adjacent nodes to allow backup in case of major failure or to allow major Succession of Command (SUCOC) or Change of Location of Command (COLOC). This functionality is integrated as part of the existing BICC software. The information (messages, configuration etc.) is stored in the BICC databases. The BICC software supports copying of the messages sent to the transmission queue into the database of the adjacent node. In case of SUCOC or COLOC the adjacent node has the history of the supported broadcast.

b. Each one of those functions have their own requirements, most of them covered in the existing NATO-owned BRASS software, which will be provided by the Purchaser as PFE.

c. The national requirements, which may not be covered by the PFE software, shall be implemented as complementary adaptations and modifications to the core software, and are described in the SOW Annex B. Book II, Part IV, Annex B (Software Functional Description) describe the BICC SW functional requirements of the BICC SW.

5.2.3. **Message Processing System (MPS)**

a. The MPS is a subset of the ACMS capability in BRASS and shall perform the following main functions:

i. Support the operators of the ACMS used in communications centres, to allow management, handling, automatic transmission, reception, analysis and storage of the messages, complying with the Functional Requirements;

ii. Operational planning, by providing tools to aid the planning of broadcast, point to point and multi-point circuits, time slot and radio frequency requirements for maritime operations. Such tools shall include modeling and simulation tools for predicting the coverage of transmitter and receiver sites.

iii. Allow operators to perform the analysis of each Tx/Rx message queue.

iv. Information management, by providing the means to receive, analyse, store and route messages between the OPCON authority and the forces assigned to him.

v. Control and monitoring the Red Switch (red devices process/manage/handle unencrypted classified information) and the Crypto devices;

vi. Perform the Off The Air Monitoring (OTAM) of the broadcast(s).

5.2.4. **Communication Interface and Switching Management System (CISS)**

a. The CISS shall be the "front end" device to the communication media. It shall mainly perform the switching management under control of Remote Supervisory and Control (RSC), that is:

i. Connect the message, data and voice circuits with the transmitting/receiving devices;

ii. Connect ACMS to other users, namely ACP 127, X.400 and Private Branch Exchange (PABX) (or equivalent) users; for data and voice services.

iii. Routing the single messages/key streams as appropriate/necessary.

5.2.5. **Remote Supervisory and Control (RSC)**

a. The RSC shall perform the following main functions/activities (the functionalities are included in the BICC software):

i. Circuits management; which consists in opening/creating and closing the circuits needed to handle the message traffic, by coupling/connecting and disconnecting channels, modems, radio devices and antennas as appropriate/necessary;

ii. Circuit management by means of remote control of CISS Black side and VMSS Black side. National systems can be connected to the black side of the BRASS system via CISS or VMSS as appropriate to the circuit type;

iii. Modem control both from the RSC console and ARQ processors through isolator functionality from the red side.

iv. Displaying the circuit operating conditions/status;

v. Monitoring the systems and equipment operating condition/status. This monitoring function shall include:

- Monitoring the operational status of the device (up, down, warning, out of control)
- Displaying all the alarms provided by the device. These alarms are dependent on the device and are defined in the device MIB.
- When the device implements BITE (Built-In Test Equipment) the driver shall perform this BITE test remotely and display the result at any time.

vi. Remote control and monitoring of the lines, modems, interfaces, radio devices and antennas at the receiving site (Galata) and transmitting site (Asparuhovo);

vii. The RSC shall also provide HF coverage analysis making use of the available COTS software packages.

5.2.6. **Voice Management Subsystem (VMSS)**

a. The VMSS shall be a voice network, unconnected with the MPS Local Area Network for security reasons. The VMSS shall perform the following functions:

i. Support the operators in setting internal and external voice channels for internal and external units;

- Internal voice channels refer to classified or unclassified communications between operator stations within a BRASS node.
- Black external voice channels are required for unclassified unencrypted coded digital voice communications;

ii. Control the voice network efficiency, such as:

- selecting codecs for PtoP users or transcoding algorithms (where required) for voice calls between internal or external ship-shore users,
- managing the utilization of network resources (e.g., bandwidth) through specification and management of class-of-service/quality-of-service traffic markings (e.g., where VoIP services are used within the ACMS or with external users),
- managing voice-call admission, priority, or pre-emption in the network to achieve SOW requirements on voice-service performance.)

iii. The control of the network efficiency is not a function of the BICC software package but only a requirement of the VMSS.

iv. Separate “red” voice communications from “black” ones (red devices process/manage/handle unencrypted classified information; whereas black devices process/manage/handle unclassified or encrypted classified information).

5.2.7. **Precision Time and Frequency Standard Subsystem (PTFS)**

a. The PTFS shall perform the following functions:

i. Acquisition of precise GPS time information;

ii. Generate and distribute Precise Time and Frequency to those devices within the ACMS that require to be synchronized (modems, crypto devices, switching units, etc.) or need a precise frequency for their operation (radio transmitters and receivers).

b. The PTFS reference shall be utilized to update the ACMS computers’ time of the day (i.e.: servers, workstations, ARQ processors, FEPs. etc.) as well as Tx and Rx sites computers’ time of the day (i.e: work stations, FEPs, etc.).

c. GPS time standard shall be installed as part of the PTFS.

d. PTFS shall acquire time from a GPS receiver or equivalent;

e. The Contractor shall provide a solution to synchronize all relevant communication components in ACMS, Tx and Rx sites with PTFS reference without any data losses.

5.2.8. **Power Supply Subsystem (PSS)**

a. The PSS shall supply energy to ACMS devices using TEMPEST approved filters for the red communication devices. The installation shall comply with the requirements of the stipulated SDIPs. The provision of filters will then depend on site specific conditions and a security classification of processed information. The contractor shall take these variables into account.

b. It shall be integrated to the Short Break (SB) PSS provided by HN and No Break (NB) PSS (Uninterrupted Power Supplies) provided by the HN and Contractor.

5.2.9. **Manual Control**

a. Adequate manual control shall also be implemented in order to ensure minimum disruption of service in the event an ACMS malfunction occurs. Each site shall be able to control locally its own devices.

SECTION 6 SYSTEM TECHNICAL DESCRIPTION

6.1. Summary of Technical Concept

A generic BRASS System View can be mapped in the Figure below.

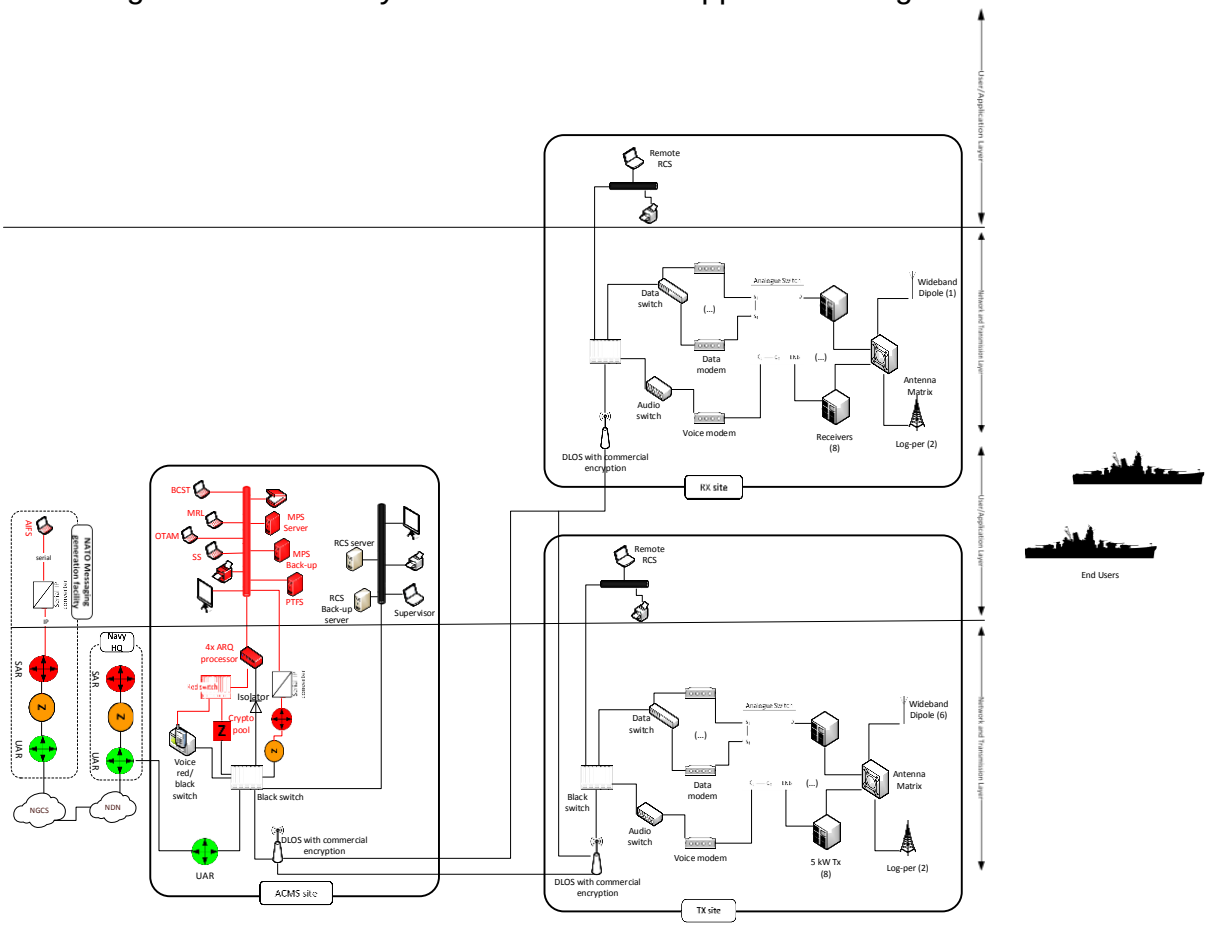

Figure 5: BRASS BGR Overview and System Architecture

6.1.1. A permanent connection between ACMS and its transmitting and receiving sites shall be provided by Direct Line of Sight (DLOS) system implemented by the Contractor.

6.2. System Software General Technical Description

6.2.1. The Application software to run on the MPS and RSC shall be based on BICC SW. Detail of the SW is presented in SOW Annex-B.

6.3. System Hardware General Specification

6.3.1. The hardware (only workstations, monitors, displays and port cables) supplied for this project, shall meet the hardware specifications defined in SOW Annex-A Appendix-3:

6.3.2. The remaining IT hardware supplied for this project shall be “state of the art” complying with NATO and National standards.

6.3.3. For the non-IT equipment the system shall meet the following specifications:

i. TEMPERATURE = -10°C to +45°C (operating);

ii. HUMIDITY = 0 to 95%, non-condensing

iii. EMC/EMI = MIL-STD-461F, or comparable IEC 61000 test procedures (Contractor to demonstrate compliance)

iv. SAFETY = IEC/EN 60950

v. Maximum Altitude (operation) = < 1000 meters

6.4. General ACMS

6.4.1. The ACMS shall consist of the following elements:

a. Message Processing System - MPS;

b. Communication Interface and Switching SubSystem - CISS;

c. Remote Supervisory and Control - RSC;

d. Voice Management SubSystem - VMSS;

e. Precision Time and Frequency Standard subsystem - PTFS;

f. Power Supply Subsystem - PSS.

6.4.2. The ACMS shall mainly consist of servers and operator Work Stations (WS), interconnected by LAN, to carry out message handling and remote control services. The ACMS shall also include digital switches, necessary for flexible allocation of communication channels.

6.4.3. The system architecture shall be in accordance with the client/server model and shall be modular, distributed, expandable and redundant.

6.5. Message Processing System (MPS)

6.5.1. The MPS shall be based on a distributed and modular architecture, where a main computer acts as a server for client workstation (WS) and other terminal equipment, linked by a LAN.

6.5.2. The MPS shall also provide the means to monitor the status of the red network. Note that, the black network will be controlled by the RSC.

6.5.3. The MPS shall consist of the following devices:

a. one (1) MPS Server;

b. one (1) MPS Server Backup;

c. five (5) WS(s); (supervisor selects which workstation screen has to be projected on the large screen display);

d. one (1) MPS dual LAN Fiber optic (to include IP layer routers and switches);

e. peripheral devices:

i. one (1) large screen display

ii. one (1) scanner with OCR;

iii. one (1) MPS storage Unit (disk array)

iv. two (2) Network printer (laser);

v. one (1) MPS paper tape puncher/reader (for off line encryption/decryption);

f. 3 UPSs in Rack;

g. 3 Racks std 19”

h. Tempest protection (MPS and CISS Red Hardware)

6.5.4. The MPS shall allow interoperability between multivendor devices using standard communication protocols at each level of the OSI (Open System Interconnection) model and shall be architectured to the OSE (Open System Environment) model.

6.5.5. MPS shall perform many interactive processes and many hardware/software accesses at the same time, thus requiring a multi-user/multi-tasking operating system.

6.5.6. MPS Performances and Sizing: For an accurate sizing of the system components, the following factors and expected minimum performances shall be considered:

a. peak day traffic load: 5.000 messages per day;

b. average length of messages: 5.000 characters;

c. approximately 60 transactions per operator per hour;

d. on-line storage of the traffic of the previous 31 days;

e. off-line storage of the traffic of the previous 3 years;

f. a site depending number of circuits (radio, telegraph, data) to be managed;

g. a site depending number and type of workstations and peripheral to be controlled;

h. messages handling time constraints as detailed in the Software Functional Requirements;

i. messages search time constraints as detailed in the Software Functional Requirements;

j. a site depending number of CUNs to interface.

6.5.7. MPS Processing Load: Time constraints shall be achieved independently from the processing load that is generated by:

a. messages handling;

b. communication activity;

c. databases update;

d. interactive activities performed by System Operators;

e. background applications (e.g. Red Switch, LAN, peripherals and Crypto control).

6.5.8. **MPS Server Cluster (Master and Slave Servers):**

a. Hardware solution for servers shall be COTS based.

b. Shall be able to handle at least 50 communication lines to the Red Switch; (This requirement applies to both the ACMS software and the red switch.)

c. The serial communication lines between MPS and CISS shall be identical to increase the flexibility of the system and shall handle rates among 75, 150, 300, 600, 1200, 4800, 9600, 19200,32000, 64000 bps.

d. The interfaces between MPS and CISS shall comply with ITU V-series standards. Note that The BRASS ICC software supports this requirement. There are no BRASS HF circuit requirements with data interfaces operating at higher than 64000 bps. This does not preclude requirements to aggregate traffic and control circuits for transmission over a high-speed interface operating between sites (e.g., the inter-site 2 Mbps digital links over the black-national defence network that provides inter-site communications.) Nor does it preclude the contractor from the use of such high-speed interfaces intra-site. The Contractor shall use max available speed between sites (links provided by HN) and shall not limit circuits speed to 64000 bps as well.)

e. MPS Servers shall link the communication lines to operators‟ WS(s) through the LAN;

f. MPS Servers shall manage communication lines to CUN;

g. MPS Servers shall prevent data loss (WS(s) failures, power supply black out etc.);

h. MPS Servers shall control UPS monitoring;

i. MPS Servers shall provide warnings to operators and regular system shutdown after 10 minutes of UPS activation (without losing data);

j. MPS Servers shall interface with adjacent Control Station (CS) for backup operations and SUCOC/COLOC functions.

k. MPS Servers shall be equipped with:

   i. Internal hard disk to store the non-shared data (Non-shared data shall be mirrored on the Backup system);

   ii. CD/DVD-ROM/Writer: to install software (This device shall be removable and/or provided with key-lock);

   iii. A state-of-the-art system console with monitor, mouse, keyboard, and keyboard/ video/ mouse (KVM) switch. The console shall provide a minimum resolution of 1920 x 1200 pixels, 32-bit color. The system console shall have enough keyboard/ video/ mouse (KVM) inputs to manage all the MPS devices from a single console;

   iv. I/O interfaces. (The server shall have at least the following interfaces:

      - Minimum 2 1000Mbps Ethernet port.(1 for cluster interconnect)
      - Minimum 2 1000 Mbps ports.(at least 1 may be used to connect to external Storage system (DAS or NAS or IP SAN)
      - Minimum 2 Serial ports (RS-232).
      - Minimum 3 USB 3.0 ports
      - 50 communications lines to CISS

   v. CPU (MPS server shall use high-power latest-generation processors in a multi-processor – shared memory configuration);

   vi. Disk array: the disk array is used as common storage memory available for all the clients. Please see SOW Annex-A paragraph 6.5.10 for more details.

vii. Back-up system. Message handling and communication management shall be considered “mission critical applications”. The hot-standby Backup system shall be automatically activated (i.e.: without any operators intervention and without interrupting operations of the server) in less than one minute. In case of MPS-server failure, an external hard disk shall be easily connected to the backup system to perform, in its turn, the back-up mirroring/storing functions. The failed server shall be replaced later on, without interrupting operations. The MPS Server shall therefore be supported by a Backup System implementing a cluster architecture with the following characteristics:

- use of mirroring techniques;
- continued performance of database functions in case of Server failure;
- applications-recovery time less than 60 sec;
- no data loss in case of Server failure and hot stand-by activation;
- reciprocal control with dedicated (i.e. not using the primary LAN) and duplicated lines.

l. MPS Servers shall require neither special powering nor special air conditioning. It shall be used in an office environment. Input power shall be single-phase, 110-to-240 VAC, 50/60 Hz. Internal AC to DC power supply shall be redundant with automatic activation and signalling in case of failure.

m. It shall be possible to increase performances of the server without increasing its physical size, specifically RAM, internal disk storage.

6.5.9. **Workstations (WS):**

a. Hardware solution for WSs shall be COTS based.

b. WS(s) shall consist of:

i. standard personal computers to offer local processing capabilities to carry on man-machine interface procedures without any need of main systems processing power, according to client-server software architecture, and

ii. voice-communications sets to carry on internal operator-to-operator communication and external voice telephony.

c. To increase flexibility, WS(s) shall be identical, irrespective of the assigned task, and shall not be operator specific (i.e.: Any operator shall be able to use any workstation). As an indication, the WS(s) might be used as follows:

   i. Watch Supervisor;

   ii. BCST and OTAM Operators;

   iii. S-S Operators;

   iv. MRL Operators;

   v. Point to Point (PtoP) Operators.

d. The operator WS shall be general PCs with minimum amount of extra hardware required. The connectivity between servers and WS shall be IP based.

6.5.10. **MPS LAN:**

a. The MPS LAN shall be based on Ethernet standard allowing expanding capabilities and shall operate at NS system high mode of operation. The main switch shall be connected with the MPS server. Hardware devices used in the LAN shall be managed by the System Administrator using SNMP protocol. Note that BICC software currently works with SNMP v1, but SNMPv3 shall be required to get security accreditation. In this case the responsibility to modify the BICC software is on the Contractor.

b. The Contractor shall clearly state how MPS secret LAN will be implemented.

c. The Contractor shall clearly indicate how he plans to interconnect all the sites through the NDN and how the connection between a BRASS site and the NDN is done. The Contractor shall also clarify the interfaces between NDN and BRASS equipment

6.5.11. **MPS Connections and Interface Definitions:**

a. The MPS shall interface with the RSC, CISS, VMSS and Gateways X.400/ACP127.

b. The purpose of these connections is as follows:

   i. RSC: The MPS shall provide the data and status of services, namely FAB pro-sign, red equipment status and control, time, RF modem settings, to allow the configuration of equipment in Tx/Rx sites.

ii. CISS: The MPS shall provide to the Red Switch, through the ARQ processors, the control data that allows the implementation of the automatic repeat request functionalities as previously mentioned. This functionality may be disabled whenever appropriate. Additionally, it shall provide the connectivity for service establishment (sending and receiving messages), through the Red Switch.

iii. VMSS: The MPS shall provide the control data to the red voice switch.

c. In order to provide the suitable level of resilience, there shall be a secure network connection between the MPS LAN of the ACMS at adjacent BRASS Nodes. The required IP crypto and network devices shall be provided by the HN as an extension of NGCS tunnelled through National Defence Network (NDN) and integrated by the Contractor within the scope of this SOW and comply to NATO standards. The contractor's responsibility is up to the red interface of the IP Crypto equipment and to make sure that the system delivered operates with the existing IP Crypto.

d. The BICC NATO-owned software part concerning the Message Handling may be modified but the final solution shall have at least the same functionality (not worse) than the BICC software.

e. Currently the X.400/ACP127 gateway task is realised by the XOMAIL software in other BRASS systems. This gateway task shall be realised by a X.400 application (XOMAIL or similar) Interface Control Documents are not available. X.400/ACP127 gateways are not part of BICC software. The Gateway (X.400 software) is not PFE.

f. The X400/ACP127 gateway shall be bi-directional. Its role is to convert incoming X400 messages into the ACP 127 format. But in the BRASS requirements the MPS shall also be able to route any output through networks employing X.400 protocols through a gateway.

6.5.12. **Large Screen Display**

Large Screen Display shall have following functionalities:

a. The state-of-art screen technology.

b. Screen size: The screen shall be easily seen from each operator workstation.

c. Full HD or higher relation.

d. It shall be designed for 24/7 operation.

e. Possibility to connect many sources of the video information.

f. Easy switching of input signal

6.5.13. **Storage Unit** (Disk Array)

a. The Storoge Unit is used as common storage memory available for all the clients. The main function of the storage unit is to store the data in a redundant and reliable manner, with a high degree of availability.

b. To fulfil this, the storage unit shall have the hardware characteristics that are described in the Bi-SC Minimum Hardware Procurement Specifications (Draft Version 5.6, dated 31 July 2012).

c. The disk array shall be external and sized to store “on line” at least 60 days of messaging history, log infromation and working activity of the Control Station (CS) and at most one adjacent CS.

d. In case of failure of one disk, the disk array shall automatically activate the backup, show the failed disk position in order to save time to repair, point out the final full working status.

e. The data restoring on the new disk shall be performed “run time” using the other disks and the parity control. It shall be possible to perform hot swaps of hard drives without causing a system interruption.

f. The MPS Server shall interface with a DVD-R Writer. The writer will periodically perform the transfer of the “on-line archive” to DVD-R discs, representing the “off-line storage/archive.

g. The MPS Server shall perform the “off-line storing” automatically, pointing out the DVD-R disk status and the warnings to operators (warn operators to replace full DVD-R with empty ones, assign and record labels to the DVD-R to allow their identification and message retrieval, warn failures, etc);

6.5.14. **Tempest Protection (MPS and CISS Red Hardware)**

a. The Contractor is responsible for provision, installation and connection of the BRASS dedicated EPDPs to MPDP including TEMPEST requirements for all BRASS system in premises at the ACMS, Tx and Rx sites.

b. MPS servers and red equipment such as MPS FEPs and ARQ processors shall be installed in TEMPEST cabinets. In order to configure, manage and maintain those equipment enough quantity rack KVM switches and relative rack consoles (one for each red cabinet) shall be provided.

c. The design and installation of any TEMPEST driven equipment and devices (i.e. Power Line Filters) shall be implemented by the Contractor

d. MPS workstations, part of the red equipment, shall meet relevant TEMPEST Level requirements. The compliance to the relevant Tempest level is required for computer tower, monitor, keyboard and mouse. Furthermore, workstations shall be provided with media converters allowing fiber optic connection to the MPS LAN switch installed in the TEMPEST cabinet.

e. Other peripheral devices such as MPS scanner, MPS Large Screen Display, MPS Tape Puncher Readers shall be complaint with relevant TEMPEST requirements.

f. MPS LAN shall be physically separated from the black LAN according to system safety requirements and TEMPESt directives.

a. All 19'' rack mounted RED equipment (including RED switch, MPS servers, Front End Processors (FEPs)) handling classified information not yet encrypted, are installed in 19'' relevant TEMPEST certified cabinets.

b. Each equipment belonging to MPS (e.g. MPS workstation) and handling classified information are certificated as per SDIP-27 or installed in a shielded enclosure as per SDIP-27.

6.6. Communication Interface and Switching Management System (CISS)

6.6.1. The CISS shall consist of the following subsystems and components:

c. Switching Subsystem:

i. Red digital switch;

ii. Crypto Pool;

iii. Black digital switch

iv. Audio switches

d. Communication Subsystem:

i. ARQ processors

ii. ARQ isolators;

iii. Radio Frequency Modems

iv. Voice RF modems

6.6.2. The CISS is a subset of the BRASS ACMS capability and shall be collocated with the MPS. It shall route messages between the MPS LAN and the transmitting and receiving sites. The system shall comply with the specific CISS functions already included in the NATO owned BICC core software. Additionally it shall grant resilient connectivity capabilities (e.g. connectivity through commercial leased lines, between other ACMSs). The BRASS capability to “grant resilient connectivity capabilities” refers to system capabilities in the BICC software to route broadcast and ship/shore streams around failed ACMS, Tx and Rx subsystems through the use of redundant connectivity between sites provided (historically) through leased lines or other telecommunications service provider.

6.6.3. It shall be based on switches and routers.

6.6.4. The CISS shall consist of three components: one switching component installed in ACMS and two communications component, installed in Tx and Rx Sites, that shall be connected through the National Defence Network (NDN). Each one of those shall have components that shall be under control of either MPS or RSC as described in the following sections.

6.6.5. The CISS shall be the “front end” device to the communication media.

6.6.6. It shall be based on switching units, and modems. The requirement for use of ‘modems’ within the CISS refers to its requirement to route and transmit digital data streams over the connections between sites. The modems required for the CISS are the RF modems. The CISS has segments, i.e., the Tx and Rx sites, that include the RF modems; but, this does not preclude the Contractor from including additional modems required by his design, e.g., for interface to the connections between sites.

6.6.7. The IP Interfaces shall connect the CISS component of ACMS, Tx and Rx Sites through a connection nationally provided.

6.6.8. **Red Switch:**

a. The Red Switch shall handle classified information not yet encrypted, therefore it shall be considered as a red device.

b. Basically, the CISS red switch will route traffic between the MPS LAN, the cryptographic pool and the ARQ processors, in accordance with traffic connectivity and coverage requirements. The red switch, cryptographic devices and the ARQ processors shall be monitored and controlled by the MPS.

c. Additionally the red CISS switch shall route traffic between the MPS LAN and external nodes through red interface.

d. It shall be flexible to allow both single and multi-channel streams, and capable to deal with data and voice communications, providing the quality of service envisaged.

e. Red switch shall be able to handle at least 50 communication lines (This requirement applies to both the ACMS software and the red switch.). Consequently, the contractor shall do well to develop required number of input and output circuits for the Red Switch as well as their type and characteristics using SOW information and requirements provided but not limited to the Book II Part IV Annex A, from which the CISS Red Switch is required to connect and have bidirectional interfaces to:

   i. MPS Server (through LAN);

   ii. Crypto pool -including voice crypto at least the minimum number of serial-digital interfaces, required to satisfy the total Broadcast, Ship-Shore and MRL channels;

   iii. The pool of ARQ processors-STANAG 5066 at least the minimum number of serial-digital interfaces to satisfy the requirements for Ship-Shore and MRL circuits;

   iv. Other PtoP users Red Switch shall provide the capability for connections to PtoP users for classified information exchange.

   v. VMSS red part voice segment.

   vi. A number of other subsystems or devices for which the interface is unspecified and subject to the Contractor’s own implementation choices to meet the SOW requirements.

f. The Red Switch shall:

   i. be flexible to allow both single user connection and multi-channel streams;

   ii. use digital technology for transport and switching;

   iii. be capable to deal with data and voice communications performing in each case the quality of service envisaged.

   iv. Not require any special supply and/or special air conditioning; it shall be suitable to work in office environment.

g. Where circuits map many-to-one or one-to-many onto physical interfaces, the Contractor shall provide evidence of the number of circuits mapped onto each physical interface, evidence that the interface has the capacity to carry the supported number of circuits simultaneously, and a description of the embedded transcoding capability (with associated standards) they have employed.

h. Contractor shall freely choose to embed protocol transcoding or interface-conversion within the Red Switch subsystem (e.g., in the manner of a serial-over-IP terminal concentrator for local-area-networks).

6.6.9. **Red Switch Internal Architecture:**

a. The Red Switch shall be based on a multi-processor architecture suitable for handling all the interfaces and the switching functions.

b. The Red Switch shall also be provided with a test equipment to perform on-line and off-line testing, allowing internal failed modules substitution without interrupting operations.

c. In accordance with the number of communications lines to be implemented, the red switch shall be splitted into 2 or 3 independent sub switches, in order to assure partial operating conditions in case of Switch failure/maintenance and shall allow manual backup connections between IN and OUT ports in case of disruption.

d. The Red Switch shall be modular in order to allow that the grouping of a different number of the same elements fulfils the requirements of the different sites.

e. In case of power failure the switch shall maintain the last established configuration. The MPS Supervisor shall be provided with the possibility to program a prioritisation of the communication services carried out; in case of partial failure of the switch the MPS Supervisor shall be provided with the possibility to set an “automatic reconfiguration mode” that, based on the prioritisation previously programmed, forces the switch to interrupt low priority services to the advantage of the higher priority ones.

f. Red switch shall be stackable in order to increase switching capability by simply adding modules.

6.6.10. **Red Switch Connectivity:**

a. Connectivity between Red Switch and MPS Server: Connections to MPS Server shall be implemented as outlined in paragraph 6.5.8.k.iv; “MPS Server I/O Interfaces”. In addition, separate connecting lines from MPS to the red switch shall be provided for control data.

b. Connectivity between Red Switch and Crypto Pool: Classified lines between the Red and the Black Switches shall be linked by a pool of crypto devices. It is responsibility of the contractor to interface them to the switches.

c. Connectivity between red Switch and ARQ processor: Red Switch shall interface ARQ processors complying with STANAG 5066 ARQ techniques.

6.6.11. **Black Switch:**

a. Basically, the Black Switch shall switch, under the RSC control, the key-streams from the crypto pool to the radio circuits (and vice versa). It shall also route the traffic to and from adjacent BRASS nodes.

b. It shall be flexible to allow both single and multi-channel streams, and capable to deal with data and voice communications, providing in each case the quality of service required.

c. The exact number and nature of physical interfaces to the switch will depend on the Contractor’s own design. Consequently, the Contractor would do well to develop and present in his design the required number of input and output circuits for the Black Switch as well as their type and characteristics using SOW information and requirements provided but not limited to the Book II Part IV Annex A, from which the CISS Black Switch is required to connect and have bidirectional interfaces to:

i. Crypto pool -including voice crypto at least the minimum number of serial-digital interfaces, required by design and interfaces of the PFE cryptos);

ii. RSC server (unspecified interface and open to the Contractors’ implementation choices);

iii. VMSS black voice segment.

iv. Other point to point users (unspecified interface) accessed variously such as via the PABX, NDN or NGCS.

d. Black Switch shall have provisions to interface:

i. Local PABX (Since the Black Switch's interface to the NDN is through the Local PABX, the Contractor's design shall provide the interface on the Black switch compatible with the Local PABX);

ii. NATO General Communication Services (NGCS). The physical interface towards the NGCS will be a RJ45 connector.

e. The Black Switch shall:

i. be flexible to allow both single user connection and multi-channel streams;

ii. use digital technology for transport and switching;

iii. be capable to deal with voice, data and video communications performing in each case the quality envisaged.

iv. be controlled and monitored by the RSC.

v. interface both with digital users and analogue users.

vi. not require any special supply and/or special air conditioning; it shall be suitable to work in an office environment.

f. Where circuits map many-to-one onto physical interfaces, the Contractor shall provide evidence of the number of circuits mapped onto each physical interface, evidence that the interface has the capacity to carry the supported number of circuits simultaneously, and a description of the embedded transcoding capability (with associated standards) they have employed.

g. The Contractor shall freely choose to embed protocol transcoding or interface-conversion within the Black Switch subsystem (e.g., in the manner of a serial-over-IP terminal concentrator for local-area-networks).

6.6.12. **Black Switch Internal Architecture:**

a. The Black Switch shall be based on a multi-processor architecture suitable for handling all the interfaces and the switching functions

b. The Black Switch shall also be provided with a test equipment to perform on-line and off-line testing, allowing internal failed modules substitution without interrupting operations

c. In accordance with the number of communications lines to be implemented, the black switch shall be split into 2 or 3 independent sub switches, in order to assure partial operating conditions in case of Switch failure/maintenance shall allow manual backup connections between in and out ports in case of disruption.

d. Black Switch shall be modular in order to allow that the grouping of a different number of the same elements fulfils the requirements of the different sites.

e. In case of power failure the switch shall maintain the last established configuration. The RSC Supervisor shall be provided with the possibility to program a prioritisation of the communication services carried out; in case of partial failure of the switch the RSC Supervisor shall be provided with the possibility to set an “automatic reconfiguration mode” that, based on the prioritisation previously programmed, forces the switch to interrupt low priority services to the advantage of the higher priority ones.

f. The contractor is required to provide the Black Switch with manual back up connections between IN and OUT ports in case of disruption.

6.6.13. **Black Switch Connectivity:**

a. Connectivity between Black Switch and Crypto Pool: The Black Switch shall interface with the black side of the crypto devices to/from which it shall transmit/receive encrypted data to switch in accordance with RSC controls.

b. Connectivity between Black Switch and Local PABX: It is required to connect the Black Switch to the local PABX in order to directly access commercial/military - digital/analogue lines.

c. Connectivity between Black Switch and RF modems: The Black Switch shall provide key-streams directly to the RF modems. For this reason, the Black Switch shall be provided with the necessary interfaces.

d. Connectivity between Black Switch and RSC: Black switch shall be controlled by RSC via the local RSC LAN, thus shall be provided with a LAN interface.

6.6.14. **Crypto Pool:**

a. The Red and the Black switches shall be linked to each other by a pool of crypto devices.

b. The Crypto pool shall comprise the following devices (procured by Purchaser):

i. three (3) Broadcast crypto devices (KIV-7 or another equivalent if authorized at the date of crypto delivery) for BCST transmission (long haul and X11 widening); 1 time (1 NATO BCST +1 National BCST) + 1 spare;

ii. three (3) Broadcast crypto devices (KIV-7or another equivalent if authorized at the date of crypto delivery) for BCST monitoring/receiving (OTAM); 1 time (1 NATO BCST + 1 National BCST) + 1 spare;

iii. three (3) TADPOLE Crypto Equipment for 2 SS+1 MRL (+ 1 PtoP when required in pool concept);

iv. three (3) voice Cryptographic Equipment for secure voice;

v. two (2) NATO IP cryptographic equipment and IP-to-serial converters for connectivity to NGCS.

vi. Crypto racks

c. Crypto shall be installed in one or more racks, implementing the 'pool'.

d. The control of crypto shall be performed by MPS server.

e. The crypto devices to the red and black switches all use serial asynchronous/synchronous interfaces.

f. Crypto devices are managed locally.

g. The Interface configuration of the Red and Black switches (including voice switches if any) to the devices in the Crypto pool (including Voice Cryptos) shall be done in an automated fashion (i.e. via BICC SW MMI capability and via backed up configuration files.)

h. Crypto equipment, which will be integrated for connectivity to NGCS in the ACMS, shall consist of the NATO IP cryptographic equipment and IP-to-serial converters.

i. NATO IP cryptographic equipment shall be implemented to protect the interconnection of BRASS BGR to NS WAN over NATO General Purpose Segment Communication System (NGCS).

j. It is the Contractor's responsibility to test the integration of the Contractor's provided equipment with relevant equipment, elements and systems provided as PFE (including crypto equipment) and demonstrate that both the Contractor's provided equipment and PFE (including crypto) are compatible and function correctly as stipulated in this SOW and its Annexes.

k. The Contractor shall provide rack space for cryptos and all interconnecting cables.

6.6.15. **ARQ Processors:**

a. The ARQ functionality shall be implemented through ARQ processors according with STANAG 5066 Edition 3 promulgated 30 March 2015. ARQ Processors are controlled by MPS Server and directly connected to the red switch.

b. In the BICC implementation the ARQ processor communicates with the Red side through serial connections. The RED side is connected to Black side via a serial connection with an isolator functionality (details were given in respective paragraphs). Only on the black side, there is a software component managing modems via SNMP protocol based on requests from ARQ processor sent through the mentioned serial link.

c. The ARQ Processors implement the STANAG 5066 transmission mode. In this mode, the link quality is monitored and the channel speed is adjusted (I.e. incremented in case of good channel, decreased in case of bad quality channel). The ARQ Technique is also based on the segmentation of the message in packets that are transmitted only when the previous packet has been acknowledged (I.e. received without errors) by the receiver. The ARQ processors are connected through a LAN to the MPS Server Cluster to receive the message to be transmitted, and they have two output lines: one is a data line that goes to the Red Switch, the other one is a control line that goes to the RSC through isolator functionality. It’s in fact necessary to implement controls on the whole Chain of the equipment involved in the channel transmission and reception.

d. In accordance with the Profile for Maritime HF Data Communication, stated in STANAG 5066, the “Link Layer” (OSI 2) shall provide the 3 sublayers (Subnetwork Interface, Channel Access, Data Transfer) necessary to implement a reliable ARQ data link service. The lowest of the 3 sublayers (the Data Transfer) shall interface with the COMSEC sublayer (OSI 1) and therefore ARQ processor shall be implemented before crypto devices on transmission lines and after crypto devices in receiving lines.

e. **ARQ Isolator Functionality:** The Data Transfer sublayer defined in the STANAG 5066 (Ed.3) profile, supports automatically changing of the user data rate (that is, code rate) of the HF modem in response to changing channel conditions (adaptive data rate). This capability requires remote control of the HF modem through RSC. Therefore, as RSC is a black device and ARQ processors are red devices, the two shall be separated by a means providing isolator functionality. Isolator functionality shall meet security requirements outlined in the BRASS SSRS document and shall be approved by NATO or National Security Authorities to use between NS and NU systems to exchange information between the red and the black sides (in both directions). ARQ isolators shall possess Semantic Filtering, Rate Filtering and Reliability capabilities as stated in the BRASS SSRS paragraph 3.2.2. Implementation of isolator functionality shall cover also those related to semantic and rate filtering of the commands exchanged between the ARQ processors and the modems and radios under control of the RSC.

6.7 Remote Supervisory and Control (RSC):

6.7.1 The RSC shall have its components spreaded through the ACMS and Tx/Rx Sites. Thus, the RSC node shall consist of three connected networks, ACMS, Tx and Rx Sites with the same architecture.

6.7.2 The RSC shall perform the remote control of the BRASS assets and provide HF coverage analysis. The existing BICC RSC software does not include the HF coverage analysis. However there are available tools to perform this task

6.7.3 The contractor has some flexibility implementing the solution for the remote control of modems. Just to enlighten the Contractor, in BICC implementation, ARQ processor communicates with Red side through serial connections. The RED side (red FEP) is connected to Black side (Black FEP) via a serial connection with an isolator functionality. Only on the black FEP, there is a software component managing modems via SNMP protocol based on requests from ARQ processor sent through the mentioned serial link.

6.7.4 The Contractor is free to propose the technical solution for the ARQ isolator. which may use LAN or serial interfaces.The proposed solution shall provide filters, or other protecting mechanisms to allow multiple connections for ARQ control from red side to black side in accordance with Section 6.6.15.e

6.7.5 The RSC shall consist of the following devices:

a. one (1) RSC Server;

b. one (1) RSC backup Server;

c. one (1) RSC LAN (including switches, routers - Local and Remote);

d. two (2) RSC WS

e. one (1) Isolator (MPS-RSC)

f. three (3) UPS in Racks

g. peripheral devices:

i. one (1) network printers;

ii. one (1) large screen display

6.7.6 Circuit characteristics, devices status and power constraints, shall be represented on a Large Screen Display to inform MPS operators.

6.7.7 **RSC Server Cluster:**

a. RSC Servers shall:

i. Supervise and control local and remote devices;

ii. Control and manage the Black Switch;

iii. Manage the communication lines to operators‟ WS(s) through the LAN;

iv. Manage communication lines to additional users linked to the Black Switch;

v. Prevent data loss, WS(s) failures, power supply black out etc.;

vi. Be “mirrored” by the other server

vii. be equipped with:

- Internal hard disk;
- DVD/CD-ROM;
- System console (monitor and keyboard);
- I/O interfaces.

6.7.8 **RSC Workstations:**

a. The RSC WSs shall be identical to the MPS ones.

6.7.9 **RSC LAN:**

a. The RSC LAN shall be based on Ethernet standard.

b. The Contractor shall demonstrate how MPS and RSC LANs comply with the system high standard for his configuration. The Contractor shall clear how these two secret LANs will be implemented.

c. The Contractor shall clearly indicate how he plans to interconnect all the sites through the NDN and how the connection between a BRASS site and the NDN is done. The Contractor shall also clarify the interfaces between NDN and BRASS equipment.

6.7.10 **RSC Connections**

a. Within the ACMS, the RSC shall execute the remote supervisory and control functions over connections provided through the Black Switch and the Black Voice Switch, with the execution of remote supervisory and control functions over the equipment installed at Tx/Rx sites accomplished through an IP Interface; the red-side ARQ Processors shall execute their controls over modem/radio subsystems at the Tx/Rx sites acting through secure isolators connecting the ARQ processors to the RSC.

b. The contractor shall make sure that the secure isolator solution shall be accredited as part of the full accredited BRASS BGR system. (Security reference for the accreditation process is referred in Book II – Part IV –SOW, Section 5.2). There is not a predefined format of allowable messages that can pass through the isolator, but there will be a limited set of messages as defined by the Contractor's own design (e.g. – only specific SNMP commands and responses). The Contractor shall implement secure isolators according to the requirements stated in BICC SSRS. The Contractor shall consider an isolator based on XML-guards or other proven guard technology. The contractor shall address in detail how relevant isolator hardware and its firewall/guard capabilities (e.g. its software programming and rules sets) will be used to implement the ARQ-RSC isolator function, or to do so in a way that can achieve the security accreditation and/or certification required by the SOW.

c. The connection between MPS and RSC is for modem data rate control (ARQ) and for Frequency Availability Broadcast (FAB – ship shore). The data exchanged between MPS RED and RSC BLACK is the ASCII characters (ASCII commands for the HF modems or FAB text).

d. The ACMS RSC components shall have connections to its own MPS, CISS and VMSS (via isolator and crypto pool as appropriate) and with the RSCs of other adjacent ACMS components. The purpose of these connections is as follows:

i. MPS: The RSC shall receive from MPS the data and status of services, namely FAB pro-sign, red equipment status and control and RF modem settings, to allow the configuration of equipment in Tx/Rx sites. Additionally, it receives the ARQ signals from the ARQ processors to implement the ARQ functionalities.

ii. CISS: it shall provide the control data for crypto pool and Black switch. The RSC provides any control data for BLACK-side control of crypto-pool devices while the MPS cluster provides any controls for RED-side control of crypto-pool devices. Separation of these two 'coloured' types of controls in accordance with SOW TEMPEST Requirements shall be provided in the Contractor's design.

iii. VMSS: it shall provide the control data for crypto voice pool and Black Voice Switch.

iv. The local RSC system in the TX site shall control only the equipment belonging to the TX site. The local RSC system in the RX site shall control only the equipment belonging to the RX site.

6.8 Voice Management Sub-System (VMSS)

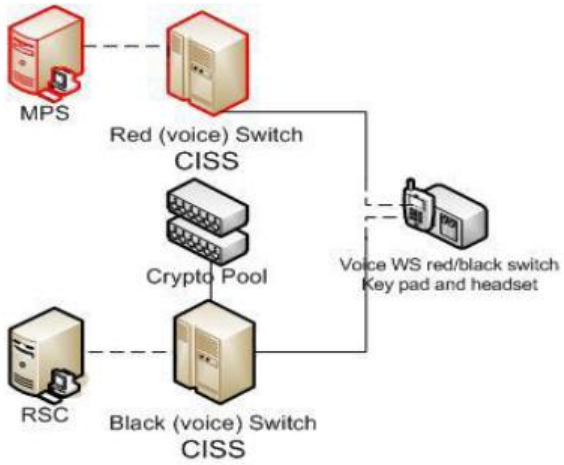

Figure 6: Voice Management Sub-System (VMSS)

6.8.1 It shall be based on voice networks, switches, man-machine interfaces and coders.

6.8.2 The VMSS shall be based on a voice network, not connected with the MPS LAN (for security purposes).

6.8.3 The VMSS shall consist of the following components:

a. one (1) Black Voice Switch;

b. one (1) Black Voice Network;

c. one (1) Red Voice Switch;

d. one (1) Red Voice Network;

e. four (4) Human Machine voice interfaces, one per operator, each one consisting of: headset, vocoder, mechanical switch, alphanumeric keypad, display.

f. two (2) Recorders

6.8.4 Internal Voice channels are established through the local PABX (PFE) among the operators equipped with the four (4) Human Machine interfaces (part of the VMSS) and other possible operators connected to the local PABX.

6.8.5 External voice channels are established through the local PABX (PFE) among the operators equipped with the four (4) Human Machine interfaces (part of the VMSS) via HF and satellite as well as voice channels between operators at different BRASS nodes and other sites accessible via the national communications network.

6.8.6 “Red” communications shall be mechanically separated from “black” ones.

6.8.7 **Black Voice Network:**

a. Operators performing communications “in clear‟ shall be directly connected to the Black Voice Switch, which is envisaged to be part of the Black Switch of CISS, using a Black Voice Network under RSC control.

b. This shall create a local phone network inside the communication centre which shall allow controlled access from local PABX to Tx/Rx media under RSC control. The Black Voice Switch shall also provide connections to the Black Switch (CISS) in order to access external users via other means, namely HF and Satellite through a PABX. For this reason the Black Voice Switch shall be remotely controlled by the RSC. The main idea is to have voice communication from ship to PABX external users and back. It is the responsibility of the Contractor to analyze and provide solutions to entire satisfaction of the purchaser.

c. It is envisaged by this technical solution that Black Voice Switch is an integral part of the Black Switch.

d. However, digital voice is not implemented yet in every ship or aircraft (Black Voice in some cases is transmitted digitally to a ship or aircraft). For this reason Digital to Analogue converters shall be required to provide suitable analogue connections in order to allow MPS operators to talk with remote analogue operators.

e. Note that, digital voice in the paragraph above can refer specifically to users equipped with STANAG 4591 or STANAG 4197/4198 codecs, without encryption as part of a Black (i.e., unsecured) ship/shore voice service. However, it also refers to other digital voice codecs proposed by the Contractor for use within the ACMS and Tx/Rx sites to meet other SOW requirements for voice services. In the context of this paragraph, remote analogue users are aboard maritime platforms (or other deployed platform accessing the BRASS node) anywhere in the NATO Area or Responsibility.

6.8.8 **Red Voice Network:**

a. Operators performing “secure voice" communications with external users shall be directly connected to the Red Voice Switch, which is envisaged to be part of the Red Switch of CISS, using the Red Voice Network, which shall be physically separated from any unsecured voice channel.

b. The Red Voice Switch shall be connected through a pool of voice crypto devices. Crypto devices, part of the crypto pool, shall provide encoding and link the Red Voice Switch to the Black Switch.

c. The Red Voice Switch shall be controlled by the MPS Server.

6.8.9 **Human Machine Interface (Voice Terminals):**

a. The Human Machine Interface (HMI), composed of microphones and headsets, shall allow the collection, transformation and delivery of the information (voice) from/to the operator as well as display and alphanumeric keypad.

b. Headsets shall be provided for each workstation allowing operators to talk both with local or remote users.

c. Operators will work in a classified area, thus microphones shall have background noise suppression, high directivity and shielding protections.

d. It is also required to operators to perform multi point conferences, thus requiring to listen to 2 different communications on the 2 receivers of headset or, if not required to switch to single communication on both receivers. Both communications shall be either encrypted or plain. The mechanical switch shall prevent mixing the two.

e. Headset shall be easily connected and disconnected from a connecting panel.

f. The headset shall be provided with headband and ear cushions, both removable and washable and shall meet at least the following minimum requirements:

i. Receiver

- Type: separately wired (in order to listen to 2 different communications);
- Impedance: 300 or 150 ohm;
- Frequency: At least 300 – 4000 Hz;
- Distortion: <%2;
- Sensitivity: At least 94 ±3 dB SPL (serial connection to both receivers, 1KHz and 200mV input).

ii. Microphone:

- Noise suppression >10 dB
- Frequency: at least 300-4000 Hz.

iii. Other requirements:

- Microphone cordage protection and shielding;
- Headset wire shielding.

iv. Display and alphanumeric keypad

- The display installed in each operator place shall provide visual data concerning voice communications (at least coding, users, quality, channels, crypto device used, warnings, TX/RX used etc.) and the keypad shall allow operators to perform simple operation using alphanumeric keys (requests to RSC operators, telephone dialling etc.).

g. The HMI shall prohibit interconnections between red side MPS Server and black side RSC server, which requires mechanical switching between red side and black side.

6.8.10 **Vocoder:**

a. In order to reduce switch complexity and to meet channel quality requirements easily, each operator voice workstation shall be provided with voice digital coding, for example VOIP although it is not required.

b. The requirement is NOT only on external voice channels. Digital coding shall be employed for all black internal and external voice services and for all red internal and external voice services.

c. No specific voice coding other than 4591/4197/4198 is required, as digital coding compliant with STANAGs 4591/4197/4198 is implied and imposed through the PFE devices for voice services. However Contractor may provide additional codecs for voice services for internal and external users, Red and Black, to provide improved quality of service.

d. Interoperability with legacy external digital users (e.g., STANAG 4591 users in ship-shore circuits or VoIP users in the NATO Core or NDN) shall be achieved by transcoding services provided within the red- and black- voice networks, and, for external analogue users, through the respective requirements of this Annex.

6.8.11 **Mechanical Switch:**

a. Each operator shall switch between crypto or plain communications by using a Mechanical Switch, thus physically separating the Red from the Black Voice Network.

6.8.12 **Crypto Voice Pool:**

a. A pool of crypto voice devices shall link the Red Voice Switch and the Black Switches, under the control of MPS Server Cluster.

6.8.13 **VMSS Connections:**

a. The VMSS shall be connected to the Black Switch (CISS). The RSC shall have a control connection to the Black Voice Switch (BVS) and the MPS shall have the same type of connection to the Red Voice Switch (RVS). Control of VMSS switching is part of the existing BICC software package (HMI control and display) in the CISS/RSC/MPS components.

b. The Black Voice Switch functionality may be integrated in the Black Switch. Basically the Black Switch connects the ACMS line to the HF modem in the remote site. The BICC software can define the ACMS lines and connect (or disconnect) the ACMS lines to the lines defined in the remote site. The GUI allows listing of the available lines in ACMS (already connected or available) and lines available in selected remote site. It is possible to connect available ACMS lines to the free remote lines.

6.8.14 **Recorder**

a. The Voice Management Subsystem (VMSS) shall contain two recorders with possibilities to save all voice communications upon request. The Contractor shall provide appropriate recorder(s) to meet this requirement

6.9 Precision Timer and Frequency Standard Sub-System (PTFS)

6.9.1 The PTFS shall be formed by the following components:

a. A main unit containing the input interfaces, a precise oscillator and clock unit time and frequency processing units and an output interface

b. Reference Oscillator; it is required to generate the master clock with an accuracy of 10-8, not affected by temperature changes, vibration, acceleration and magnetic fields;

c. Distribution Units as necessary with a common backplane capable of feeding as many output slots as required in each site. The Distribution Unit shall accept as input both the reference oscillator clock and the GPS clock. References shall be directly supplied to black devices while an isolator is required for MPS Server.

d. One (1) GPS Receiver;

e. Isolator for PTFS

6.9.2 The PFTS shall be connected to MPS, RSC and VMSS and mounted in a rack.

6.10 Power Supply Sub-System (PSS)

6.10.1 The PSS shall supply power to devices and equipment installed by the Contractor at ACMS, TX and RX sites. The PSS shall make use of TEMPEST approved filters to avoid compromising emissions and the installation shall comply with requirements stipulated in respective SDIPs listed in SOW Section 4. The provision of filters will depend on specific site conditions and on the level of security classification of processed information. It is the Contractor's responsibility to include above mentioned variables in the design and installation works.

6.10.2 At the ACMS, Tx and Rx sites the Contractor is responsible for provision and installation of BRASS dedicated NB PSS. It is the Contractor's responsibility to integrate BRASS dedicated NB PSS with the Prime Power Supply System and SB PSS provided by HN.

6.10.3 The PSS will be based on the following main units:

a. BRASS dedicated Power Distribution Boards, breakers, RCD's, cabling associated ducts and trays, etc.

b. Short Break Power Supply Sub-System (SB PSS) - provided by HN -

c. No Break Power Supply Sub-System (NB PSS) – UPS with batteries;

6.10.4 The contractor shall establish a power budget to determine the capacity of the SB PSS and NB PSS for each site (ACMS, TX and RX). Considering number of power amplifiers of transmitters and antennas, in the worst case, the number of transmitters transmitting at maximum power is limited by the maximum number of available antennas. Those transmitters not transmitting shall be ready to be used (standby).

6.10.5 A reserve capacity of 20% shall also be assured. The result of this calculation shall be reflected in the System Design Document (SDD) where the contractor shall propose suitable products that will be approved by the purchaser. Cabling from the transformer to the bunker will be the contractor responsibility.

6.10.6 **NB PSS - UPS:**

a. The project also requires the provision and installation of BRASS dedicated NB PSS at the ACMS, Tx and Rx sites to protect sensitive units and devices from having logical and physical damages in case the Prime Power Supply System fails, potential drop, peaks / transients, interference/noise and frequency change. Note that, all equipment on Transmission and Receiving chains except antennas and Amplifier layers of transmitters is considered sensitive units in this context. UPSs shall be provided in fully redundant configuration. Additionally, the NB PSS shall have 20% of spare capacity.

b. The UPS links to RSC shall be independent from the status of the Local RSC LAN, thus the UPS shall be connected to the RSC Server both through the LAN and through a direct serial connection using a proper SNMP integrated card. The SNMP card shall allow power monitoring from RSC WS(s).

c. The UPS shall provide a minimum of fifteen (15) minutes backup power in case the Prime Power Supply System fails.

d. The UPS shall be On-Line double conversion technology (AC/DC/AC) with zero time transfer.

e. Harmonic distortion of less than 5% Total Harmonic Distortion (THD)

f. The batteries shall be of sealed maintenance free type (the type and model that does not require dedicated ventilation). Replacement of the batteries shall be possible without powering down the UPS.

g. The expected battery lifetime shall be ten (10) years .

h. The Contractor shall supply UPS system at each site with the other following characteristics:

i. No Break Power

ii. Input voltage 400 Vac three phases with neutral, 45 to 65 Hz

iii. Output Power sized in accordance to the applied loads

iv. Operating time with max load not less than 30 min

v. 12 Volt batteries lead-acid type, recharging time less than 3 hours.

6.11 Transmitter Site (TX)

6.11.1 The ACMS shall be supported by the Asparuhovo transmitting site that shall be equipped with:

a. eight (8) 5 kW HF solid state transmitters if required with line flatteners;

b. six (6) Wideband Horizontal Dipole Antennas; two (2) RLP Antennas with lighting kit and safety climb system.

c. one (1) Antenna Matrix with one (1) 5 kW Dummy Load;

d. five (5) modems STANAG 4285 and 4539 as well as STANAG 4197 compliant; 1 time (1-NATO BCST, 1 National BCST, 2-S-S, 1-MRL);

e. three (3) voice RF modems compliant with STANAG 4197;

f. one (1) Digital Black switch and data switch as well as one (1) audio switch.

g. one (1) RSC LAN (including switches, routers)

h. RF transmission lines

i. one (1) workstation

j. one (1) network printer (laser)

k. four (4) UPSs in Rack

l. two (2) base stations, two (2) antenna and cabling and one (1) antenna mast for DLOS connection

6.11.2 The exact HF spectrum and frequencies for the BRASS BGR operation will be defined in detail at a later stage and is a responsibility of the National Spectrum Management Authority. It is done based on NATO operating requirement. As an indication of current usage of HF in NATO, the NATO's Allied Communication Procedures for maritime HF, specifies IER's for HF support using frequencies as low as 2 MHz. Although scientific definition of BRASS is specified as 3 – 30 MHz, typical military HF radios support operation from 2.000 MHz to 29.999 MHz, and such range of operation would be required to meet the NATO requirements.

6.11.3 The number of transmitters is established to support NATO Broadcast requirements, 1 (one) broadcast stream on 4 (four) frequencies. The information from the four transmitters shall be identical and can be serviced by the audio-output from a single modem and the only reason to have receiver for this requirement is OTAM, the broadcast service itself requires no receiver at all, and OTAM can be performed on a sampled basis examining one frequency at a time as required, therefore requiring only one modem at the receive-site for Broadcast. As a result, number of Modems is related to the number of circuits. 5 modems were considered for both Tx and Rx sites taking into consideration that it will be needed: 1 NATO BCST + 1 National BCST, 2 S-S + 1 MRL circuits for NATO and National purposes.

6.11.4 The Contractor shall consider continuous operation at 5kW with dummy load; Contractor's assumption of any additional operational requirements (e.g., forced air or water cooled termination, fail safe protection) will be dictated by their assessment of their capability to meet the system requirements for reliability, maintainability, and availability.

6.11.5 **RF Modems (Both for Tx/Rx sites):**

a. The RF modems shall be compliant with STANAG(s) 4285-4539 and 4197 for interoperability with the current BRASS programs being implemented. The system shall be compliant with STANAG 4203 edition 3. STANAG 4203 Ed.3 is applicable to HF modems to the extent that it defines baseband audio interface requirements (and constraints) applicable to HF modems, e.g., audio power and impedance levels, and passband. Specifically, STANAG 4203 Ed.3 contains audio passband requirements more suitable for the high-speed PSK HF modems than earlier editions of STANAG 4203. Other HF modem requirements that apply are defined in the other named STANAGs (i.e., 4285-4539 and 4197) in this same paragraph.

6.11.6 **Audio Switch (Both for Tx/Rx sites):**

a. Audio switch is an audio matrix that connects the RF modems to transmitter/receivers. Audio switches shall be used in the transmission/receiving chain allowing to assign any transmitter/receiver to any audio line. (This component shall be controlled by the RSC Tx/Rx Site)

b. The Audio Switch System shall be in a modular and flexible configuration in order to achieve, with different combination of its modules, different modularity in terms of input and output ports capacity.

c. Audio switch shall have an extra capacity to serve to two additional communication lines that will be established with future BRASS Enhancement 1 (BREITA) Project.

6.11.7 **HF Transmitters :**

a. The Contractor shall supply, integrate and test HF Transmitter equipment of “Solid State” technology.

b. A typical configuration of the transmitter 5kW includes the control circuits, low level RF, power amplifier and power supply.

c. The HF transmitters shall be used to modulate the HF carrier with the baseband input signal and amplify it. (This component shall be controlled by the RSC Tx/Rx Site).

d. The equipment of the rack transmitter component shall meet the following minimum requirements:

i. Frequency range: 2-29.999.99 MHz

ii. Tuning: automatic digital

iii. Tuning steps: not higher than 10 Hz

iv. Tuning time: max 10 s

v. Modes: USB-LSB-ISB-AMCOMP-CW-PSK

vi. Output RF power: 5kW PWP and mean

vii. Power levels: 1/1, 1/2, 1/4, 1/8

viii. Output: on 50 Ohm load con VSWR 3:1 max

ix. Frequency stability: + 1/10-8 daily from 0ºC to 50ºC

x. ITU_R SM.329-7

xi. MILSTD 188 141 B

xii. Intermodulation attenuation: better than 35/36 dB

xiii. Sideband attenuation: better than 50 dB

xiv. Carrier attenuation: better that 10 dB

xv. Audio input level: 0 dBm on 600 Ohm balanced

xvi. Remote control capability including but not limited to: frequency, mode, power level, BITE.

xvii. Programmed channels: minimum 10

xviii. Monitoring capability including but not limited to: hours of operation, number of failures, tuning numbers, Forward and Reflected Power,

xix. Power supply: 400 Vac, ±10%, three phases, 45-65 Hz

xx. Power consumption: less than 20kW

xxi. Operating temperature: 0ºC - 50ºC

xxii. Humidity: max 95%

xxiii. Cooling: forced air

e. The primary power consumption of each HF transmitter shall be maximum 20 kWatt at rated (5kWatt) RF output power. Rated RF output power is defined as the maximum continuous non saturated output and is required on all transmit frequencies of the transmitter. The power consumption of the 5 kW transmitter is required under normal conditions with voice modulation J3E and 5 kW PEP. The main requirement on the 5 kW transmitter is the operation under high VSWR conditions and the line flattener is treated as an example for means to fulfill this requirement.

f. In case of power outage, the states of the transmitters shall be kept in order to avoid reconfiguring the exciter portion when the power comes back. The Contractor shall clearly specify the requirements of the UPS being used for that purpose.

g. The Contractor shall prove compliance with any and all STANAG 4203 requirements (i.e. linearity, spectral containment of transmitted signal etc) during the transmitter acceptance test.

h. Availability and MTBF are defined in Book II Part IV (SOW). Other applicable transmitter and receiver requirements such as sensitivity, phase linearity, level of harmonic freq, frequency stability and others are specified in STANAG 4203 Edition 3, which is applicable to this SOW.

i. The Transmitters shall be manually (from the equipment from panel) and remotely controlled by the RSC in normal usage. In case of connection failure to the ACMS, the local RSC shall be able to control the transmitters and any other equipment that under normal operation would be controlled remotely.

j. The applicable standard for this SOW (i.e., STANAG 4203 Edition 3) specifies transmit-to-receive and receive-to-transmit switching times (15 msec and 25 msec, respectively). Transmitter retuning times shall be compliant with STANAG 4538, which is applicable to Automatic Link Establishment (ALE). .

k. Audio splitters shall be used in the transmission chain whenever there is a need for the same (audio) information to be transmitted in more than one frequency (component). Each Audio Splitter can receive one single audio channel and can split it to (at least) five output channels. The Contractor shall provide one or more audio splitter with as many input and output circuits as necessary for the proposed solution to ensure system redundancy/frequency diversity.

l. Contractor shall ensure that transmitters include filters (post selectors) preventing spurious signals from the transmitters having an adverse effect on the performance of the receivers

6.11.8 **HF Transmitters Equipment cooling**

a. The Contractor shall provide cooling for HF transmitters (as part of the transmitters) in accordance with:

   i. Close circuit operations

   ii. Intake air filters from the outside

iii. Ventilation or Ventilation/Cooling of the racks with high heat dissipation. Adjustable air flow to keep the mean temperature to the optimal value for the operating equipment. The energy consumption and the air flow shall be kept as low as possible.

b. The following requirements shall be complied:

i. The cooling equipment shall be duplicated in order to guarantee continuous operations.

ii. The cooling system shall be of heat-pump type, air/air reversible, with split unit installed on the walls.

iii. The equipment shall be installed outside, preferably on the roof and splinter protected.

iv. High quality COTS shall be used.

v. The system shall be automatic and provided with remote control and monitoring interfaces

vi. Noise and vibrations shall be kept as low as possible and conforming to working environment specifications

vii. Use of fluid is not recommended

viii. The air flow shall be in ducts. Plenum is not recommended. It is recommended the use of suitable diffusers.

ix. The recommended cooling gas is R 407 C type or in accordance with the latest regulations.

x. The incoming air flow shall be filtered at least to M Class

xi. The Inside/outside openings shall be shaped (zig-zag) for splinter protection and secured to avoid entrance of animals, objects etc.

xii. The racks shall be provided with automatic air flow control to maintain a constant operating temperature.

xiii. Whenever possible avoid the use of ON/OFF devices.

xiv. Special consideration shall be used in considering the heat exchanged of the HF transmitters with the room environment.

xv. Minimal energy absorption shall be one of the main design requirements;

xvi. In addition:

- Outside openings security.
- Heat distribution using insulated copper pipes.
- Outside Moisture discharge.

xvii. Figure 6 depicts an example of equipment cooling system

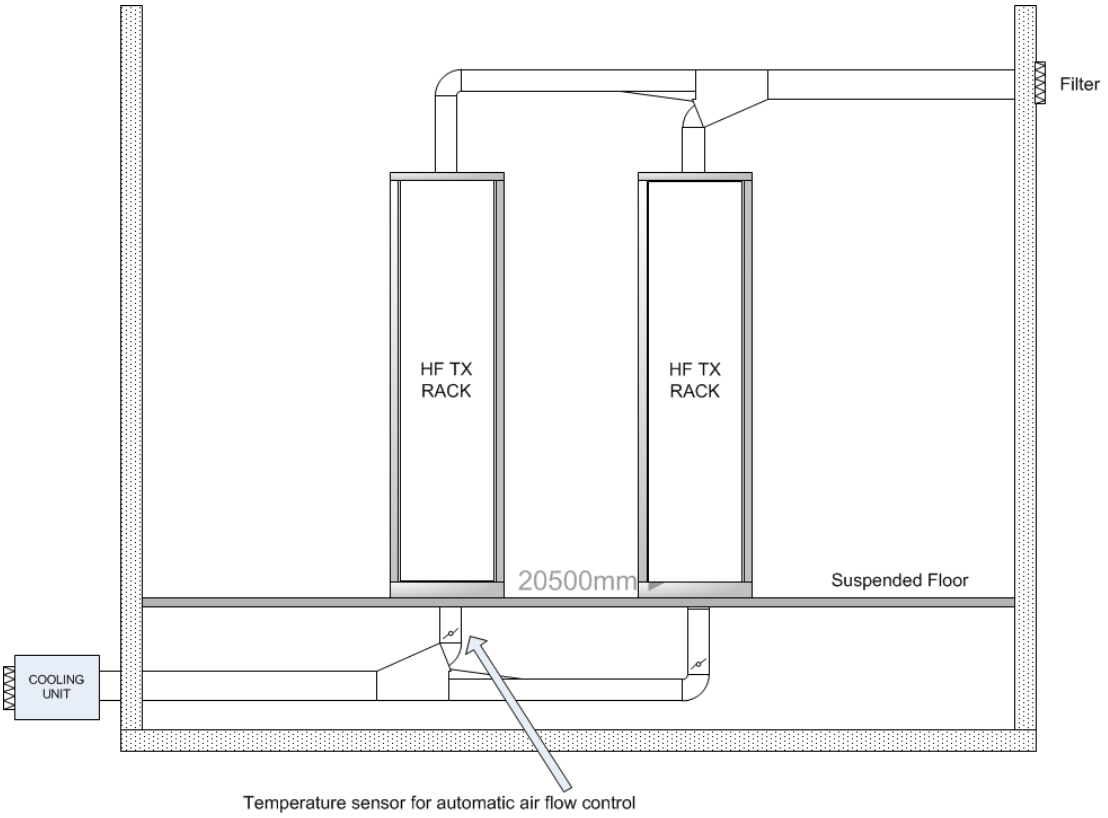

Figure 7: Equipment cooling example.

6.11.9 **HF Transmitting Antennas Matrix:**

a. The Antenna matrix shall be used in the transmission chain, allowing assignment of any antenna to any HF transmitter. (This component shall be controlled by the RSC Tx/Rx Site)

b. The Antenna matrix accomplishes the radio-frequency connection from each output of the transmitter equipment to one among the inputs for the antennas, by using a method that avoids the connection of more than one transmitter to a single antenna, and that also avoids the connection of more than one antenna to a single transmitter.

c. Therefore, antenna matrix shall be provided with protections in order to avoid;

   i. hot RF switching,

   ii. antenna dangerous connections to more than one transmitter and,

   iii. transmitter dangerous connection to more than one antenna.

d. It shall also be provided with test points to perform VSWR measurements.

e. It shall be possible to control the antenna matrix remotely and locally.

6.11.10 **HF Transmitting Antennas**

a. The RF cables shall present low losses at the transmitting band (losses < 1.7 dB/100m at 30 MHz). They shall comply with the same environmental requirements as specified in Annex-A Appendix-1.

b. The Contractor shall develop and implement an antenna farm solution to locate the antennas of BRASS (8 + 2 (future enhancement)) to fulfil the requirements of the SOW and health and safety issues.

c. The contractor shall obtain all required permits and documents to place the antennas in accordance with national legislation and law. This includes any requirements by ICAO in terms of aircraft warning lights. (Refer to Appendix-1 Book II Part IV Annex-A for further details.)

d. Transmitter antenna environmental parameters for solar radiation, direct solar radiation and rain intensity are those typical of the host nation location and environment. Worst-case values for these parameters applied to the transmitter antenna structure shall be derived by the contractor from 50-year historical climate data for the sites.

e. The Contractor shall deliver the equipment with the proper Ingress Protection (IP) rating in accordance with the environmental conditions on site.

f. The antenna sub-systems mounted on the antenna masts, as well as the antenna masts themselves shall be capable of withstanding environmental conditions without suffering degradation of system performance (gain, pattern type, sensitivity) and suffering permanent mechanical damages. The environmental conditions are stipulated in Appendix 1 to SOW Annex-A, paragraph 3.5.

   i. Additionally, the antenna sub-systems mounted on the antenna masts shall be compliant with following Electrical Conditions:

      - Max VSWR (over full frequency range) = 3.0
      - Max Power Input = 5 kW

   ii. The isolation requirement shall be determined by the Contractor but not be less than 30 dB, and shall be sufficient to allow the operation of the required antennas in the determined antenna farm. The Contractor shall prove that the system will operate with the minimum mutual interference with the proposed design in order to comply with the RAMT requirements in Section 9 of the SOW.

   iii. The Contractor shall provide and install lightning protection on all antennas in Asparuhovo.

   iv. The contractor shall provide earthing and grounding system for equipment provided and installed at Tx site.

   v. If, due to proximity of antennas and buildings locations and in accordance with respective BGR regulations, connection between earthing networks is required it is the Contractor’s responsibility to connect the antenna earthing network to the earthing network implemented by HN. The ground resistance requirement at the Tx site and standards shall be in compliance with the governing HN electrical standards.

g. The Contractor shall design and implement suitable antenna mast foundation works (including relevant earth works) required for the installation of new antenna mast for BRASS and DLOS systems. The antenna farms on Tx site will host the antennas of BRASS system as well as two additional antennas of future enhancement to BRASS (deployable land force support). Note that, with this project only the locations of the additional antennas will be determined. The two antennas will be procured in future projects. On Tx site, there will also be a facility building located close to the antenna farm. Therefore, the locations of the antennas will be important not only for the technical coverage requirements but also for the health and safety requirements and for preventing interferences between two different systems. The Contractor shall get the National Health and Safety Certification for Tx site from BGR national authorises

6.11.11 **RF Cable Laying**

a. The cable shall be of the following types:

   i. Flexible cable (wrappable/cable conduit lay)

   ii. Rigid/semi rigid cable

b. The Contractor shall follow the below instructions related to the installation environment:

   i. Internal, laid

      - On metal duct, fixed in ordered manner
      - On metal duct or vertical cable ladder, fixed on the ducts or ladders with cable clamps designed to support the cable weight. The clamps shall be installed at least every linear meter of the cable length.

   ii. External, laid in cable duct trench at a depth of 60cm with inspection wells every 50m

      - If flexible routed through pipes; the size of the pipes shall be sufficient to easily proceed with the installation of the cables. The size of the pipes shall also allow the installation of the same quantity of cables again as the initial installation.

- If rigid lay in pipes made of two half concrete or clay pipes, with cable laying on the bottom half covered by the second half and sealed with mortar. Inspection wells shall be provided at junction points.

c. The Contractor shall perform the installation in accordance with the following general requirements:

i. The curve radius of the laid cables shall conform to the cable manufacturer specifications.

ii. In cable routing special care shall be made in order to avoid torsions that can damage the cable and which can prevent pulling out and/or further insertion of additional cables.

iii. Cable junctions are allowed only where they correspond to inspection wells.

iv. Cable section shall be the same for the whole length of the cable.

v. The cables shall be labelled and identified with cable strips:

- On both ends
  - At every inspection well
  - Every 10m along the cable ducts or cable ladders
  - Every time the cable change course

6.11.12 **HF Antenna Installation (Tx and Rx)**

a. For antennas that require a ground plane, the Contractor shall:

i. Prepare the area as described in paragraph 4.4

ii. Excavate up to 35cm the area intended for the laying of the ground plane and verify the flatness.

iii. Place pins on the area to allow position identification of antenna and guy line plinths

iv. Put in place a layer of dry rubble on the levelled area

v. Install the ground plane as per Manufacturer specifications

vi. Put in place a layer of at least 10cm of mixed quarry

b. For antennas that do not require ground plane, the Contractor shall:

i. Clean and prepare the area as per paragraph 4.4

ii. Place pins on the area to allow position identification of antenna and guy lines plinths

c. In addition, the Contractor shall perform the following civil works for HF antenna installation:

i. Construction in reinforced concrete of the plinths of such a size to be compatible with the Manufacturer specifications and the results of the soil tests

ii. The plinth at the base of the antenna mast shall be large enough to avoid that the grass growing around the area to come in contact with the antenna structure.

- Connect the metal structures among them to the earth pins
- Prepare the base of the antenna for the RF cable joint, and the other devices as service power socket, discharger, Air Obstacle Light power transformer.
- Build a security/safety fence around the concrete base of at least 1m high. Fence material and size shall be adequate to avoid personnel accidental contact and wild animal access.
- Antenna installation in accordance with the Manufacturer instructions

d. The infrastructure of antenna obstruction lights shall be implemented in accordance to ICAO Annex 14, Volume 1, Chapter 6, “Visual aids for denoting obstacles”, latest edition.

e. All the antennas shall be provided with obstruction light kits. The kit shall include a double toroid transformer to be connected to LT power supply at the base of the antennas. The LT power cable(s), connected to the electric panel of the site, shall be laid into a PVC pipeline laid underground with a sufficient number of inspection wells.

6.11.13 **Lightning System for Tx and Rx antennas**

a. The lightning system, which specific characteristics shall be identified in relation to the structure to be protected, shall be designed in relation to the following regulations:

iii. EN 62305-1:2011, “Protection against lightning - Part 1: General principles”

iv. EN 61000

v. Safety regulations

6.11.14 **Ground and Earth System for Tx and Rx antennas**

a. The Earth system shall be implemented by means of an underground copper braid laid along the building perimeter reinforced with ground earth stakes accessible and sectioned via inspection wells.

b. The Earth system shall be sized in accordance with the electric system specifications and of the surround soil type and quality. In any case the total earth resistance shall not be in excess of a few tenth of Ohm.

c. The Ground System shall be implemented by connecting all metal structures existing in the building and of the concerned structures related to the civil infrastructure and the existing systems like electricity, air cooling ventilation heating etc.

6.12 Receiver Site (RX)

6.12.1 The ACMS shall be supported by the Galata receiving site that shall be equipped with:

a. five (5) receivers;

b. five (5) RF modems STANAG 4285-4539/STANAG 4197 compliant; 1 time (1-NATO BCST, 1 National BCST, 2-S-S, 1-MRL);

c. three (3) voice modems in accordance with STANAG 4197;

d. two (2) Black switches (with digital/analog interfaces) and one (1) Data Switch,.

e. one (1) automated antenna matrix;

f. two (2) RLP antenna system with lighting kit and Safety climb system; and three (3) Wideband Horizontal Dipole Antenna with ancillaries.;

g. one (1) work station;

h. one (1) network printer (laser)

i. three (3) UPS in rack

j. RF transmission lines

k. two (2) base stations, two (2) antenna and cabling and one (1) antenna mast for DLOS connection

6.12.2 Unfortunately, when receiving data from afloat units or from an adjacent BRASS node, clocks might not be the same, thus requiring elastic buffers. When receiving data from the ships the clock may be different than the one at the BRASS site. The Contractor shall design a solution to cope with the difference in clocks. Regarding the siting and size of the buffers it is up to the Contractor to propose the best architecture to comply with this requirement.

6.12.3 The buffer size that shall be installed at the receiving site, shall be able to accommodate as a minimum ±1 second drift at the highest data rate.

6.12.4 **HF Receiving Antennas:**

a. Receiving antennas shall be able to receive HF signals.

b. The contractor shall provide earthing and grounding system for equipment provided and installed at Rx site.

c. The RF cables shall present low losses at the receiveing band (losses < 1.7 dB/100m at 30 MHz). They shall comply with the same environmental requirements as specified in Annex-A Appendix-1

d. The contractor shall obtain all required permits and documents to place the antennas in accordance with national legislation and law. This includes any requirements by ICAO in terms of aircraft warning lights. (Refer to Appendix-1 Book II Part IV Annex-A for further details.)

e. Receive antenna environmental parameters for solar radiation, direct solar radiation and rain intensity are those typical of the host nation location and environment. Worst-case values for these parameters applied to the transmitter antenna structure shall be derived by the contractor from 50-year historical climate data for the sites.

f. The Contractor shall deliver the equipment with the proper Ingress Protection (IP) rating in accordance with the environmental conditions on site.

g. The antenna sub-systems mounted on the antenna masts, as well as the antenna masts themselves shall be capable of withstanding environmental conditions without suffering degradation of system performance (gain, pattern type, sensitivity) and without suffering permanent mechanical damages. The environmental conditions are stipulated in App1 to SOW Annex-A paragraph 3.5.

   i. Additionally, the antenna sub-system mounted on the antenna masts shall be compliant with following Electrical Conditions:

      - Max VSWR (over full frequency range) less or equal to 3.5

h. Contractor shall provide and install lightning protection on all antennas in Galata.

i. The contractor shall provide earthing and grounding system for equipment provided and installed at Rx site.

j. If, due to proximity of antennas and buildings locations and in accordance with respective BGR regulations, connection between earthing networks is required it is the Contractor's responsibility to connect the antenna earthing network to the earthing network implemented by HN. The ground resistance requirement at the Rx site shall be in compliance with the governing HN electrical standards.

k. The Contractor shall design and implement suitable antenna mast foundation works (including relevant earth works) required for the installation of new antenna mast for BRASS and DLOS systems. The antenna farms on Rx site will host the antennas of BRASS system as well as two additional antennas of future enhancement to BRASS (deployable land force support). Note that, with this project only the locations of the additional antennas will be determined. The two antennas will be procured in future projects.

6.12.5 **HF Receiving Antennas Matrix:**

a. Antenna matrix shall be used in the receiving chain, allowing to assign any antenna to any HF receiver. (This component shall be controlled by the RSC Tx/Rx Site).

b. The Antenna matrix accomplishes the radio-frequency connection between input of receiver equipment and output of the antennas. It shall allow the connection from one antenna to one or more than one receiver at the same time.

c. It shall also be provided with test points to perform VSWR measurements.

d. It shall be possible to control the antenna matrix remotely and locally.

e. Antenna matrix shall have an extra capacity to serve to two additional communication lines that will be establish with future BRASS Enhancement 1 (BREITA) Project.

6.12.6 **HF Receivers :**

a. The HF receivers shall be used to demodulate the received signal into the baseband signal (audio frequency) to be further processed. (This component shall be controlled by the RSC Tx/Rx Site):

b. Contractor shall ensure that receivers include filters (pre-selectors) preventing spurious signals from the transmitters having an adverse effect on the performance of the receivers .

6.12.7 **Audio Switch (Rx sites)**

An Audio switch shall be used in receiving chain, allowing assignment of any modem signal to the desired audio channel, which may be split as required.

6.13 Connection to ACP 127 Network

6.13.1 The ACMS will be based on ACP 127 formatted messages

6.13.2 Communications via the Bulgarian COMCEN to other BRASS nodes will be via the NDN and NGCS via a black key stream.

6.14 Direct Line of Sight (DLOS) System between ACMS/Tx/Rx sites

The connectivity between future ACMS site- Receiver site and Transmitter site is currently achieved through an old unreliable cabling system. A new Direct Line of Sight (DLOS) connectivity between sites shall be implemented by the Contractor.

6.14.1 High-level Functional Requirements

a. The BRASS BGR DLOS Links shall provide transparent transport of data between the Tx or Rx sites and the ACMS sites in a manner that the BRASS BGR system performance is not affected.

b. The DLOS links shall provide the users with a monitoring function to allow quick detection of failures and issues by the operators at the ACMS site.

c. The DLOS links shall provide adequate tributary interfaces to carry all intra-site BRASS traffic including management traffic.

d. The DLOS links radio terminals shall be deployed at the BGR sites such that they cannot be obstructed by circulating vehicles (including trucks) in the vicinity of the site.

e. The Contractor shall provide the capability to centrally manage (i.e. administer, configure, reconfigure, control and monitor), from a location in Gorna Traka, all radio equipment according to this SOW.

6.14.2 High-level Technical Requirements

a. System Requirements

i. The 3dB lobe (beamwidth) of the antenna radiation pattern shall be maintained within 3 degrees.

ii. If antennas are mounted by means of auxiliary poles, the latter should be fixed to the main antenna mast via a minimum of two separate mechanical interfaces.

iii. All DLOS equipment shall be delivered in 1+1 HSB configuration.

iv. The DLOS links shall be engineered with a link availability of 99.98% of the year, taking into account the effects of propagation outages and equipment failures. Availabilty and reliability figures shall be confirmed during the project implementation to demonstrate his claims of compliance.

v. The solution delivered by the Contractor shall be flexible enough to allow any frequency modification that could become necessary after implementation, such a solution being detailed by the Contractor so that the Purchaser team can undertake all corresponding actions. Any specific tools and procedures necessary to undertake a frequency modification shall be provided by the Contractor at the central location within the scope of this contract.

vi. The Contractor shall provide all relevant detailed performance or characteristics of his deliverables including the following:

- Level diagrams of the equipment and of the links, including antennas, filters and feeders.
- Transmitter output power, dynamic range and radiated spectrum in channel and adjacent channels. Automatic power control mechanisms shall be documented. Out-of-band, spurious signals, and phase noise shall be described by the Contractor.
- Receiver dynamic range, threshold and frequency selectivity.
- Modulation and coding schemes, with transit time, BER performance curves and spectral efficiency. The multiplexing mechanism, whether such function is implemented separately or embedded in the DLOS equipment.
- Mass, volume and power consumption of his equipment, broken down to subsystem or LRU level, with specific emphasis on the indoor and outdoor equipment, and the one be mounted above the towers or masts.
- Antenna size, gain, polarization, cross polarization discrimination (XPD) impedance, VSWR and radiation pattern for equipment

supplied by the Contractor according to this SOW.

vii. The DLOS links shall be for outdoor operation and shall be housed in a very compact and robust waterproof outdoor unit (ODU) to be mounted on the back of the antenna.

viii. All DLOS equipment shall include agents for connection to a supervisory system capable of providing full diagnoses of the system performance and control of the network parameters. The supervisory software system shall include Alarm Status and Controls, Performance monitoring (G 821) and Configuration management. This applies not only for the new but also for the existing equipment the configuration of which may require upgrading to meet the network monitoring center requirements. The software product for monitoring and management of the radio relay stations must be compatible with the software product “Provision” of “Aviat Network” company, which is the current one for monitoring and management of the radio relay stations from the active in the moment system of BGR National Defence Network (NDN) "Strandza-2". This requirement is necessary to achieve an ability to build a unified communication environment that is monitored and managed by the unified automatic management system in one centralize control center.

ix. Frequency requirements according to Rec. ITU-R

x. The Contractor shall provide the calculation results for each link showing the power consumption and the recommendation of the size of the battery packs required at each site for 30 and 60 minute support.

a. Radio Requirements

i. Frequency range as defined for BGR MoD use: 7989-8129 MHz

8299-8439 MHz

ii. Channeling: ITU-R 636-3;

iii. Bandwidth: 14 MHz

iv. Channel spacing/ elongation: 310 MHz;

v. Polarization: no specific requirement

vi. Modulation: QPSK (or similar) and 16 QAM;

vii. Output Power (1 dB compression point): as required by the link budget computations, but not below +20 dBm;

viii. Dynamic range in transmission: adjustable between the 1 dB compression point and 20 dB below;

ix. Dynamic range in reception at least 40 dB above specified threshold;

x. Bit Error rate < 10E-11 shall be provided with an availability of 99.99% calculated in accordance with ITU-R P530 for rain region L

xi. Link MTBF > 12 000 hours

xii. Temperature range: -20°C to + 55°C (outdoor equipment);

xiii. Solar Shielding

xiv. Physical dimensions: all indoor DLOS equipment shall fit in one 19 inch rack cabinet of depth < 600 mm and height below 2 meters. All outdoor equipment shall be man-portable by not more than two persons and liftable to the mast without specialized equipment such as a crane.

xv. RF planning for DLOS Links should be in accordance with the Standing operation procedures (SOP) of NATO's frequency coordination and the authorization to use radio relay equipment.

b. Performance Requirements

i. The DLOS links shall ensure binary integrity count with no more than one bit slip per 96 hour period.

ii. The contractor shall provide a link margin of at least 30 dB for additional attenuation due to extreme weather condition, propagation anomalies, and/or interference from neighboring systems or antennas. Rain excess attenuation should considered in nominal link conditions and calculated in accordance with ITU-R P530 for rain zone L and 99.99% radio link availability.

iii. The switchover from the primary electrical power to the batteries and vice versa shall not generate errors on the link nor bit slips nor synchronization losses.

iv. The DLOS system at the 3 sites shall include automatic rerouting of the affected traffic in case one of the 3 links fail.

Appendix 1 to Book II Part IV Annex-A

ANTENNA MASTS REQUIREMENTS

SECTION 1 ANTENNA MASTS

1.1. The Contractor shall design, provide and install the required number of antenna masts at each site. The Contractor is also responsible for provision of suitable antenna mast foundations required for the installation of new antenna masts.

1.2. The Contractor is responsible for obtaining all Military and Civil permissions for the installation and operation of antenna masts and all related installation activities such as cutting trees (for further details, refer to SOW Section 12).

1.3. The Contractor shall conduct and/or obtain soil study at the locations of antenna foundations.

SECTION 2 CONTRACTOR'S RESPONSIBILITIES FOR THE ANTENNA MASTS:

2.1. Provision and installation of new steel masts capable of supporting the BRASS system.

2.2. Provision and installation of mast ancillaries and civil works including but not limited to masts foundation, earth works including necessary trenches, cable ducts, earthing and grounding systems, cabling, cable ladders or trays, lightning protection, air-craft warning lights in accordance with ICAO standards, safe to climb structures.

2.3. Provision and installation of all required electrical, radio earthing and grounding connections..

2.4. Execution of site preparation works including cutting trees.

2.5. The design, production and installation of the antenna masts shall comply with following standards::

2.5.1. EN ISO 1461 –. Hot dip galvanized coatings on fabricated iron and steel articles;

2.5.2. EN 10204 Metallic materials. Types of inspection documents

2.5.3. EN 10025 – Hot rolled products of structural steels. General technical delivery conditions;

2.5.4. EN ISO 14 713 (Part 1, 2 and 3) – Zinc coatings -- Guidelines and recommendations for the protection against corrosion of iron and steel in structures;

2.5.5. EN 10210-1 – Hot finished structural hollow sections of non-alloy and fine grain steels;

2.5.6. ISO 898 (part 1, 2 and 5) – Mechanical properties of fasteners made of carbon steel and alloy steel;

2.5.7. ISO 5817 – Welding -- Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) -- Quality levels for imperfections;

2.5.8. ISO 6520-1 – Welding and allied processes -- Classification of geometric imperfections in metallic materials -- Part 1: Fusion welding

SECTION 3 ANTENNA MAST DESIGN REQUIREMENTS AND SPECIFICATIONS

3.1. An antenna mast lightning protection kit shall be provided and installed in order to ensure lightning protection of installed equipment. It shall consist of adequate lightning rods, surge protection and Earthing kit. The Earthing kit shall be installed, if required, before the concrete pouring for the antenna foundation works.

3.2. The expected lifetime of the antenna mast shall be at least 15 years without any heavy maintenance.

3.3. Health and safety measures shall be implemented: including but not limited to safe to climb structures, sharp corners avoidance and proper safety marking.

3.4. The mast shall be constructed according to quality craftsmanship standards.

3.5. The antenna sub-systems mounted on the antenna masts, as well as the antenna masts themselves shall be capable of withstanding following environmental conditions without suffering degradation of system performance (gain, pattern type, sensitivity) and without suffering permanent mechanical damages:

3.5.1. Local weather conditions pertaining temperature, snow load and ice accumulation (glaze ice – 0.9g/ cm^3), as per STANAG 4370. The region is defined as conditions A3 Intermediate and C0 Mild Cold (according to STANAG 4370) for the purpose of this Contract;

3.5.2. High Temperature: Norm: + 55° C for operation;

3.5.3. Low Temperature: Norm: - 20° C for operation;

3.5.4. Permissible wind speed up to 31 m/s and gusting up to 50 m/s;

3.5.5. Hailstones of up to 20 mm diameter, 0.9 g/cm3 density and 58 m/s terminal velocity;

3.5.6. Sand and dust concentrations up to 1g/m³, with particle size down to 20 µm at an air speed up to 20 m/s;

3.5.7. The fundamental resonance frequency of the mast with equipment shall be greater than 3 Hz;

3.5.8. The design of the antenna masts shall take into account seismic conditions of HN.

SECTION 4 ANTENNA AND ANCILLARIES PAINTING

4.1. The steel structure of the mast shall be painted in accordance with the R.A.L colour coding schema that will be provided to the Contractor at least 1 month prior to start of installation activities.

4.2. Access ladder or stairs, cables ladder, floor of platforms shall also be painted in order to provide the correct corrosion protection.

4.3. The time between the galvanisation and the painting shall be as short as possible.

4.4. After cleaning of the steel galvanised structure, one coat of primary and two coat of polyurethane paint shall be applied as a minimum. A minimum thickness of 80µ shall be obtained

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Appendix 2 to Book II Part IV Annex-A

SYSTEM PERFORMANCE REQUIREMENTS

SECTION 1 General

1.1. The BRASS BGR System shall be designed to operate with concurrent transmissions and receptions at any frequencies within the HF band 2 MHz to 30 MHz.

1.2. The BRASS BGR System shall be such that all combinations of transmit and receive frequencies, power levels and data rates can be achieved without degradation of performance, with transmit frequencies being just separated by as little as 6 kHz.

1.3. The antenna farms associated with the Transmit and Receive sites shall be designed in such way that, within a site, the directive antennas are distributed along an East-West axis, so that they do not block each other when pointing to a North/South direction.

SECTION 2 Radio Coverage

2.1. The BRASS BGR system shall provide transmit and receive radio coverage through a combination of propagation modes with the following distribution:

a. Two (2) concurrent directional long-range coverage modes via sky-wave propagation;

b. Four (4) concurrent medium-range radio coverage via sky-wave propagation;

c. Two (2) short-range radio coverage modes.

SECTION 3 Antenna Isolation

3.1. At both the Transmit and Receive Sites, the isolation between any two different antenna terminals shall be at least 30 dB, for any two physically separated antenna terminals, and 25 dB, for any two antenna ports belonging to the same multiport antenna, at maximum transmit power in CW.

SECTION 4 Transmission cable loss

4.1. At the Transmit site, the transmission cable loss between transmit antenna matrix input (i.e. ports facing the transmitter) and any antenna input shall be less than 2.5 dB when measured at 30 MHz.

4.2. At the Receive site, the transmission cable loss between transmit antenna matrix input (i.e. facing the transmitter) and any antenna input shall be less than 3.0 dB when measured at 30 MHz.

SECTION 5 VSWR

5.1. The VSWR of any transmitting antenna port shall not exceed 3.0 at any frequency of the tuning range when measured at the associated antenna matrix input.

5.2. The VSWR of any receiving antenna port shall not exceed 3.5 at any frequency of the tuning range when measured at the associated antenna matrix output.

SECTION 6 Minimum receive levels

6.1. Sensitivity: The BRASS BGR system overall shall be capable of receiving radio signals (SSB mode) at -105 dBm with an output of 10 dB SINAD (Signal to Noise Distortion).

SECTION 7 IMP performance

7.1. The third-order intermodulation products (IMP) resulting from the transmission of any two CW carriers via the transmission function at maximum rated power shall not exceed -25 dBc (25 dB below either carrier) when received and measured at the Receive Site.

SECTION 8 ARQ performance

8.1. The ARQ functionality of the complete BRASS BGR system shall be capable of sending and receiving messages in STANAG 5066 Automatic Repeat Request (ARQ) and Adaptive Data Rate (ADR) modes at each of the BRASS system data rates defined for S/S and MRL services over mid-latitude skywave radio channels, defined here in accordance with the ITU-Recommendation F.1487 “Testing of HF modems with bandwidths of up to about 12 kHz using ionospheric channel simulators”, Annex 3 Section 3 for all types (quiet, moderate, disturbed, and disturbed near vertical incidence) with the following performance…

a. with a rate of undetectable or uncorrected errors in received messages of 1 in a thousand (i.e., 10-3 message error rate);

b. with capability to adapt to increased received signal-to-noise ratio by increasing modem data rate, resulting in success message reception at the specified undetected error rate;

c. with capability to adapt to decreased received signal-to-noise ratio by decreasing modem data rate, resulting in success message reception at the specified undetected error rate.

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Appendix 3 to Book II Part IV Annex-A

HARDWARE SPECIFICATIONS

SECTION 1 Equipment Specifications

1.1. The equipment for this contract shall meet or exceed the specifications provided in this appendix for each of the equipment categories. The equipment is categorised as follows:

a) End-User Equipment

1.2. Where the specification identifies branded equipment, equipment from the brand manufacturer shall be offered.

1.3. Where the specification does not identify branded equipment or is generic, equipment from mainstream brand manufacturers shall be offered.

1.4. Changes to equipment specifications for future horizons, lifecycle or integration reasons will be performed through change proposals and contractual amendments.

SECTION 2 End-User Equipment

2.1 The equipment in this category includes:

a) Desktop PC

b) Workstation Computers

c) Thin/Zero Clients

d) Laptops

e) Personal Mobile Devices

f) Monitors and displays

g) Supporting peripheral equipment

2.2 The equipment in this category shall be sourced from mainstream brand manufacturers including, but not limited to: Hewlett Packard, Dell, Lenovo, Wyse etc, in order to replace existing branded equipment.

SECTION 3 Desktop PC (Generic)

#	Item	Minimum Requirements	Compliant
1.	Form Factor	Small Factory Form (SFF) Computer with the maximum chassis dimensions of H x W x D (mm): 380 x 120 x 380	
2.	Processor	4th Generation Desktop Intel Core i7 Processor	
3.	Graphics	Integrated Intel HD Graphics 4600	
4.	Memory	8GB (2x4GB) DDR3 1600MHz	
5.	Storage	Internal 2.5-inch Serial ATA 3.0 Solid State Drive (SSD) 250GB, drive shall support the: • TRIM command specification • TCG OPAL 2.0 / eDrive encryption standard, • Endurance of 60TB writes.	
6.	I/O Ports	2x USB 3.0 ports and 4x USB 2.0 ports (minimum 2x USB ports shall be accessible from the front), 2x DisplayPort 1.2 ports (Dual monitor support, modes of operation including multi-monitor clone and span), 1x Audio line-in / microphone port, 1x Audio line-out / headphone port both accessible from the front	
7.	Network	On-board Gigabit Ethernet controller 10/100/1000 MBit/s (RJ-45 interface port)	
8.	Drive Bays	1x internal 2.5-inch bay, 1x ready to use external 3.5-inch or 1 x 5.25-inch bay	
9.	Expansion Slots	Internal 1x PCIe x16 Gen3 slot, 1x PCIe x4 Gen2 slot, low profile	
10.	Keyboard	Ergonomic keyboard with low-profile keys, English (QWERTY US) with EURO key, USB interface	
11.	Mouse	Laser Mouse USB interface	
12.	OS	Windows 10 Pro 64Bit	
13.	Security	Embedded Trusted Platform Module (Security Chip compliant with TCG TPM 1.2 or 2.0), Kensington lock slot	
	Options		
14.	HDD cage	3.5inch or 5.25inch bay rugged removable drive enclosure for 2.5inch SATA SSD, full metal construction with key lock, SATA 6Gb/s interface, minimum 15000 carrier insertion cycles, shall be fully compatible to the SFF PC 3.5inch or 5.25inch external drive bay	
15.	Fiber NIC card	Low Profile Fast Ethernet Fiber Network Card 100Base-FX with PCIe interface and LC connector, NIC shall be fully compatible to the SFF PC internal PCIe expansion slot	

#	Item	Minimum Requirements	Compliant
16.	Fiber NIC card	Low Profile Gigabit Ethernet Fiber Network Card 1000Base-SX with PCIe interface and LC connector, NIC shall be fully compatible to the SFF PC internal PCIe expansion slot	

SECTION 4 Monitors (Generic)

#	Item	Minimum Requirements	Compliant
1.	Form Factor	24inch LCD monitor, 60.96 cm viewable area	
2.	Aspect Ratio	16:10 Widescreen	
3.	Panel Type	IPS (In-Plane Switching)	
4.	Surface	Anti-Glare with 3H hardness hard coating	
5.	Resolution	1920 x 1200dpi native resolution, response time 8ms, pixel pitch 0,27mm x 0,27mm, brightness 300 cd/m2, contrast ratio 1000:1, displayable colours 16.7 million	
6.	Video Connectivity	1x Digital Visual Interface connector (DVI-D) with HDCP, 1x DisplayPort (DP) 1.2 port with HDCP 1.4, 1x Video Graphics Array (VGA)	
7.	Build-in USB Hub	1x USB 2.0 upstream port, 2x USB 2.0 downstream ports accessible from the bottom and 2x USB 2.0 downstream ports accessible from the side	
8.	Sound	Multimedia Soundbar docking connectivity	
9.	Stand and mount	Height-adjustable stand, pivot rotation 90 degree, tilt and swivel option, VESA mount compatible	
10.	Security	Security lock slot	
	Options		

SECTION 5 DisplayPort cables (Generic)

#	Item	Specification	Compliant
1.	DisplayPort Cable M/M with Latches Length: 2 m Colour: Black	High-resolution support of up to 4k x 2k Support for High Bit Rate 2 (HBR2) bandwidth of up to 21.6 Gbps Designed and manufactured to DisplayPort 1.2 standards Supports the DPCP (DisplayPort Content Protection in addition to HDCP (High-bandwidth Digital Content Protection)	

SECTION 6 Monitors (Generic)

#	Item	Minimum Requirements	Compliant
11.	Form Factor	24inch LCD monitor, 60.96 cm viewable area	
12.	Aspect Ratio	16:10 Widescreen	
13.	Panel Type	IPS (In-Plane Switching)	
14.	Surface	Anti-Glare with 3H hardness hard coating	
15.	Resolution	1920 x 1200dpi native resolution, response time 8ms, pixel pitch 0,27mm x 0,27mm, brightness 300 cd/m2, contrast ratio 1000:1, displayable colours 16.7 million	
16.	Video Connectivity	1x Digital Visual Interface connector (DVI-D) with HDCP, 1x DisplayPort (DP) 1.2 port with HDCP 1.4, 1x Video Graphics Array (VGA)	
17.	Build-in USB Hub	1x USB 2.0 upstream port, 2x USB 2.0 downstream ports accessible from the bottom and 2x USB 2.0 downstream ports accessible from the side	
18.	Sound	Multimedia Soundbar docking connectivity	
19.	Stand and mount	Height-adjustable stand, pivot rotation 90 degree, tilt and swivel option, VESA mount compatible	
20.	Security	Security lock slot	
	Options		
21.	Warranty	3 Years Europe-wide on-site warranty	

DisplayPort cables (Generic)

#	Item	Specification	Compliant
2.	DisplayPort Cable M/M with Latches Length: 2 m Colour: Black	High-resolution support of up to 4k x 2k Support for High Bit Rate 2 (HBR2) bandwidth of up to 21.6 Gbps Designed and manufactured to DisplayPort 1.2 standards Supports the DPCP (DisplayPort Content Protection in addition to HDCP (High-bandwidth Digital Content Protection)	

Appendix 4 to Book II Part IV Annex-A

Abbreviations

Acronym	**Definition**
ACCS	Air Command and Control System
ACMS	Automatic Control and Management System
ACP	Allied Communication Publishing
ADP	Automatic Data Processing
AFPL	Approved Fielded Products List
AOR	Area of Responsibility
API	Application Programmer Interface
ARQ	Automatic Repeat Query
BCOA	BRASS Control Authority
BCS	BRASS Control Station
BICC	BRASS Initial Core Capability
BITE	Built-In Test Equipment
BLOS	Beyond Line-of-sight
BRASS	Broadcast Ship-Shore and Maritime Rear Link System
BREITA	BRASS Enhancements Increment (1) One Target Architecture
CCIS	Common Channel Interoffice Signalling
CISS	Communication Interface and Switching management System
CLIN	Contract Line Item Number
COLOC	Change of Location of Command
COMMCEN	Communication Centre
COTS	Commercial of the Shelf
CS	Control Station

CUN	Common User Network
DBMS	Database Management System
DCOM	Distributed Component Object Model
FAB	Frequency Availability Broadcast
FEP	Front End Processor
FES	Fire Extinguishing Systems
GUI	Graphical User Interface
HF	High Frequency
HMI	Human Machine Interface
HN	Host Nation
HQ	Headquarter
HVAC	Heating, Ventilation, & Air Conditioning
ICAO	International Civil Aviation Organization
ICC	Initial Core Capability
IFB	Invitation For Bid
IP	Internet Protocol
IP	Ingress Protection
ISO	Isolator
KVM	Keyboard Video Mouse
LAN	Local Area Network
MIB	Management Information Base
MPDB	Main Power Distribution Board
MPS	Message Processing System
MRL	Maritime Rear Link
MSMQ	Microsoft Message Queue Server
MTBF	Mean Time Between Failure
NAVCOMMCEN	Naval COMMCEN
NB	No Break

NCI	NATO Communication and Information
NDN	National Defence Network
NGCS	NATO General Communication Services
NNEC	NATO Network Enabling Capability
OCR	Optical Character Recognition
OPCON	Operation Control
OSE	Open System Environment
OSI	Open System Interconnection
OTAM	Off the Air Monitoring
PABX	private automatic branch exchange
PFE	Purchaser Furnished Equipment
PSS	Power Supply Subsystem
PTFS	Precision Time and Frequency Standard
RAMT	Reliability, Availability, Maintainability & Testability
RLP	Rotatable Log Periodic
BGR	Bulgaria
RSC	Remote Supervisory and Control
RX	Receive
SATCOM	Satellite Communication
SB	Short Break
SDD	System Design Document
SDIP	SECAN Doctrine and Information Publications
SMTP	Simple Mail Transfer Protocol
SOW	Statement of Work
	Ship Shore Ship Buffer
STANAG	Standard Agreement
SUCOC	Succession of Command

SW	Software
TA	Target Architecture
TX	Transmit
VMSS	Voice Management Sub System
VSWR	Voltage Standing Wave Ratio
WS	Workstation