

Acquisition

Katharina.Schwarz@ncia.nato.int

Telephone: +32 (0)2 707 8591

Fax: +32 (0)2 707 8770

NCIA/ACQ/ASG/2015/1827

21 December 2015

Notification of Intent
Programme Management and Integration Capability (PMIC)

IFB-CO-14171-PMIC

€6,968,000

(estimated cost)

The goal of the contract is to engage an industrial partner that will support the NCI (NATO Communications and Information) Agency in the evolution and execution of a programme management and integration framework that will improve the coherence, change management, transparency, timeliness, quality, and interoperability of Bi-SC AIS (Bi-Strategic Automated Information System) & NGCS (NATO General Communication Services) programme and capabilities.

This capability will provide a single resource to support the management, governance, assurance, and control of the implementation of the Bi-SC AIS & NGCS Programme and its constituent projects.

The formal IFB is planned to be issued in February 2016 with a Bid Closing Date in May 2016. Contract Award is anticipated for fourth quarter 2016.

Contracting Officer: Ms Katharina Schwarz

E-mail: Katharina.Schwarz@ncia.nato.int

To : Distribution List

Subject : Notification of Intent to Invite Bids for International Competitive Bidding
Programme Management and Integration Capability (PMIC)
IFB-CO-14171-PMIC

Reference(s) : A. AC/4-D/2261 (1996 Edition)
B. AC/4-D/2261-ADD2 (1996 Edition)
C. AC/4(PP)N(2014)0068 BC-D(2014)0083 Capability Package 9C0150
Implementation Plan, dated 27 June 2014
D. AC/4(PP)D/27265-ADD5-REV1-FINAL

E. AC/4-DS(2015)0023

F. C-M(2002)49 – NATO Security Policy

1. In accordance with paragraph 6 of Reference A, notice is hereby given of the intent of the NATO Communications and Information Agency (NCI Agency), as the Host Nation, to issue an Invitation for Bid (IFB) for the provision of the Bi-SC AIS & NGCS Programme Management and Integration Capability (PMIC).
2. The scope of this project is included in serials OIS03096 under the Capability Package “Provide Implementation Authority (IA) Programme Management and Integration Capability” (Reference C). This PMIC capability will provide a single resource to support the NCI Agency with the management, governance, and control of the implementation of the Bi-SC AIS Programme and its constituent projects. The Bi-SC AIS Programme comprises the principle command and control and management information services for the NATO Command Structure and NATO Response Force (NRF). As the Implementation Authority for this programme, the NCI Agency is responsible for the procurement, delivery, and implementation of the Bi-SC AIS & NGCS, both as Host Nation for NATO Security Investment Programme (NSIP) projects, and in coordination with other Host Nations.
3. The goal of the contract is to engage an industrial partner that will support the NCI Agency in the establishment and execution of a programme management and integration framework that will improve the coherence, change management, transparency, timeliness, quality, and interoperability of Bi-SC AIS & NGCS capabilities. This contract requires a contractor workforce having diverse skills including programme management, military domain expertise, technical skills for managing and administering a complex integration environment. The PMIC contractor will assist the NCI Agency in carrying out its responsibilities as Implementation Authority for the programme, including:
 - Programme governance and assurance
 - Implementation planning and execution
 - Communications management and stakeholder engagement
 - Development and update of programme vision/target, blueprint, and reference, target and product architectures
 - Acquisition of systems and services
 - Integration and test management and facility maintenance
 - Design authority for the programme
 - Configuration and change management of requirements, development, and product baselines
 - Assessment of programme outcomes and benefits realisation
4. The NCI Agency has defined an overall programme and project management framework within which the PMIC will be implemented. This framework combines the Managing Successful Programmes and PRINCE2 project management methodology with the knowledge areas and best practices defined in the Project Management Institute’s Project Management Book of Knowledge and its Standard for Program Management. In addition, the NCI Agency intends to work with the PMIC contractor to implement a process improvement approach that will progressively increase the maturity of Bi-SC AIS & NGCS programme management and integration processes to deliver capabilities faster, with higher quality, and with greater efficiency. NCI Agency



also uses the ITIL framework to govern service delivery, and the Bi-SC AIS & NGCS programme execution must be coherent with ITIL.

5. The implementation of the Bi-SC AIS capability will be supported by two other Work Packages (WPs) which fall outside the scope of this procurement (Reference D):
 - a. Work Package 2: Provide COTS equipment for the PMIC. This portion will provide the Commercial-Off-The-Shelf (COTS) hardware and software elements required to maintain the PMIC functions, including the Integration Testbed and the procurement of the software maintenance support.
 - b. Work Package 3: Provide NCI Agency Internal Engineering Services for Programme Implementation Direction. This work package, obtained on a sole source basis from the NCI Agency, will cater for the internal engineering effort required to carry out its programme governance and implementation responsibilities.
6. A summary of the requirements of the PMIC project is set forth in Annex A to this letter. These requirements are being refined and detailed as part of the preparation for the proposed contract and may change.
7. The estimated cost for the services and deliverables included within scope of the intended contract is €6,968,000.
8. In accordance with Reference B, the not-to-exceed cost for bids submitted in response to the IFB shall be €8,710,000 (125% of the estimated investment cost described under paragraph 7), or the equivalent expressed in any other allowed currency calculated in accordance with the currency conversion prescriptions that will be expressed in the IFB.
9. This will be a single Firm Fixed Price contract with expected duration of 18 months from current scoped CP 9C0150, Serial OIS03096, with follow on one-year options for extension to the contract for an additional 3 years to be funded from upcoming CP 9C0150 addendum. No partial bidding will be allowed.
10. In accordance with reference E, the NCI Agency intends to use the International Competitive Bidding (ICB) Procedure. Bids received in response to the IFB will be evaluated through a Best Value approach as described in reference B. The successful bid pursuant to this IFB will be that bid which is deemed to offer the best value for money in accordance with the predefined bid evaluation criteria which will be detailed in the IFB as prescribed by the Best Value Procedures.
11. The formal IFB is planned to be issued in February 2016 with envisaged Bid Closing Date in May 2016 and Contract Award in Q4 of 2016.
12. Under separate correspondence following the release of this Notification of Intent, nominated bidders will be invited to attend a PMIC Industry Information Day, the purpose of which is to provide the latest available technical information and to give Industry a forum to ask preliminary questions. The NCI Agency intends to hold this Industry Day in February/March 2016, and further details will be communicated to nominated bidders directly.



13. In accordance with the IC authorization granted at references D and E, Bidders are to note that the prospective contract for provision of the PMIC programme will include an exclusion clause preventing the winning bidder and its subcontractors from participating in any other projects of the Bi-SC AIS and NGCS programmes.
14. Pursuant to paragraph 6 of Reference A, National Representatives are kindly requested that the NCI Agency be provided with a Declaration of Eligibility, **not later than 1 February 2016**, of qualified and certified firms which are interested in bidding for this project. In addition to the certifications required under this NOI, the Declarations of Eligibility shall include the following information for each of the nominated firms: **name of the firm, telephone number, fax number, e-mail address, and Point of Contact**. This information is critical to enable smooth communication with prospective Bidders and should be sent to the following address:

NATO Communications and Information Agency
 Boulevard Leopold III, 1110 Brussels, Belgium
 Attention: Katharina Schwarz – Senior Contracting Officer

Tel: +32 (2) 707 8591

Fax: +32 (2) 707 8770

E-mail: Katharina.Schwarz@ncia.nato.int

15. It is emphasized that requests for participation in this competition received directly from individual firms cannot be considered.
16. Bidders will be required to declare a bid validity of twelve (12) months from closing date for receipt of bids, supported by a bid guarantee of €300,000 (three hundred thousand EUR). Should the selection and award procedure exceed the Bid Closing Date by more than twelve (12) months, firms will be requested to voluntarily extend the validity of their bids and Bid Guarantee accordingly. Bidders may decline to do so, withdraw their bid and excuse themselves from the bidding process without penalty.
17. National Authorities are advised that the IFB Package will be NATO UNCLASSIFIED. However, execution of the proposed contract will require unescorted access and work of contractor personnel at NATO Class II security areas and in accordance with reference G, all personnel in the project team of the winning bidder will be required to hold individual security clearances of "NATO SECRET" on the effective contract date. Only companies maintaining appropriate personnel clearances will be able to perform the resulting contract.
18. The reference for this Invitation for Bid is IFB-CO-14171-PMIC, and all correspondence concerning it should reference this number.
19. Your assistance in this procurement is greatly appreciated.

FOR THE GENERAL MANAGER

A handwritten signature in blue ink that reads 'P. Scaruppe' with a stylized flourish at the end.

Peter Scaruppe

Director of Acquisition



**Distribution for Official Notification of Intent to Call for Bids
IFB-CO-14171-PMIC**

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Denmark	1
Estonia	1
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Iceland	1
Italy	1
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Norway	1
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Annex A: Summary of PMIC Project Requirements

IFB-CO-14171-PMIC

1 Background

1.1 References

- 1.1.1 Bi-SC Capability Package (CP) 9C0150, "Core Information Services For Command And Control" 8 January 2014
- 1.1.2 Investment Committee Software Intensive Projects – Final Report by the Task Force, AC/4-N(2014)0034, 31 October 2014
- 1.1.3 The Alliance C3 Strategy, C-M(2014)0016, 7 Mar 2014
- 1.1.4 AC/322-D(2008)0031 REV1-AS1, NATO CIS Policy and Directive to Support Capability Management, 4 May 2009
- 1.1.5 NCI Agency CONOPS 2014, dated 20 December 2013.
- 1.1.6 ACMP – 2009 – Guidance on Configuration Management, AC/327-D(2013)0004, 3 April 2013

1.2 Origin of Military Requirements

- 1.2.1 The Bi-SC AIS is the information system which supports the Command and Control business process when exercised in a NATO Command in either a static or deployed situation. The Bi-SC AIS is logically one information network but physically is divided into several networks operating at different security levels. The Bi-SC AIS Information System nodes are connected together by the NATO General Communication System (NGCS). The Bi-SC AIS uses the NGCS as its backbone for connectivity among commands.
- 1.2.2 The Bi-SC AIS is further supported by a number of Capability Packages stating the Military Requirement for Core and Functional Services and describing the resources which are needed to implement and maintain them. Taken together these approved Capability Packages (CPs) describe and programme more than one hundred projects which are identified as necessary to the implementation of the Bi-SC AIS.
- 1.2.3 In addition, the current IT infrastructure operated by the NCI Agency is based on the assets and facilities of its predecessor organizations and those assets that were previously owned by the NATO Command Structure headquarters. The NCI Agency is now in the process of developing a detailed plan for transforming the existing infrastructure to a consolidated, standardized and centrally managed one under IT Modernization (ITM) funded from CP 9C0150 (Reference 1.1.1).
- 1.2.4 Taking a component-based architectural approach to avoid the risks associated with so called "big bang" implementations, the Strategic Commands have allocated the overall operational requirements for the Bi-SC AIS into a relatively large number of

projects. Each project delivers an essential set of capabilities – such as geographic information services – but also depends upon the deliverables from other projects – such as user workstations, formal messaging, or functional services – to provide the fielded operational functionality.

- 1.2.5 NCI Agency and the Commands have always recognized that the consequence of this component-based approach to programme implementation comes at the cost of additional management and coordination at the programme level (of the relationship between projects) and of additional technical integration to ensure that the products from the various projects will work together in the context of the overall system. To simplify operation and reduce operating costs, the various networks follow a common technical architecture and are constructed to the maximum extent possible from identical hardware and software components.
- 1.2.6 As pointed out in the Software Intensive Projects Final Report (Reference 1.1.2), the component based approach is moved forward by refining an incremental approach to enable iterative development and delivery support and maximizing reuse of components.
- 1.2.7 While the individual deliverables from these projects have been of value, it has become clear to all programme stakeholders that decomposing these cross-cutting tasks into separate projects results in a significant loss in coherence and transparency and a risk of not delivering the expected programme outcomes. In particular, the separate projects did not address all of the essential tasks, such as configuration management, requirements management, and integration testing.
- 1.2.8 In addition, NATO has authorized investments, such as the Ballistic Missile Defence (BMD), Air Command and Control System (ACCS), Deployable Communication and Information Systems (DCIS) and Alliance Ground Surveillance (AGS) programmes, each of which has functional and performance specifications that will impact on numerous elements of the Bi-SC AIS & NGCS. The coherent implementation of these capabilities requires a level of management and technical integration beyond the scope of any single existing Bi-SC AIS & NGCS project and must be handled at a programme level.
- 1.2.9 For these reasons, the NCI Agency established the PMIC project to deliver, alongside NCI Agency resources, a single, coherent capability encompassing all key cross-cutting programme management and integration responsibilities. This capability is hereafter referred to as the Programme Management and Integration Capability (PMIC) dealing all the program aspects of Bi-SC AIS and NGCS.

2 Operational Requirements

2.1 Programme Management

- 2.1.1 NCI Agency is referred to as NATO's principal C3 Capability Development & ICT Service Provider in Delivery of C3 Capabilities and the Provision of ICT Services to provide standardized enterprise-wide capabilities and services to all NATO Enterprise entities, distinct only when explicitly justified and agreed.
- 2.1.2 However, given the NATO Enterprise approach, it is expected that the distinct roles (Operational Authority - OA, Transformation Authority - TA, Implementation Authority –

IA and Service Provisioning Authority - SPA) will be revised in the future. As referred to in Alliance C3 Strategy (Reference 1.1.3) the following goals are proposed to guide the activity of the stakeholders in the NATO nations:

- 2.1.2.1 Applying NATO established procedures and standards and using NATO products whenever beneficial.
- 2.1.2.2 Promoting standards, keeping them stabilized as much as possible.
- 2.1.2.3 Acknowledging that an advisory framework for NATO-led operations turns into a mandatory framework to be adhered to by nations when joining the federated network implemented for such an operation.
- 2.1.2.4 Proactively exploiting the efficient use of common resources and opportunities.
- 2.1.2.5 Identifying and measuring quantifiable indicators of interoperability.
- 2.1.3 The Software Intensive Projects Final Report identified around 30 different but interdependent root causes of the issues broadly categorised as relating to requirements, regulations and risk. The Bi-SC AIS Programme Management is recognizing the root causes and adopts the following guiding principles identified in the report:
 - 2.1.3.1 Deliver Early and Often
 - 2.1.3.2 Incremental and Iterative Development and Testing
 - 2.1.3.3 Risk Management
 - 2.1.3.4 Rationalized Requirements
 - 2.1.3.5 Flexible/Tailored Processes
 - 2.1.3.6 Knowledgeable and Experienced Software Project Workforce
- 2.1.4 Being the corporate knowledge of the Bi-SC AIS program; PMIC will act as a hub for providing the specialized area of expertise on Software Intensive Projects acquisition and management.
- 2.1.5 The Bi-SC AIS Programme management aims to maintain a management structure to execute the management and direction of the programme in the view of the goals identified in Alliance C3 Strategy. At the most senior level, the NATO C3 Board oversees the Bi-SC AIS as one of a number of major NATO C3 programmes.

2.2 Programme Implementation

- 2.2.1 While the concept of Capability Based Planning is key to the identification of required system functionality, the concept of Service Oriented Architectures (SOAs) and a unified communications networking infrastructure is key to meeting those requirements for NATO Network Enabled Capability (NNEC) and are an essential part of the overall NNEC implementation strategy. SOAs provide a flexible modular approach for implementing system functional requirements in the form of services and a unified networking makes sure that those services can be accessed and utilized.

- 2.2.2 The strategy for developing future C3 capabilities responds to the need for a flexible, modular approach for meeting future Consultation and C2 requirements. It will allow definition of one Bi-SC AIS generic architecture, with an implementation that can vary according to business need in different command environments: Crisis Response operations (CRO), NATO Response Force (NRF), Deployable Communication and Information Systems (DCIS) or Static Commands. It will function in and across multiple security classification domains: NU, NR, NS, MS, although not all information or functions will necessarily, of course, be available in all domains.
- 2.2.3 At the same time, the Bi-SC AIS and NGCS programmes will be realised by more than 150 projects, each fulfilling partial sets of the requirements. Historically, the projects have operated fairly autonomously, each project holding its own scope, responsibilities and budget. SOAs are based on the principle of shared use of resources and services and therefore require alignment and coherent design across projects, as well as strict adherence to standards. This high level design spans the whole area of Bi-SC AIS C3 functions and information needs. The shared use of services implies the need for shared governance and change management, and causes mutual dependencies in planning, requirements (functional and non-functional), testing and O&M activities. The shared use of resources requires a coherent, concerted approach to capacity planning, authorization and authentication, and service management.
- 2.2.4 Therefore, an implementation approach is required that strengthens and further develops a number of aspects during the course of this planning period:
- 2.2.4.1 The high level design, the service model (based on the Service taxonomy from ACT and service strategy) is still incomplete; an evolving AIS Service implementation architecture needs to be created
- 2.2.4.2 The current per-project planning approach needs to become more concerted and consolidated; a roadmap to componentization and SOA needs to be developed
- 2.2.4.3 Governance processes geared for shared use of services and resources must be implemented
- 2.2.4.4 Important parts of the enabling infrastructure are not in place yet
- 2.2.4.5 Agreed standards in the area of SOA are not always available, adherence to these standards by projects is not enforced
- 2.2.4.6 Coordination with other programmes on technical and planning matters needs to be improved
- 2.2.5 The Bi-SC AIS Implementation Office is responsible for facilitating coherent, effective and integrated Bi-SC information services fulfilling the Minimum Military Requirements in a timely manner. The following activities will be performed by the implementation office:
- 2.2.5.1 Maintain, update, and extend the scope of the programme and project support infrastructure;
- 2.2.5.2 Support the planning of the programme and projects;
- 2.2.5.3 Support the monitoring and control of the programme and projects;

- 2.2.5.4 Ensure the programme and projects have the required technical and business integrity;
- 2.2.5.5 Provide a repository for the experience and knowledge gained; and
- 2.2.5.6 Audit the use of the programme and project support infrastructure.
- 2.2.6 The PMIC contract will support the following management and technical services

PMIC Service Catalogue

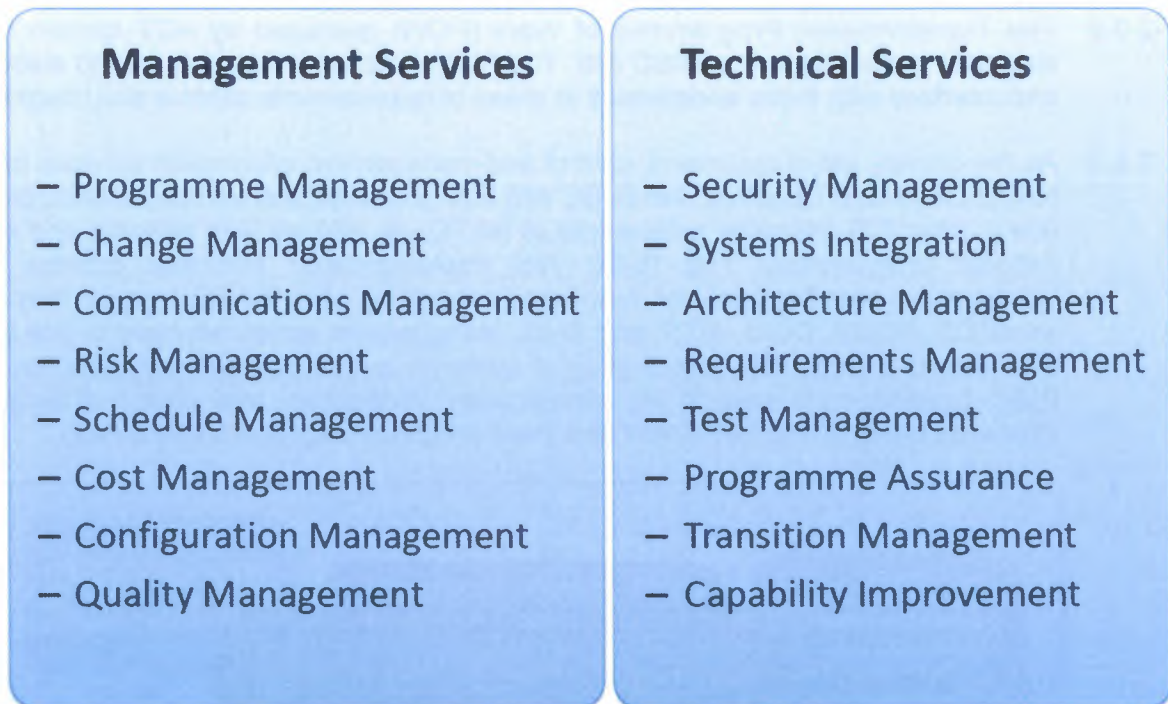


Figure 1: Programme Services

- 2.2.7 PMIC is the centre and information hub of the programme. All information, communication, monitoring and control activities for the programme are coordinated through PMIC, operating as a programme and project support office (PPSO), and will support the following short term activities:
 - 2.2.7.1 Managing dependencies between projects
 - 2.2.7.2 Responsibility for ensuring that programme activities comply with NATO and NCI Agency policies, guidelines, and processes
 - 2.2.7.3 Coordinating with other Management Authorities.
 - 2.2.7.4 Coordinating with related programmes
 - 2.2.7.5 Provide day-to-day programme management
 - 2.2.7.6 Plan and monitor programme implementation with the support of the PMIC

2.3 Interfaces with Existing Programmes and Processes

2.3.1 The Bi-SC AIS Implementation business process interfaces with the business processes of:

- 2.3.1.1 Bi-SC AIS Operations as carried out by Allied Command Operations (ACO);
- 2.3.1.2 Bi-SC AIS Maintenance and Support as carried out by NCI Agency; and
- 2.3.1.3 NATO C4I Transformation and Capability Management as carried out by Allied Command Transformation (ACT).

2.3.2 The Transformation Programmes of Work (POW) managed by ACT contain many elements pertaining to the Bi-SC AIS. The PMIC function will be required to elaborate and interface with these endeavours in areas of requirements capture and integration.

2.3.3 As the primary set of command, control and management information services for the NATO Command Structure, the Bi-SC AIS has interfaces and interdependencies with every other CIS-intensive programme in NATO, as well as with national and multi-national programmes. The Bi-SC AIS Implementation business process also interoperates with the business processes supporting other NATO programmes such as ACCS, NGCS, DCIS, AGS, and BMD. Management structures have or are being established to direct the coordination of common issues between programmes. The PMIC function must support the identification, verification, and control of technical interfaces between the Bi-SC AIS and these programmes. (See figure below).

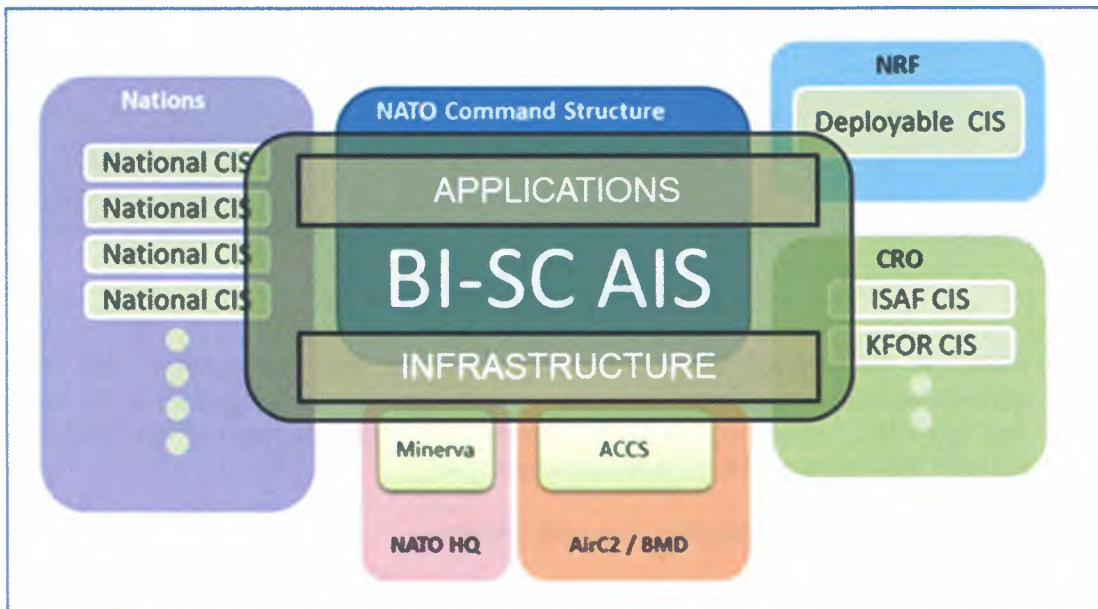


Figure 2: Bi-SC AIS and other NATO Programmes

2.3.4 This means that the programme must support the specification, implementation, verification, and control of these interfaces and interdependencies. It is to be noted that this integration with other programmes requires not only a point to point approach, but also a strong coordination with the Air and the Missile Defence COI as it is demanded by the inter-programme scope.

2.3.5 In the following years, the number and complexity of these interfaces and interdependencies will increase significantly. The management and integration support of the PMIC will be essential in their management.

2.4 NCI Agency governance functions for the Bi-SC AIS and NGCS Programmes

2.4.1 Given the complex set of stakeholders, policies, and resourcing arrangements within which the Bi-SC AIS and NGCS programmes must be implemented, its governance involves an equally complex set of committees, boards, working groups, panels and other bodies involving NATO and national organizations.

2.4.2 As defined in the NATO CIS Directive in Support of Capability Management (Reference 1.1.4), the primary responsibility of the Implementation Authority is to coordinate the procurement, delivery and implementation of C3 capabilities, systems and services. Specifically, the IA is assigned the following tasks:

2.4.2.1 Architecture development and system design

2.4.2.2 Implementation planning and execution

2.4.2.3 Acquisition management and coordination

2.4.2.4 Oversight of life-cycle management

2.4.2.5 System integration management

2.4.3 Additionally the NCI Agency is also the Service Provisioning Authority for the Bi-SC AIS and NGCS programmes with the following responsibilities:

2.4.3.1 Accept C3 capabilities, systems and services to assume responsibility for service provision

2.4.3.2 Provide secure end-to-end information processing and exchange services

2.4.3.3 Detailed architectural planning and implementation of services

2.4.3.4 Service delivery management (including service continuity management and SLA)

2.4.3.5 Undertake Configuration Control of fielded systems (Jointly with ACO)

2.4.3.6 Fault management

2.4.3.7 Security management

2.4.4 The C3 Capabilities Management Board (C3CMB) provides overall programme direction. This board is co-chaired by the SHAPE Assistant Chief of Staff (ACOS) J6 and the SACT Assistant Chief of Staff (ACOS) C4I. Programme Steering and Management Groups; also co-chaired by representatives from the two SCs, monitor and guide programme execution through regularly-scheduled meetings. The supporting management structure is given in below figure:

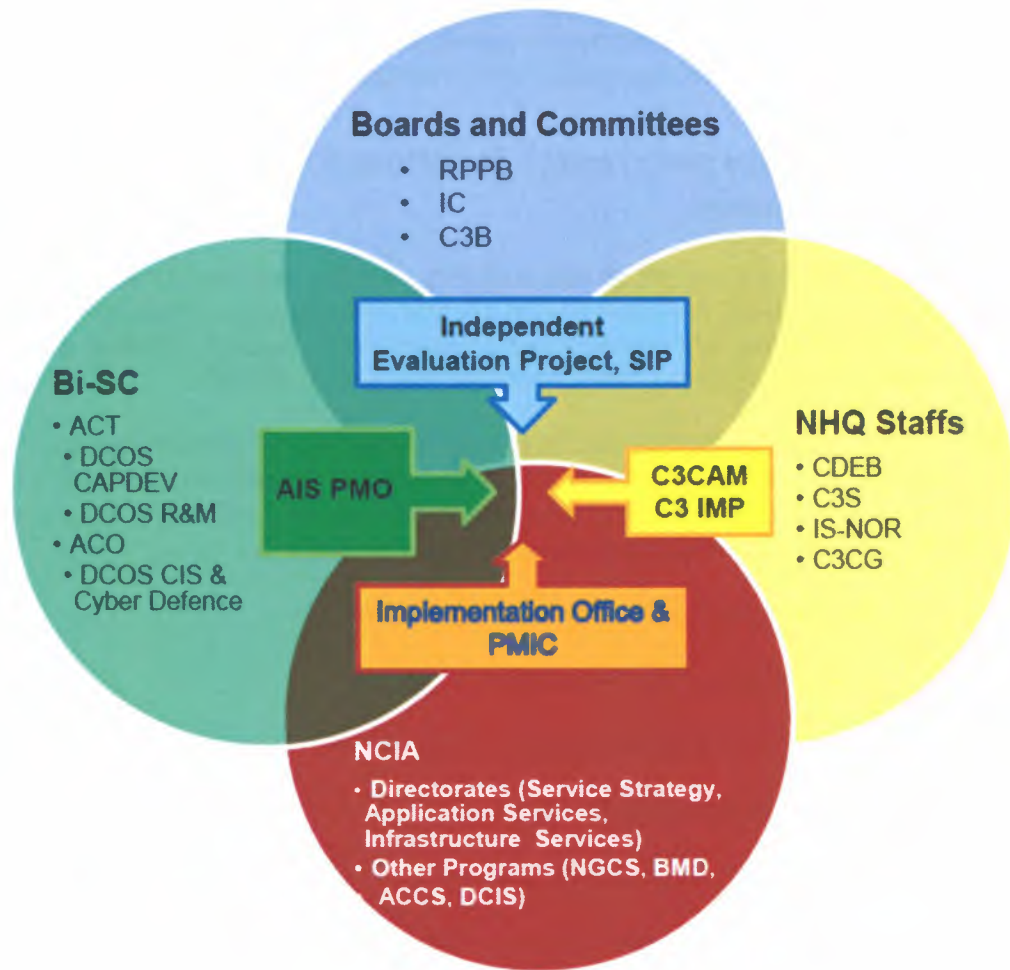


Figure 3: Programme Governance Structure

2.4.5 Bi-SC AIS PMO (Programme Management Office) being the Strategic Commands counterpart acting as hub to stakeholders and Independent Evaluation and Performance Assessment Capability project (IPEAC) providing unbiased assessment for CP 9C0150 are other vehicles to build the lifecycle support of complex programme elements.

2.5 Existing Capabilities

2.5.1 The PMIC was originally created through project 2001/5IS03027 in Capability Package 5A0050/9B0020 and has been operating since 2011 through 3 one year execution stages. The execution stages after 2013 were funded from Capability Package 9C0150.

2.5.2 Following authorisation of the Work Package 1 contract award in 2011, a strong core programme and project management support function was built which established a set of programme planning capabilities that forecasts implementation activities, technological developments, changes in the Purchaser's organization, and capability delivery. In the second execution stage, the processes were put in place and the integration facility started to operate as complementary to the verification and validation activities.

- 2.5.3 During the third Execution Stage, these capabilities were extended to improve the ability of the implementation office to manage the interdependencies among projects, the alignment of the programme with strategic changes such as the restructure of Allied Command Operations and the establishment of the NCI Agency, and the implementation of the service oriented architecture (SOA) for the Bi-SC AIS. The fourth and fifth execution stages focused on the growth of the workload emphasizing to increase the efficiency of the Software Intensive Projects by controlling costs and implementing proactive management. Equally a proactive approach to programme coherence is showing its effect in the start-up of the projects. The 6th execution stage (Jan 2016 – June 2017), which is the last execution stage before re-competition, is planned as a stabilization and transition stage.
- 2.5.4 The current Bi-SC AIS Implementation Office consists of 18 full-time contractors, in two geographic locations, and three NCI Agency Full Time Equivalent (FTEs) for the positions of Implementation Head and Technical Director and Programme Test Manager (funded by internal engineering services of the project). Internal Engineering Services (IES) is also used for the provision of further subject matter expert support through NCI Agency internal resources to Bi-SC AIS and NGCS programmes on a case-by-case basis.

2.6 Transition to New PMIC Contractor

- 2.6.1 It would be unrealistic to expect that the new PMIC contractor could become fully operational and effective immediately upon award of the contract. A transition period of 6 months is envisaged during which the contractor will establish and begin to operate the functions described in paragraphs above. During this period the key personnel of the previous PMIC contractor will support the transition.
- 2.6.2 All of the functions to be carried out by the PMIC interrelate, but from a transition standpoint, some are clearly dependent upon others. The PMIC would need, for example, to establish a solid integration requirements baseline through its Configuration Management and Change Control function before it could finalize its Integration Testing function.
- 2.6.3 A series of interim milestones, through which the full-scale execution would be tracked, would be agreed between the NCI Agency and the PMIC contractor. A fully functional PMIC will be required to be operating within six months after the effective date of contract.
- 2.6.4 The transition to the new PMIC contractor will be performed with 6 months overlap between the previous and new implementation contractor.

2.7 Constraints

- 2.7.1 The implementation of an effective approach to integration of the Bi-SC AIS and NGCS programmes must be achieved within the following key constraints:
- 2.7.1.1 The scope of approved Capability Packages and authorized NSIP projects.
- 2.7.1.2 Existing NATO procurement procedures.

- 2.7.1.3 Existing NATO configuration management and quality assurance policies and procedures.
- 2.7.1.4 Existing NCI Agency and Bi-SC AIS management directives and procedures.
- 2.7.2 The proposed approach must not assume or require that these constraints can or will be changed.

3 Main Programme Services

3.1 Programme Governance

3.1.1 Overall Description

- 3.1.1.1 Bi-SC AIS projects are already managed according to the PRINCE2 project management methodology, and this will continue under the Implementation Office. The Implementation Office will provide the project team with guidance on the business case, tolerances, quality standards, reporting requirements, and other aspects of project planning, execution, and control by producing the Project Brief.
- 3.1.1.2 The purpose of the Programme Governance service area within the Bi-SC AIS and NGCS programmes is demonstrated by the following four principle objectives:
 - 3.1.1.2.1 Manage both upwards and downwards. The programme needs clear direction from above and careful control and management downwards.
 - 3.1.1.2.2 Maintain senior level input and engagement.
 - 3.1.1.2.3 Establish the Programme Implementation Office to provide direction and support spanning all relevant business areas.
 - 3.1.1.2.4 Deliver capabilities within a recognized life cycle.
- 3.1.1.3 The services provided under this Contract shall develop and support this framework. There is a clear division between work to be performed within the scope of individual projects and programme management and governance.

3.1.2 Dependency Management.

- 3.1.2.1 Identification and management of the dependencies among projects and on activities outside the programme is a key function of programme management. In support of dependency management, the activities to be performed are:
 - 3.1.2.1.1 Identify each critical dependency.
 - 3.1.2.1.2 Establish need dates and plan dates for each critical dependency based on the project schedule.
 - 3.1.2.1.3 Identify the commitments to address each critical dependency and document the commitments made by those responsible for providing the work product and those receiving the work product.

- 3.1.2.1.4 Prepare and maintain a Dependency Structure Matrix identifying project interdependency, interdependencies with other programmes, and critical commitments.
- 3.1.2.1.5 Track critical dependencies and commitments and recommend corrective actions, as appropriate.
- 3.1.3 Programme Monitoring & Control.
 - 3.1.3.1 In support of programme monitoring and control, the following activities will be performed:
 - 3.1.3.1.1 Establish, document, and maintain a continuing capability to monitor and control the programme and its projects.
 - 3.1.3.1.2 Apply the programme and project governance framework to monitor and control the programme and its projects through:
 - 3.1.3.1.3 Change management processes.
 - 3.1.3.1.4 Defined project tolerances.
 - 3.1.3.1.5 Establish, document, and maintain a process for quarterly progress reviews of each portfolio of projects within the programme.
 - 3.1.3.1.6 Organize and act as the secretariat for Portfolio Reviews.
 - 3.1.3.1.7 Recommend when Project Health Checks should be performed.
 - 3.1.3.1.8 Review and provide an independent assessment of project exception reports.
 - 3.1.3.1.9 Perform, record, and report on the results of Project Health Checks as directed by the Purchaser.
 - 3.1.3.1.10 Monitor the effectiveness of project tolerances and identify improvements in their definition and application to improve management visibility or increase the efficiency of monitoring and control processes.
- 3.1.4 Programme Benefits Management
 - 3.1.4.1 The programme will develop and maintain a benefits management strategy that describes how:
 - 3.1.4.1.1 Benefits will be identified and measured.
 - 3.1.4.1.2 Benefits will be traced to project outputs.
 - 3.1.4.1.3 Realization of benefits will be reviewed and reported.
 - 3.1.4.2 Benefits Identification. The activities to be performed in this context are:
 - 3.1.4.2.1 Derive, from strategic guidance and objectives, a set of core benefits to be obtained from the programme as a whole.

- 3.1.4.2.2 Identify direct benefits for projects.
- 3.1.4.2.3 Describe how direct benefits can be observed and measured.
- 3.1.4.2.4 Identify the operational, support, or political owner of a benefit.
- 3.1.4.3 Benefits Traceability. The Programme shall establish and maintain for designated projects a strategic objectives chain, which traces the project's outputs to the expected operational change, the outcome resulting from that change, the direct benefits, and end benefits, and the associated Alliance strategic objectives.
- 3.1.4.4 Benefits Review. The Programme shall organize periodic benefits reviews involving programme stakeholders, in which programme and project benefits, progress toward their realization, and plans for future efforts will be reviewed and updated as necessary.
- 3.1.4.5 Benefits Reporting. The Programme shall establish and maintain a process for reporting on progress towards benefits realization as inputs to quarterly and annual programme reports.
- 3.1.4.6 The Bi-SC AIS programme is supposed to achieve the capability to quantitatively manage by providing measurement and analysis support to stakeholders. This activity includes:
 - 3.1.4.6.1 Capture cost, schedule, and performance data from projects as the basis for quantitative analysis.
 - 3.1.4.6.2 Propose and establish relevant metrics.
 - 3.1.4.6.3 Support capacity and resource planning.
 - 3.1.4.6.4 Develop metrics and collect performance data to support performance management and capability improvement planning.
- 3.1.5 Business Relationship Management
 - 3.1.5.1 Although each project has unique scope, the majority of Bi-SC AIS & NGCS projects can be covered by a few basic models based on the type of outcomes expected to be delivered and the activities required to produce them.
 - 3.1.5.2 Based on experience within the Bi-SC AIS programme so far, the following project models can be identified:
 - 3.1.5.2.1 Consultancy/Support project. This type of project delivers analysis, subject matter expertise, or other type of support on a completion or level of effort basis for a period of less than three years.
 - 3.1.5.2.2 COTS Procurement. This type of project procures a fixed amount of COTS hardware and software and delivers and installs it at one or more sites.
 - 3.1.5.2.3 System Integration. This type of project involves procurement and installation of a number of COTS components that must be integrated to deliver the required capability. A limited amount of development may be involved.



- 3.1.5.2.4 System Development. This type of project requires development of one or more components and integration with COTS components to deliver the required capability, but only a single production baseline is planned.
- 3.1.5.2.5 Spiral Development. As used within NATO, spiral development is more accurately defined as incremental/evolutionary acquisition. This type of project requires development of a number of components and integration with COTS components, but the nature of the requirements and the complexity of the capability exceed the scope of a single development cycle and multiple increments of the production baseline are planned.
- 3.1.5.3 Business Relationship can be simplified by identifying the appropriate model for a project.
- 3.1.5.4 The Programme shall establish, document, and maintain a set of project models as a means of establishing the necessary quality standards, tolerances, and monitoring and control levels.

3.2 Change Management

- 3.2.1 The change control function will address changes whether their origins are internal or external to the programme. As the Bi-SC AIS & NGCS evolves into a services oriented architecture, many changes will come in the form of new capabilities being delivered by individual projects. PMIC will capture these changes, provide an impact assessment to the Programme Management — including an identification of the other projects affected by the change, and then transfer the change to individual project-level CM baselines when authorized.
- 3.2.2 However, this change control function will also greatly improve the NCI Agency's ability to deal with the relationship between the Bi-SC AIS & NGCS and other programmes such as BMD, AGS, DCIS, and ACCS. PMIC's change control process will also significantly improve the management of interfaces between the Bi-SC AIS & NGCS and other programmes.
- 3.2.3 This service area has two principle objectives:
 - 3.2.3.1 Build a capability for the programme to efficiently deal with anything that arises by having processes, capabilities, and responsibilities in place to respond.
 - 3.2.3.2 Accurately and comprehensively capture, assess, and assign responsibility for any changes to the programme and its projects.

3.3 Communications Management

- 3.3.1 Communications management services area is based on two principle objectives:
 - 3.3.1.1 Fostering active communication, discussion, and documentation of activities within the Implementation Office and its project teams.
 - 3.3.1.2 Providing stakeholders with timely, accurate, and comprehensive information on the programme's status, plans, risks, issues, outcomes, and benefits.

3.4 Risk Management

- 3.4.1 Risk is a measure of the potential inability to achieve overall project objectives within defined cost, schedule, and technical constraints. Risk management is a proactive event-based approach to continuously assess "what might go wrong" and set activities into action to control, minimize or even eliminate the risk. Risks are typically defined with parameters such as the probability and likelihood of failing to achieve a particular outcome, the consequences and impacts of failing to achieve that outcome, and thresholds to determine if the status of a risk requires action.
- 3.4.2 Considerations that will be taken into account when defining the risk management strategies:
- 3.4.2.1 Scope of the risk management effort.
 - 3.4.2.2 Methods and tools to be used for risk identification, risk analysis, risk mitigation, risk monitoring, and communication.
 - 3.4.2.3 Risk mitigation techniques to be used, such as prototyping, simulation, alternative designs, or evolutionary development.
 - 3.4.2.4 Definition of risk measures to monitor the status of the risks.
 - 3.4.2.5 Time intervals for risk monitoring or reassessment.
- 3.4.3 This service area has two principle objectives:
- 3.4.3.1 Pro-actively identify risks, assess impacts, and implement responses to decrease the probability of negative events and increase the probability of positive outcomes.
 - 3.4.3.2 Identify, characterize, and develop responses to systemic risks within NSIP processes and information services projects.

3.5 Schedule Management

- 3.5.1 This service area has three principle objectives:
- 3.5.1.1 Provide clear visibility into programme and project schedules and progress.
 - 3.5.1.2 Quickly and effectively identify and enable the Implementation Office to mitigate schedule dependencies among projects.
 - 3.5.1.3 Keep overall programme implementation progress on track.

3.6 Cost Management

- 3.6.1 This service area has one principle objective:
- 3.6.1.1 Ensure programme staff and stakeholders maintain clear visibility into the financial status of all activities managed under the Implementation Office.

3.7 Configuration Management

- 3.7.1 The PMIC will establish a comprehensive Configuration Management (CM) and Control System for the Bi-SC AIS & NGCS within the policy and guidelines set out in the ACMP 2009 (Reference 1.1.6) and execute those CM activities which must exist at the programme level.
- 3.7.2 The focus of CM activity at the programme level is integration between the different projects and between the Bi-SC AIS & NGCS and external systems such as DCIS, ACCS and BMD. The PMIC will be required to:
- 3.7.2.1 Implement a standard CM process for all Bi-SC AIS & NGCS implementation projects.
- 3.7.2.2 Establish and carry out a configuration and change control process to manage the identification, assessment, authorisation, and transfer of change requests between the programme and its active projects.
- 3.7.2.3 Carry out the same process in support of programme-level changes, whether introduced from other programmes such as BMD or ACCS or from external sources such as industry, NATO policies and standards, or Capability Packages.
- 3.7.2.4 Establish and maintain a set of configuration baselines against which change requests can be assessed and controlled. At a minimum the following programme level baselines are required:
- 3.7.2.4.1 A complete requirements baseline compiled from the System and User Requirements Specifications of individual projects (i.e., a compilation of the CM requirements baselines maintained at project level).
- 3.7.2.4.2 An integration requirements baseline derived from analysis of project requirements as described in the "Requirements Management" task below.
- 3.7.2.4.3 An integration architecture baseline derived from design activity at the project level which records in interface, standards and service views, the proposed solutions to integration requirements identified in the integration requirements baseline.
- 3.7.2.4.4 A delivered product baseline at the programme level compiled from the delivered product baselines of individual projects.
- 3.7.2.5 Change control is perhaps the most important of all the functions to be performed by the PMIC. Indeed, Managing Successful Programmes defines programme management itself as "the delivery of change in the form of outcomes, and thus benefits... a framework for implementing business strategies, policies and initiatives, or large-scale change, within an overall vision of the desired outcome."
- 3.7.2.6 Through its change control function, the PMIC will identify, assess, and, when authorized, control changes to the Bi-SC AIS & NGCS programme by translating them into appropriate baseline changes. These might be changes to programme or project baselines through its CM process, changes to the programme master schedule, or changes to programme standards and procedures.
- 3.7.2.7 This service area has the following principle objectives:

- 3.7.2.7.1 Provide consistent and responsive CM across the Bi-SC AIS and NGCS programmes and its projects.
- 3.7.2.7.2 Ensure the accuracy and integrity of managed programme and project baselines.

3.8 Quality Management

3.8.1 This service area has the following principal objectives:

- 3.8.1.1 Provide measurable evidence that accurate and reproducible results are delivered that meet customers quality expectations across the Bi-SC AIS and NGCS programmes and its Projects.
- 3.8.1.2 Establish a continuous process of quality improvement.
- 3.8.1.3 Quality reports will be provided to individual project managers and stored in a programme level repository. Quality reports will be raised for action at the programme level if programme milestones are deemed to be adversely impacted.
- 3.8.1.4 This service will involve:
 - 3.8.1.4.1 Review of Project Initiation Documents, TBCEs, statements of work, and project specifications for conformance with standards.
 - 3.8.1.4.2 Attendance at and reporting on all project management meetings.
 - 3.8.1.4.3 Periodic quality audits of Bi-SC AIS projects.
 - 3.8.1.4.4 Review of key project deliverables.
 - 3.8.1.4.5 Participation in and reporting on selected project testing events.

3.9 Security Management

3.9.1 This service area has two principle objectives:

- 3.9.1.1 Ensure that security services and mechanisms are planned, designed, and implemented in a consistent and cost-effective manner across the Bi-SC AIS and NGCS programmes.
- 3.9.1.2 Ensure that services developed by projects comply with NATO security requirements and are accredited and activated in a timely manner.

3.10 Systems Integration

3.10.1 This service area has two principle objectives:

- 3.10.1.1 Ensure the capabilities delivered through the Bi-SC AIS and NGCS programmes are specified, acquired, and verified in a consistent manner that enables interoperability and reduces life cycle costs.

- 3.10.1.2 Provide clear and consistent guidelines so that Bi-SC AIS & NGCS contractors design, implement, test, and document the capabilities they produce in a manner that also enables interoperability and reduces life cycle costs.

3.11 Architecture Management

3.11.1 This service area has two principle objectives:

- 3.11.1.1 Provide the programme with a comprehensive and accurate set of architectural data to support programme governance, requirements management, and systems integration.
- 3.11.1.2 Provide projects with procedures, tools, and guidance to enable consistent and effective use and generation of architectural data and documentation.

3.12 Requirements Management

3.12.1 This service area has two principle objectives:

- 3.12.1.1 Improve the quality, consistency, and interoperability of programme services by improving the quality and consistency of programme and project requirements documentation.
- 3.12.1.2 Reduce the time and effort necessary to elicit and document project requirements.

3.13 Test & Testbed Management

3.13.1 Test Management service area has two principle objectives:

- 3.13.1.1 Enable the projects under the programme to perform operationally realistic tests that reduce the risk of delays in service transition and performance and interoperability problems in operation.
- 3.13.1.2 Ensure that test activities throughout the programme—whether by the Purchaser, the Contractor, or other suppliers—are performed in a consistent manner to a common standard of quality.

3.13.2 The intention is:

- 3.13.2.1 to ensure the availability of an integration test environment, centrally supported for all the projects, so that the projects can perform their tests during the design and build phase. This test environment will set-up the environment in compliance with the project's contract in particular for the system's versions.
- 3.13.2.2 to ensure the availability of the NCI Agency reference environments where the project will be tested before they can be deployed on the live environment. This environment will replicate the live environment with a level of fidelity that allows the NCI Agency to perform the tests related to change management process.

3.14 Programme Assurance

- 3.14.1.1 This service area has following principle objectives:
- 3.14.1.2 Ensure that programme deliverables meet their specified requirements—in other words, that services were built the right way.
- 3.14.1.3 Demonstrate that the programme's delivered capabilities fulfil their intended use—in other words, that the right services were built.
- 3.14.1.4 Integrate with the internal agency verification and validation practices managed through IV&V Service Line to deconflict the overlapping tasks and resources. The detailed definition of these activities will be defined in detail later in Statement of Work of this service area inline with the when agency IV&V directives.

3.15 Transition Management

- 3.15.1 This service area has two principle objectives:
 - 3.15.1.1 Ensure the smooth transition into operations of services implemented by the Bi-SC AIS and NGCS programmes.
 - 3.15.1.2 Foster close partnership among NCI Agency and ACO to enable continuous improvement in the quality, efficiency, and cost-effectiveness of programme services.

3.16 Capability Improvement

- 3.16.1 This service area has three principle objectives:
 - 3.16.1.1 Foster the continuous improvement of Bi-SC AIS and NGCS programmes and project management capabilities.
 - 3.16.1.2 Enable the Bi-SC AIS and NGCS programmes to be perceived by its stakeholders as an enabler and source of added value.
 - 3.16.1.3 Encourage the development of the Bi-SC AIS and NGCS programmes as a learning organization.