

**INVITATION FOR BID**

**IFB-CO-115049-NCOP2**

**THE IMPLEMENTATION OF THE NATO COMMON  
OPERATIONAL PICTURE INCREMENT 2**

**BOOK II, PART IV  
STATEMENT OF WORK (SOW)**



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## 1. INTRODUCTION

### 1.1. Introduction to NCOP-2

- 1.1.1. NATO Common Operational Picture (NCOP) as a capability is built to improve the decision making process by enabling rapid and intuitive selection of relevant information for a particular Area of Interest (AOI), mission or task. It mainly provides joint situational awareness, based on received information from NATO and national functional services, collated in a mission or AOI Common Operational Picture (COP), which is made available again to the NATO commands and national forces as both an information system implemented in the eligible NATO commands and a COP Service for all other entities not entitled for any specific implementation, which may have their own Command and Control (C2) information system that relies on a NATO service to provide the COP. As such, NCOP significantly improves the decision making process by enabling rapid and intuitive selection of relevant information for a particular AOI, mission or task.
- 1.1.2. The initial increment of NCOP (NCOP-1) reached its Initial Operational Capability (IOC) in July 2014 and the Final System Acceptance (FSA) in September 2015. SHAPE declared Operational Acceptance of last version 1.1.14 in January 2016. NCOP-1 is the version currently used by the NATO Command Structure (NCS) and response Force (NRF) cycles.
- 1.1.3. NCOP-2 as an incrementally developed solution, draws on the feedback of operational commands for providing improvements. Continuous feedbacks from recent exercises and formal 'lessons learned' are incorporated into the requirements for NCOP-2. This approach to continuous improvement ensures a high degree of effectiveness in supporting NATO Joint Forces Commands (JFC) and single commands. This collaborative approach also delivers the NATO Campaign Synchronization needed when carrying out actions authorised by the North Atlantic Council (NAC) directed by the Supreme Allied Commander Europe (SACEUR) and executed by the JFCs.
- 1.1.4. NCOP-2's use by NATO Commands impacts NATO decision superiority and mission success. This will be achieved by the effective deployment of the NCOP solution and its effectiveness is critical for the Commander's Decision Superiority and ultimately the success of a campaign. The current solution needs to further develop in order to meet the new requirements identified by Commands. In addition to the incremental improvements identified, Strategic-level COP requirements have been assessed as being important to ensure that the higher level of commands can make an effective use of the information provided by the JFCs. Finally, capturing architectural and technical aspects is fundamental to the future solution web based platform to ensure that NCOP-2 can operate in the NATO business environment of the future.

- 1.1.5. In addition to the existing NCOP-1 functionality, NCOP-2 future requirements entail functional improvements of NCOP-1, including incorporating data from all available NATO Command and Control Information System (C2IS), improvement of dynamic representation of tracks and improvement of the representation of time; additional functionalities such as specific strategic-level functionalities e.g. analysis tools, statistical tools, aggregated representation of force laydown and presentation tools; additional integration with functional services e.g. Alliance Ground Surveillance (AGS), Chemical, Biological, Radiological, and Nuclear Functional Services (CBRN-FS) and Cyber Defence-FS; and a further integration with existing Core Services such as CoreGIS.

## **1.2. Purpose of the Contract**

- 1.2.1. The purpose of this Contract is to implement NCOP-2 to NATO sites (core and optional) which are described in the Section 1.5.2 below.
- 1.2.2. The overall delivery of NCOP-2 capability consists of:
- a) Deliver NCOP-2 core functionality comprising the activities for developing, delivering and initially supporting the NCOP-2 core functionality, which is equal to the NCOP-1 functionality.
  - b) Augment IT infrastructure for core sites comprising the augmentation of the hardware capacity of all installation nodes that have been identified as authorised core sites, in order to support the NCOP-2 requirements.
  - c) Implement NCOP-2 to NATO sites with the high level objectives stated in §1.3. NCOP-2 implementation to additional optional sites and NRF comprising the roll-out, planning, creating, and delivering of the training programme, activation, initial support and Operational Testing & Evaluation (OT&E) of NCOP-2 to the additional sites and NRF.
  - d) Augment IT Infrastructure for additional sites and NRF comprising augmenting the IT infrastructure for any sites not included in the initial core sites.

## **1.3. High-level objectives for the NCOP-2 Implementation project**

- 1.3.1. NCOP-2 implementation entails the high level objectives:
- a. To plan and carry-out the installation of NCOP-2;
  - b. To carry out data migration from NCOP-1 to NCOP-2 for each organisational node ;
  - c. To identify and analyse the training needs and prepare the training material ;

- d. To activate each authorised organisational node and deliver training to the users ;
- e. To provide initial support and conduct OT&E to the core organisational nodes of NCOP-2 which have been authorised ;

#### **1.4. Requirements of NCOP-2**

- 1.4.1. The requirements for the implementation of NCOP-2 are stated in §3 and §4.
- 1.4.2. Changes shall be made through the Change Management process.

#### **1.5. High Level Description of Work packages**

##### 1.5.1. WP4: Implementation at core sites:

- 1.5.1.1. This WP comprises activities to engineer the training and training materials, install the system to the core authorised sites, to activate the organisational nodes, to deliver the training, and to conduct the OT&E to the core organisational nodes of NCOP-2 which have been authorised.

##### 1.5.2. WP7: Implementation at additional sites:

- 1.5.2.1. This WP comprises activities to install the system to additional sites, to activate organisational nodes, to deliver training, and to conduct OT&E. This work package is in the bidding scope, but not yet authorised for implementation.

##### 1.5.3. BMD WP (costed/not evaluated option): Implementation at BMD sites:

- 1.5.3.1. This WP comprises activities to install the system to BMD sites and to activate organisational nodes. This work package shall be costed, but not yet authorised for implementation and will not be evaluated.

#### **1.6. Locations**

##### 1.6.1. Purchaser's Facilities

- 1.6.1.1. Unless otherwise specified in the text, the definition of the Purchaser's Facility defines the following locations:
  - NCI Agency in Brussels, Belgium (referred to as NCI Agency Brussels);
  - NCI Agency in Casteau, Belgium (referred to as NCI Agency Mons);
  - NCI Agency in The Hague, The Netherlands (referred to as NCI Agency The Hague);

1.6.1.2. Apart from main Purchaser's facilities, the Purchaser operates Customer Support Units at the main operational sites<sup>1</sup> of NATO.

#### 1.6.2. Installation Sites

1.6.2.1. NCOP-2 installations will be done on the ITM and Deployable Communication and Information Systems (DCIS) infrastructure which will be augmented according to the NCOP-2 needs. The implementation at each location includes installations on multiple domains (i.e., NATO S\*cret, NATO Unclassified, and Mission S\*cret) and for various organisations with different configurations depending driven by the number of users for that installation. An Installation Node at a Site under the Contract is defined with its location, classification domain (e.g., NATO Unclassified, Mission S\*cret, etc.), environment (e.g., Data Centre, Reference), and configuration.

1.6.2.2. The users on static environment will be supported by installations on ITM.

1.6.2.3. NATO deployed forces' CIS support is provided by the Deployable Communication and Information Systems (DCIS) capability, supported by the NCISG. A newly deployed HQ could be supported by the DCIS (case of a new theatre) or any other service provider (including NCI Agency which will then create a local CSU).

1.6.2.4. The NCOP-2 implementation includes the installations to Mission Anchor Functions (MAF) within Mission Information Rooms enabling the mission specific functions being performed during mission execution by the users at static environment.

#### 1.6.2.5. Reference Environments

1.6.2.5.1. NCOP-2 implementation includes installations for Reference environments on the following domains:

- NATO S\*cret domain ;
- NATO Unclassified domain ;

1.6.2.5.2. ITM project delivers the following data centres:

- Data Centre 1 (DC1), in Mons, Belgium ;
- Data Centre 2 (DC2), in Lago Patria, ITA ;
- Data Centre 3 (DC3), Brussels, Belgium with expected delivery after 2021 ;

#### 1.6.3. Core Organisational Nodes

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<sup>1</sup> Site is used a generic term to represent an installation site or organizational node.

1.6.3.1. Table 1-1 provides a list of core organisational nodes within the scope of this Contract.

*Table 1-1 - Core Organisational Nodes*

Nr	Abbreviation	Name	Location
1	SHAPE (CCOMC & BMDCC)	SHAPE Comprehensive Crisis and Operations Management Centre and BMD Coordination Cell, Mons	BEL
2	JFC-BS HQ	HQ Allied Joint Force Command Brunssum	NLD
3	JFC-NP HQ	HQ Allied Joint Force Command Naples	ITA
4	LANDCOM HQ	HQ Allied Land Command, Izmir	TUR
5	AIRCOM HQ	HQ Allied Air Command, Ramstein	DEU
6	MARCOM HQ	HQ Allied Maritime Command, Northwood	GBR
7	JFTC HQ	Joint Force Training Centre, Bydgoszcz	POL
8	JWC HQ	Joint Warfare Centre, Stavanger	NOR
9	JTF HQ STB	Joint Task Force HQ (standby)	Deployed
10	JTF HQ PRP	Joint Task Force HQ (prep)	Deployed
11	NCIA	NCI Agency Reference Environment	NLD

1.6.3.2. The Contractor shall deliver the scope of WP4 for both baselines.

1.6.4. Additional organisational nodes

1.6.4.1. Table 1-2 – Additional provides a list of organisational optional nodes for this Contract.

*Table 1-2 – Additional organisational nodes (optional)*

Nr	Abbreviation	Name	Location
1	JTF HQ	Joint Task Force HQ ( MJO1)	Deployed
2	JLSG HQ STB	Joint Logistics Support Group HQ (standby)	Deployed
3	JLSG HQ PREP	Joint Logistics Support Group HQ (prep)	Deployed
4	JLSG HQ MJO1	Joint Logistics Support Group HQ (MJO1)	Deployed
5	LCC NRF1	Land Component Command (NRF1)	Deployed
6	LCC NRF2	Land Component Command (NRF2)	Deployed
7	LCC MJO1	Land Component Command (MJO1)	Deployed
8	MCC NRF1	Maritime Component Command (NRF1)	Deployed
9	MCC NRF2	Maritime Component Command (NRF2)	Deployed
10	MCC MJO1	Maritime Component Command (MJO1)	Deployed
11	JFACC NRF1	Joint Force Air Component Command (NRF1)	Deployed
12	JFACC NRF2	Joint Force Air Component Command (NRF2)	Deployed
13	JFACC MJO1	Joint Force Air Component Command (MJO1)	Deployed
14	SOCC NRF1	Joint Force Air Component Command (NRF1)	Deployed
15	SOCC NRF2	Joint Force Air Component Command (NRF2)	Deployed
16	SOCC MJO1	Joint Force Air Component Command (MJO1)	Deployed



17	AGS MOB	AGS Main Operating Base	ITA
18	CCOMC	SHAPE Comprehensive Crisis and Operations Management Centre	BEL

1.6.4.2. The Contractor shall deliver the scope of WP7 only for baseline 2.

1.6.5. ANNEX A provides information on the physical scope of NCOP-2 Implementation.

1.6.6. BMD Nodes

1.6.6.1. Table 1-3 – BMD nodes (costed, not evaluated) provides a list of sites where NCOP BMD will be activated once the NCOP BMD product baseline will be authorized to operate.

*Table 1-3 – BMD nodes (costed, not evaluated)*

Number	Abbreviation	Name	Location
1	SHAPE (CCOMC & BMDCC)	SHAPE Comprehensive Crisis and Operations Management Centre and BMD Coordination Cell, Mons	BEL
2	JFC-BS HQ	HQ Allied Joint Force Command Brunssum	NLD
3	JFC-NP HQ	HQ Allied Joint Force Command Naples	ITA
4	LANDCOM HQ	HQ Allied Land Command, Izmir	TUR
5	AIRCOM HQ	HQ Allied Air Command, Ramstein	DEU
6	MARCOM HQ	HQ Allied Maritime Command, Northwood	GBR
7	CAOC U	Allied Combined Air Operations Centre, Uedem (Backup)	DEU
8	CAOC T	Allied Combined Air Operations Centre, Torrejon (Backup)	ESP
9	JWC HQ	Joint Warfare Centre, Stavanger	NOR
10	JTF HQ	Joint Task Force HQ	
11	JFACC	Joint Force Air Component Command, Ramstein	DEU
12	JFLC	Joint Force Land Component Command, Izmir	TUR
13	JFMC	Joint Force Maritime Component, Northwood	GBR
14	REFSYS	NATO Communications and Information Agency	NDL/BEL
15	REFSYS UAT	NATO Communications and Information Agency	NDL/BEL

1.6.6.2. The NCOP-2 BMD installations will occur for each node on three (3) baselines every two (2) years apart.

## 1.7. Implementation Approach

- 1.7.1. NCOP-2 will be deployed using a spiral approach, which involves two baselines (NCOP-2 Baseline 1 (BL1) and NCOP-2 BL2). The first product baseline is not expected to be available before mid-2022. The second one being delivered within one (1) year after the first one in a stepped-increase manner.
- 1.7.2. The identification of the training needs and the design and development of training material will follow the Bi-Strategic Directive 75-7 on Education and Individual Training (Bi-SCD 75-7). An initial training requirements analysis which was conducted in 2018 is provided in ANNEX B to establish an estimate of work. The Contractor shall revise the training requirements during Training Design Review and Site Surveys.

## 1.8. Assumptions and Constraints

### 1.8.1. Assumptions:

- 1.8.1.1. The Purchaser will provide the system which is authorized to operate (accredited and ready-to-install).
- 1.8.1.2. Existing versions of required documentation can be re-used and adapted if suitable (see Section 4).
- 1.8.1.3. Each installation site and organisational node shall have its own acceptance milestone for each BL.
- 1.8.1.4. The User and System Administrator Manuals and Computer Based Training (CBT) will be delivered via the Software Development project of NCOP-2 and is not within the scope of this Contract. However, any update that will be triggered from the implementation activities (e.g. installation, configuration, settings, operational baseline etc.) shall be under the responsibility of the WP4 Contractor.
- 1.8.1.5. The System Administrator training will be provided by the Software Development project of NCOP-2, and is not in the scope of this Contract.
- 1.8.1.6. The Contractor shall also be responsible for the installation of patches to each BL. The Contract shall assume 2 patches per BL.

### 1.8.2. Constraints:

- 1.8.2.1. The Contractor shall plan the installation and the activation of each organisational node in accordance with the operational constraint of the command.

- 1.8.2.2. The Contractor shall apply up to two patches on the NCOP BL installed and activated. The patches will cover any blocking deficiency (operational use).

## **1.9. Organisation of the Statement of Work**

- 1.9.1. The Statement of Work describes in detail the exact work to be done within the Contract and is organised as described below.
  - 1.9.1.1. Section 1 describes the objectives for the NCOP-2 implementation project, the purpose of the contract, the Work Packages and Phases of implementation, constraints and assumptions and an overall structure for the work to be done.
  - 1.9.1.2. Section 2 provides a list of Documents applicable for the scope of the contract.
  - 1.9.1.3. Section 3 describes the Project Management processes to be used in running the Contract.
  - 1.9.1.4. Section 4 describes the Technical processes and activities to be performed to deliver the Contract scope.
  - 1.9.1.5. Section 5 describes the formal Milestones, Deliverables for each milestone and the Reviews to be conducted at these milestone events.
  - 1.9.1.6. Section 6 describes the Resources and Labour Categories to be used in the implementation.
  - 1.9.1.7. Section 7 provides the list of acronyms used in this document.
  - 1.9.1.8. ANNEX A provides the details about the physical scope of NCOP-2.
  - 1.9.1.9. ANNEX B is the outcome of the initial training requirements analysis for the NCOP-2 implementation conducted in 2018.
  - 1.9.1.10. ANNEX C details the responsibilities, planning and procedures supporting the definition, delivery and related management of NATO E&IT.
  - 1.9.1.11. ANNEX D provides the list of documentation to be provided to the Contractor.

## **2. REFERENCE DOCUMENTS**

### **2.1. Compliance Documents**

SH/PLANS/J7/PLL/JC/15-309689/1, 5000/TPX-0210/TT-150592/Ser: NU0058, Bi-SC Education and Individual Training Directive (E&ITD) 075-007, 10 Sep 2015, NU.

### **2.2. Separate Annexes to the Statement of Work**

- A. Physical scope of NCOP-2, Annex A.
- B. Initial training requirements analysis for the NCOP-2 implementation conducted in 2018, Annex B.
- C. Education and Individual Training Directive 075-007, Annex C
- D. NCOP-2 List of Purchaser-Furnished Information (PFI), Annex D

## **3. PROJECT MANAGEMENT**

### **3.1. Introduction**

- 3.1.1. This section outlines the Project Management Task Area for the NCOP-2 Implementation project.
- 3.1.2. The goal of the Contractor's project management shall be, wherever possible, to eliminate problems and to ensure that those problems that do occur are identified early, maintained in RAID log, assessed accurately, and resolved quickly in partnership with the Purchaser.

### **3.2. Project Management Methodology**

- 3.2.1. By default, the Contractor shall apply the PRINCE2 project management methodology to the planning, delivery and control of services under this Contract. A Project Management methodology equivalent to PRINCE2 (e.g. by the Project Management Institute (PMI)) is also acceptable.

### **3.3. General Requirements**

- 3.3.1. This section outlines the general requirements for the NCOP Contract.
- 3.3.2. Personnel Security
  - 3.3.2.1. The Contractor shall ensure that all Contractor and Subcontractor personnel that shall work on a NATO site or have access to NATO S\*CRET information and facilities shall have, at a minimum, a valid NATO S\*CRET clearance as required by NATO policy.
  - 3.3.2.2. The Contractor shall provide proof that each team member is in possession of a valid NATO S\*CRET security clearance prior to Contract Award.
  - 3.3.2.3. The Contractor shall process all Contractor and Subcontractor personnel through NATO security at each site, adhering to their procedures for clearances, to obtain security badges for the duration of the on-site activities.
- 3.3.3. Purchaser Responsibilities
  - 3.3.3.1. The Purchaser's Project Manager (PM) will act as the Purchaser's representative and will be the primary interface between the Contractor and Purchaser after the Effective Date of Contract (EDC).
  - 3.3.3.2. The Purchaser's Project Manager will be supported by specialists in certain areas who may, from time to time, be delegated to act on the Project Manager's behalf in their area of expertise.

- 3.3.3.3. Neither the Project Manager, the integrated project team, nor any other NATO personnel may make changes to the terms and conditions of the Contract but may only provide the Purchaser's interpretation of technical matters. All changes to the Contract will be made through the Purchaser's contracting authority only.

### 3.4. Purchaser Team

- 3.4.1. Project Manager: The Purchaser Project Manager (PPM) shall act as the Purchaser's representative and shall be the primary interface between the Contractor and Purchaser after the Effective Date of Contract (EDC). The PPM shall be supported by specialists in certain areas who may, from time to time, be delegated to act on the Project Manager's behalf in their area of expertise. The PPM reports to the NCOP Project Board.
- 3.4.2. Contracting Officer: The Purchaser Contracting Officer is the only person in the project who can sign any commercial contracts, instructions or transactions. The PPM, or any other NATO personnel may not make changes to the terms and conditions of the Contract. They may only provide the Purchaser's interpretation of technical matters. All changes to the Contract shall be made through the Purchasing Contracting Officer only.
- 3.4.3. Technical Lead: The Purchaser Technical Lead (PTL) is a knowledgeable member of the Purchaser team who can act as the technical liaison between the Contractor's technical team and any technical staff on the NATO side.

### 3.5. Contractor Team

- 3.5.1. The Contractor shall provide all necessary manpower and resources to conduct and support the management and administration of operations in order to meet the objectives of the project, including taking all reasonable steps to ensure continuity of Contractor's personnel assigned to work on this project.
- 3.5.2. The following members of the Contractor team are key personnel for this project and are named the Core Team.
- 3.5.2.1. **Project Manager.** The Contractor shall designate a Contractor Project Manager (CPM), who shall direct and co-ordinate the activities of the Contractor's project team. The CPM shall be the Contractor's primary contact for the PPM and shall conduct all major project design, test, and review meetings. CPM shall meet the qualifications specified in §6.2.
- 3.5.2.2. **Implementation Lead.** The Contractor shall designate a Contractor Implementation Lead (CIL) for the project. The CIL shall lead the analysis, planning, and coordination of all implementation and (OT&E) activities. CIL

shall meet the qualifications of a senior technical labour category (e.g., Senior Engineer, Senior Systems Engineer) specified in §6.4.

- 3.5.2.3. **Training Lead.** The Contractor shall designate a Contractor Training Lead (CTL) for the project. The CTL shall lead the analysis, design, development of all training material and the training delivery activities. CTL shall meet the qualifications of a senior training support labour category specified in §6.6.

### **3.6. Operational User Involvement**

- 3.6.1. The User Community is involved in the project throughout the different phases and in different roles.
- 3.6.2. The Contractor shall involve (e.g., through participation in working groups reviews, workshops, Formal Reviews, questionnaires) appropriate operational users for input to, review of the project deliverables throughout the life span of the Contract work (i.e., from EDC to FSA).
- 3.6.3. The operational users are expected to participate in the following activities:
- Training Needs Analysis (TNA) ;
  - Training Material Review (TMR) ;
  - Training Delivery;
  - User feedback during Operational Test and Evaluation (OT&E) ;
- 3.6.4. The Contractor shall arrange operational user participation through the PPM or PTL.

### **3.7. Implementation and Training Working Groups**

- 3.7.1. The Contractor shall establish an Implementation Working Group (IWG) and a Training Working Group (TWG) to coordinate and organise activities involving the Purchaser, the Users, and any SMEs on the respective domains.
- 3.7.2. These Working Groups shall include the following representation:
- The Contractor's Project Manager ;
  - The Implementation Lead (in case of IWG) or the Training Lead (in case of TWG) of the Contractor ;
  - The Purchaser's Project Manager, Technical Lead, and any selected experts ;
  - Any Subject Matter Expert on the domain as required ;
- 3.7.3. The composition of IWG and TWG shall be adjusted before each of their Workshops to meet the goals of activities and deliverables.
- 3.7.4. The Contractor shall insure that each time IWG and TWG address respective requirements, planned or on-going activities, issues and deliverables in its

respective scope by collaboration between Users, Purchaser and the Contractor.

**3.7.5. IWG and TWG Workshops**

- 3.7.5.1. IWG and TWG shall meet under formula of workshop. The aim of each workshop shall be to address issues prior to formal coordination within the current milestone and providing recommendation for the next and future milestones.
- 3.7.5.2. Attendance in the IWG and TWG workshops is solely at the discretion of the Purchaser and shall not be limited by the Contractor.
- 3.7.5.3. The contractor shall organize an IWG or TWG workshop either in a form of a standard meeting on a location selected by the Purchaser, or via a remote meeting. The selection is to be approved by the Purchaser.
- 3.7.5.4. Remote meetings and questionnaires can be used to increase efficiency for the Users community to participate in the workshop session.
- 3.7.5.5. In case of a remote meeting, the Contractor shall make sure the duration of the workshop session not to last more than two (2) hours. In the case where the agenda requires more time, several sessions shall be organised in accordance with the Purchaser.
- 3.7.5.6. The Contractor shall capture and manage all issues raised at IWG and TWG workshops in the project Issue Log.
- 3.7.5.7. The formal acceptance of the deliverables from the current milestone shall be done using the formula of Formal Review, as described in §3.19.4.
- 3.7.5.8. The Contractor shall organize at least twice IWG and TWG Workshops (at least one of them being standard physical meeting) per Working Group and respective milestone, before the planned Formal Reviews.
- 3.7.5.9. The Contractor shall provide the agenda and updated artefacts from Schedule of Supplies and Services (SSS) at least one week before each TWG for the Purchaser to be able to analyse the progress and the content before the meeting.

**3.8. Purchaser Furnished Items (PFIs)**

**3.8.1. Infrastructure**

- 3.8.1.1. The Purchaser will provide access to the NATO DC and DCIS infrastructure.



- 3.8.1.2. The Purchaser will provide access to the integration test-bed facilities in order to prepare for the implementation of NCOP-2 at its premises in The Hague (The Netherlands).
- 3.8.1.3. As such, the integration facility, will provide reference operating systems/networks having NATO security settings and also NCOP-2 applicable information objects. Further it will provide access to those Bi-SC AIS Core Services on which the NCOP-2 capability is to depend or interface with.
- 3.8.1.4. The Purchaser will provide the Contractor a Project Website on which all relevant unclassified project documentation shall be maintained. This will allow the Purchaser, Contractor teams to share content, collaborate and work efficiently online as a team (see §3.14).
- 3.8.2. Software
  - 3.8.2.1. The Purchaser will provide NCOP-2 Product Baseline after inclusion in the Approved Fielded Product List (AFPL).
  - 3.8.2.2. The Purchaser will provide the Contractor the licenses for the activation of the off-the-shelf software required unless otherwise specified (e.g., the Contractor purchases the software licenses on behalf of the Purchaser).
  - 3.8.2.3. The Purchaser will provide access to the Collaborative Working Environment (i.e., NATO Software Factory) of the NCOP-2 Product Baseline in order to support the Contractor to prepare the implementation deliverables.
  - 3.8.2.4. The Purchaser will provide the CBT Material which will be used to complement the Training Materials to be delivered by the Contractor.
- 3.8.3. Purchaser provided documentation.
  - 3.8.3.1. The Purchaser will provide the documentation listed in ANNEX D for the Contractor to be used during the execution of the contract.
- 3.8.4. Other Purchaser Support
  - 3.8.4.1. The Purchaser will support the Contractor in the provision of the required databases, or access to production systems, and facilities. However, Environment Preparation, Environment Management, Data Preparation, Data Migration, installation and all other activities on the instances, including backup and other operational activities are the responsibility of the Contractor.
  - 3.8.4.2. The Purchaser will provide the required infrastructure/platform and support (such as information about the security settings) required for the instances scoped in this Contract. However, it is Contractor's responsibility to establish

any additional environment for testing and preparation for the installation and other implementation activities.

- 3.8.4.3. The Purchaser will provide the relevant resources for the purpose of knowledge transfer to the Contractor about gaps that may exist. This knowledge transfer will be carried out in the workshop or course format before the Implementation Design Review milestone.
- 3.8.4.4. The Purchaser is responsible that NCI Agency security experts will produce the necessary security documentation, both in the form of updates of existing sets of documents where applicable, and in the form of new sets of documents development where necessary.
- 3.8.4.5. The Purchaser will provide access to samples of existing databases and other data export formats to support the development of representative data for purposes of training.
- 3.8.4.6. The Purchaser will provide access to NATO Support Organisation through documentation, procedure, and incident management system, and Centralised Service Desk.

### **3.9. Co-ordination with Other NATO Projects**

- 3.9.1. The NATO CIS environment will be under continual development by other NATO projects that are being implemented in parallel with NCOP-2.
- 3.9.2. The Purchaser will inform the Contractor and provide more detailed information concerning the changes in the operational or technical environment that may emerge as a result of these projects.
- 3.9.3. The Contractor shall advise the Purchaser on the cost, schedule, and performance impacts of such changes on the project. Assessments requiring in-depth analysis shall be addressed as separate activities under a Work Package.

### **3.10. Project Management Plan**

- 3.10.1. The Contractor shall establish, provide and maintain a Project Management Plan (PMP) which shall describe how the Contractor shall implement the totality of the project, including details of the project control that shall be applied.
- 3.10.2. The PMP shall identify all major Contractor operating units and any Subcontractors involved in the development of the NCOP-2 Implementation and a description of the portion of the overall effort or deliverable item for which they are responsible.

- 3.10.3. The PMP shall cover all aspects of the project execution, 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.
- 3.10.4. The PMP shall be sufficiently detailed to ensure that the Purchaser is able to assess the Contractor plans with insight into the Contractor's plans, capabilities, and ability to satisfactorily implement the entire project in conformance with the requirements as specified in this SOW.
- 3.10.5. The PMP shall describe how the various project management processes (Configuration Management, Risk Management, and Quality Assurance etc.) are integrated, either via a tool set and/or internal project management practices.
- 3.10.6. The PMP shall describe the relationship between the PMP and subordinate plans: System Implementation Plan, and Training Plan.
- 3.10.7. The PMP shall describe how Project Website shall be used to maintain communication between the Purchaser and the Contractor (see §3.14).
- 3.10.8. The PMP shall cover at least the following areas:
  - 3.10.8.1. Project Definition
  - 3.10.8.2. Vision. This section describes the vision of the Contractor for the delivery of this Contract.
  - 3.10.8.3. Objectives. This section lists the objectives for the project.
  - 3.10.8.4. Project scope. This section defines the breakdown of the project such as Work Packages, main tasks etc.
  - 3.10.8.5. Major Deliverables. This section describes the main deliverables of the project.
  - 3.10.8.6. Constraints. This section describes the constraints that are imposed by the Statement of Work or by the Contractor's own processes or approach.
  - 3.10.8.7. Assumptions. This section lists all the assumptions the Contractor shall be working under.
  - 3.10.8.8. Dependencies. This section lists all the internal and external dependencies for the project, including the Purchaser Furnished Items the Contractor will be depending upon.

- 3.10.8.9. Critical Success Factors. This section defines the high-level business objectives, success criteria for these objectives and the measurement methods or metrics for these criteria.
- 3.10.8.10. Acceptance Criteria. This section shall list all the deliverables and the acceptance criteria for them. However, the details shall be captured in individual Product Descriptions for these deliverables (as defined in PRINCE2).
- 3.10.9. Project Approach and Guiding Principles
  - 3.10.9.1. Project Approach. This section describes how the project would be executed, as per PRINCE2.
  - 3.10.9.2. Methods and Best Practices. This section describes the methods and best practices to be used within the project.
  - 3.10.9.3. Tools. This section describes the tools to be used for the delivery within the project.
- 3.10.10. Project organization
  - 3.10.10.1. Internal structure, including a project organizational diagram.
  - 3.10.10.2. Roles and responsibilities of each organizational unit.
  - 3.10.10.3. Key personnel, their qualifications, and their responsibilities.
  - 3.10.10.4. Organizational boundaries between the project organization and the parent and subcontracted organizations.
- 3.10.11. Project management processes
  - 3.10.11.1. Project start-up, including staffing, basis of cost and schedule estimates, and project infrastructure.
  - 3.10.11.2. Project control, including monitoring, reporting, and change management of work packages.
  - 3.10.11.3. Issue management, including the identification, reporting, assessment, and logging of project issues.
  - 3.10.11.4. Communications management to describe the methods for communication, reporting, meetings, the plans for internal and external communications, including the contribution to Project's Website, the maintenance and use of the content, Project Status Reports and all other communications with the Purchaser.

- 3.10.11.5. Risk management, including the Contractor's process for risk identification, assessment, mitigation, monitoring, and reporting.
- 3.10.11.6. Change Management, including the handling of change requests, the change control process to be utilised etc.
- 3.10.11.7. Purchaser involvement via Formal Reviews, Implementation Working Group Workshops, Training Working Group Workshops, (in) formal meetings, reporting, modification and change, implementation, verification, approval, acceptance and access to facilities.
- 3.10.11.8. The PMP shall describe how Contractor will establish and use quality management programme, including quality assurance of work processes, internal verification and validation, Formal Reviews and audits.
- 3.10.11.9. The PMP shall define the major quality checkpoints that will be implemented while executing the project and the quality process to be used at each checkpoint.
- 3.10.11.10. The PMP shall cite any references used in the quality management, such as methodologies, tools or best practice material.
- 3.10.11.11. The PMP shall identify the organization and responsibilities of the quality assurance team and its relation to the project team.
- 3.10.11.12. If sub-contracted quality resources are used, the PMP shall describe the controls and processes in place for monitoring the sub-Contractor's work against agreed timelines and levels of quality.
- 3.10.12. Risk Management Strategy
  - 3.10.12.1. Aligned with the guidance described in §3.15.
- 3.10.13. Issue Resolution Strategy
  - 3.10.13.1. Aligned with the guidance described in §3.15.
- 3.10.14. Annexes.
  - 3.10.14.1. Product Breakdown Structure (PBS), as described in §3.11.
  - 3.10.14.2. Work Breakdown Structure (WBS), as described in §3.12.
  - 3.10.14.3. Project Master Schedule (PMS), as described in §3.13.
  - 3.10.14.4. Risks, Assumptions, Issues, Decisions (RAID) Log, as described in §3.15.
  - 3.10.14.5. Sample Change Request Form and Change Log, as described in §3.17.3

3.10.14.6. Quality Plan, as described in §3.18.2.

3.10.14.7. Quality Log, as described in §3.18.2.

3.10.14.8. Lessons Learned Log, as described in §3.16.1

3.10.14.9. Sample Project Highlight Report (PHR), as described in §3.19.7.

3.10.15. Key Products and Milestones

3.10.15.1. The Contractor shall clearly identify in the PMS all Milestones identified in this SOW.

3.10.15.2. Milestones are the certain events that are held to provide visibility to system-wide issues, synchronise the management and engineering perspectives and verify that the goals of the project have been achieved.

3.10.16. Acceptance of Deliverables

3.10.16.1. At each milestones or as defined in the PMS, the Purchaser will determine the level of acceptance of the deliverables or services. This will result in partial or full payment associated with the payment milestones.

3.10.16.2. Partial acceptance may be the result of lower level quality or quantity of the deliverable as originally planned. For example, quality of deliverables are poor. The quality/quantity will be done during the Milestones assessment.

3.10.17. The approval of the PMP by the Purchaser signifies only that the Purchaser agrees to the Contractor's approach in meeting the requirements. This approval in no way relieves the Contractor from its responsibilities to meet the requirements stated in this Contract. The requirements of the Contract supersede any statement in the PMP in case of any conflict, ambiguity or omission.

3.10.18. The Contractor shall ensure that the PMP remains current throughout the duration of the Project to reflect the actual state of the Contractor's organisation and efforts, and maintain a current copy on the Project Website.

### **3.11. Product Breakdown Structure (PBS)**

3.11.1. For the purpose of this contract, the deliverables are split into two categories: management products and specialist products. Management products are all contract deliverables and PFIs covered under the Project Management activities in Section 2. Specialist products are all other deliverables and PFIs in this Contract.

3.11.2. The Contractor shall establish and maintain product-based planning which shall include a product description of all products of the project, a project PBS.

- 3.11.3. The PBS shall describe the hierarchical structure that breaks down a final product into its constituent sub-products. The PBS shall distinguish between management products and specialist products.
- 3.11.4. The PBS shall describe the products to a sufficient level of detail to understand what is needed to build the final product and to clarify and identify all necessary work for the creation of the final product. The PBS shall be used to identify the work packages in the Project Work Breakdown Structure.
- 3.11.5. Each Product in the PBS shall have a Product Description that is sufficiently detailed to understand the purpose and function of the product and the level of quality required of the product. The revised PMP reviewed in the PMR milestone shall have a PD for all of the products included in NCOP-2 Implementation.
- 3.11.6. The Contractor shall not change the PBS without the approval of the Purchaser.

**3.12. Work Breakdown Structure (WBS)**

- 3.12.1. The Contractor shall establish and maintain a project WBS.
- 3.12.2. The WBS shall define the major work packages and the relationship between the work packages and the end product.
- 3.12.3. The WBS shall describe the work packages to a level that exposes all project risk factors and allows accurate estimate of each work item's duration, resource requirements, inputs and outputs, and predecessors and successors.
- 3.12.4. The WBS shall identify for each work item its duration, resource requirements, inputs and outputs, predecessors and successors, assumptions, constraints, dependencies, and requirements for Purchaser support.
- 3.12.5. The Contractor shall plan work contained within the lowest-level WBS components for the Work Packages (WPs) in Contractor's scope.
- 3.12.6. The WBS shall be used as the primary framework for Contract planning and reporting to the Purchaser.
- 3.12.7. The Contractor shall not change the WBS without the approval of the Purchaser.

**3.13. Project Master Schedule (PMS)**

- 3.13.1. The Contractor shall establish and maintain a PMS that contains all Contract events and milestones, including Contract-related Purchaser events (e.g., Purchaser reviews, provision of specific Purchaser-furnished items). The PMS

shall correlate with the WBS and also be traceable to performance and delivery requirements of this SOW.

- 3.13.2. The PMS shall depict the sequence, duration, and relationship among WBS, Task orders, work packages and work items, including internal QA events.
- 3.13.3. The PMS shall identify the start and finish dates, duration, predecessors, successors, and resource requirements for each work item.
- 3.13.4. The PMS shall include the delivery dates for all management products (e.g., project plans, Project Status Reports), including at least the initial version and the final one.
- 3.13.5. The PMS shall include activity network, activity Gantt, milestone, and critical path views of the project schedule.
- 3.13.6. The PMS shall be made available on the Project Website.
- 3.13.7. The Contractor shall use the Microsoft Project 2010 or later to prepare this schedule and deliver in this format.
- 3.13.8. The initial version of the PMS shall, upon Purchaser Acceptance, be placed under Configuration and Version Control and the Contractor shall maintain the baselined version of the PMS on the Project Website.
- 3.13.9. A high-level, summary version of the PMS depicting the Milestone dates (see §5.1) and other significant dates shall always be available for checkpoint reviews and any milestone review meeting.

#### **3.14. Project Website**

- 3.14.1. The Contractor shall contribute to a project website that will be provided by the Purchaser accessible via Internet.
- 3.14.2. The Purchaser will implement an access control mechanism to restrict viewing of all contents of the website to a list of users approved by the PPM.
- 3.14.3. The Contractor shall maintain on this website all unclassified NCOP-2 Implementation project documentation, be it management products or specialist products, as soon as it is submitted in first draft version to the Purchaser.
- 3.14.4. The Contractor shall publish on the NCOP-2 implementation website:
  - 3.14.4.1. Project management information, including the PMP, the PMS, the PBS, the WBS, the Quality Assurance Plan (QAP), and Project Highlight Reports (PHRs), RAID Log, Quality Log, all Change Requests regardless of their status, the Change Log;



- 3.14.4.2. SOW and its annexes, all presentation material from analysis, design, planning, review and other meetings; Purchaser-approved minutes of meetings, and background and guidance documents referred to in the SOW;
- 3.14.4.3. Vendor-provided technical documentation pertaining to the COTS integrated into NCOP-2 implementation;
- 3.14.4.4. Other documents as directed by the CPM or the PPM.
- 3.14.4.5. The website shall identify all relevant classified documents by title, unless a title is itself classified. The classified documents shall be exchanged between the Purchaser and Contractor using the relevant security procedures and shall be separately stored and baselined by the Purchaser.

### **3.15. Risk and Issue Management, RAID Log**

- 3.15.1. The Contractor shall establish and maintain a RAID Log for the project. Each item in this Log shall correspond to a Risk, Assumption, Issue or Decision.
- 3.15.2. The Contractor shall make the RAID Log available on the Project Website.
- 3.15.3. The Contractor shall update and report changes in the RAID Log at weekly checkpoint meetings and all formal review meetings.
- 3.15.4. Risks
  - 3.15.4.1. The Contractor shall establish a risk management process and perform risk management throughout the period of performance of this Contract.
  - 3.15.4.2. In the RAID Log, the Contractor shall identify any management, technical, schedule, and cost risks.
  - 3.15.4.3. The Contractor shall rate each risk as High, Medium, or Low, based on its probability of occurrence and its impact on cost, schedule, and quality.
  - 3.15.4.4. The Contractor shall identify for each risk the measures being taken to mitigate any risk rated as high on any factor and make an assessment of the risk rate in case of implementation of the mitigation measures.
  - 3.15.4.5. The Contractor shall include in the Project Status Report a chart that lists all active risks rated high on any factor and note any significant forecasted changes in these risks.
  - 3.15.4.6. Risk Movement is an information which shall be provided in checkpoint review meetings.
- 3.15.5. Assumptions

- 3.15.6. The Contractor shall use the RAID Log for recording assumptions about the project. All assumptions shall be verified by the Purchaser and the status shown on the RAID Log.
- 3.15.7. Assumptions resulting in changes do not automatically mean the changes are approved. Any assumption raising a CR shall trigger the normal Change Management process so that the raised CR is processed as usual.
- 3.15.8. Changes in assumptions could be the cause of any effort and cost increases to be captured in the System Implementation Plan (SIP) at the end of Phase 2.1, thus the RAID Log shall be used as a means of tracing back cost increases to changes in assumptions.
- 3.15.9. Issues
  - 3.15.9.1. The Contractor shall use the RAID Log for monitoring of issues identified and raised by the Contractor or the Purchaser.
  - 3.15.9.2. Issue Movement is an information which shall be provided in checkpoint review meetings.
  - 3.15.9.3. The RAID Log shall contain all of the issues raised during the installation, activation, OT&E sessions, and training delivery. The Contractor shall develop a categorisation of issues to enable tracking according to milestone, location, and priority.
- 3.15.10. Decisions
  - 3.15.10.1. The Contractor shall use the RAID Log to record all decisions taken in the process. All decisions shall be approved by the Purchaser and the status shown on the RAID Log.
  - 3.15.10.2. Decisions resulting in changes do not automatically mean the changes are approved. Any decision raising a Change Request (CR) shall trigger the normal Change Management process so that the raised CR is processed as usual.

### **3.16. Lessons Learned**

#### **3.16.1. Lessons Learned Log**

- 3.16.1.1. The Contractor shall establish and maintain a project Lessons Learned Log. The Lessons Learned Log shall include describe major problems encountered during the project implementation and identify improvements for the future projects.
- 3.16.1.2. The lessons learned Log shall be based on the information captured in the Issue Log and the Risk Log.

3.16.2. Lessons Learned Report

3.16.2.1. The Contractor shall deliver a Lessons Learned Report at the closure of the project.

**3.17. Configuration Management**

3.17.1. General

3.17.1.1. The Contractor shall be responsible to establish and effective CM organization for the application of all necessary CM procedures throughout the duration of the Contract.

3.17.1.2. The Purchaser shall maintain a version control system as part of its CM program.

3.17.1.3. This version control system shall allow for the unique identification of all changes to the deliverables including documents, no matter how minor the change.

3.17.1.4. The Contractor shall establish a Configuration database to record all of the deliverables and their versions.

3.17.1.5. The Contractor shall create and maintain four Configuration Baselines, as follows:

- a. Functional Baseline (FBL, or “as required”);
- b. Allocated Baseline (ABL, or “as-designed”);
- c. Product Baseline (PBL, or “as-built”);
- d. Operational Baseline (OBL, “as-deployed”).

3.17.2. Baselines

3.17.2.1. Traceability

3.17.2.1.1. The Contractor's developed baselines shall be encapsulated and maintained by the Contractor in a database established by the Contractor as specified under Configuration Management Tools.

3.17.2.2. Functional Baseline (FBL)

3.17.2.2.1. The Contractor's developed Functional Baseline is a set of documents that specifies the functional and non-functional requirements of a service or product and that is used as the approved basis for comparison.

3.17.2.2.2. The Contractor's developed FBL shall be derived from the contractual requirements and SHALL be established at the successful completion of the Training Analysis Review.

3.17.2.3. Allocated Baseline (ABL)

3.17.2.3.1. The ABL is a set of documents that specifies the design of a service or product and is used as the approved basis for comparison.

3.17.2.3.2. The Contractor's design in the ABL shall meet the functional and non-functional requirements allocated in the FBL.

3.17.2.3.3. The Contractor's ABL set of documents and Artefacts shall contain (but is not limited to) the following documents:

- a. TNA Report;
- b. Course Control Documents I, II and III;
- c. Training Plan;
- d. System Implementation Plan,
- e. Site Survey Workbooks
- f. Test Plans,
- g. Report templates (i.e. Site Installation, Activation, Data Migration, Training Delivery)

3.17.2.3.4. The Contractor's ABL shall be established at the successful completion of the each Training Design Review and Implementation Design Review (for each BL).

3.17.2.4. Product Baseline (PBL)

3.17.2.4.1. The PBL is a set of products and/or services, including supporting documents, which is used as the approved basis. In the scope of the project, the PBL shall be understood as the complementary products (i.e. documentation, training etc.) for the NCOP2 BL1 and BL2 PBL that will be provided by the WP1 Contractor. BL2 shall be understood as the complete product of BL1 and the delta.

3.17.2.4.2. The Contractor's PBL shall meet the functional and non-functional requirements allocated in the FBL and the design of the ABL, and shall be created for NCOP-2 BL1, and updated for NCOP-2 BL2.

3.17.2.4.3. The Contractor's developed PBL shall be established after successful completion of the Implementation Readiness Review (IRR). It reflects the "as-built" configuration of the system.

3.17.2.4.4. The Contractor's PBL shall complement the PBL provided by the WP1 Contractor, and shall maintained and updated following the possible changes to NCOP-2 BL1 and BL2 PBL.

3.17.2.4.5. The Contractor's PBL products shall contain:

- a. FBL (as-required) documentation,
- b. ABL (as-designed) documentation,
- c. Inventory documentation,
- d. Training documentation (i.e. syllabus, manuals and handouts, instructor guides, master lesson plans, presentations, training scenarios, certificate, feedback form, FAQs),
- e. Training Database and videos,
- f. Quality assurance documentation,
- g. Installation and Configuration Guide for Implementation,
- h. Security documentation,
- i. Configuration Management documentation,
- j. Site Survey reports
- k. Updated Training Plans
- l. Warranty documentation.

3.17.2.5. Operational Baseline (OBL)

3.17.2.5.1. The Contractor's developed OBL shall be site-specific and initially established after successful completion of the PSA and then finally established after successful completion of FSA. It reflects the "as-deployed" ("as-delivered") configuration of the system. The OBL shall be created for NCOP-2 BL1, and repeated and/or updated for NCOP-2 BL2.

3.17.2.5.2. The Contractor's OBL SHALL contain:

- a. Activated organizational node;
- b. Activation Report,
- c. Data Migration Report,
- d. Training Delivery report,
- e. Site Installation Node Report
- f. Installation and Configuration Guide for Implementation (updated);
- g. all the other data and documentation that comprise the system and any subsequent releases that reflects the "as-deployed" configuration of the system.

- 3.17.2.5.3. The baseline numbers shall be assigned by a Contractor with a major release number and a minor release number comprising an X.X notation.
- 3.17.2.5.4. The Contractor shall take both NCOP2 baselines (BL1 and BL2) into consideration in the assignment of the numbers, and shall request approval from the Purchaser for this numbering scheme.
- 3.17.3. Configuration Management Plan (CMP)
- 3.17.3.1. The Contractor shall create and maintain a CMP tailored to the requirements of the project scope. The CMP shall be kept up-to-date, and subject to revisions.
- 3.17.3.2. The Contractor shall place the CMP under configuration control prior to its implementation and for the life of the Contract.
- 3.17.3.3. In producing the Contractor's CMP, the Contractor shall define the organisation and procedures used to configuration manage the functional and physical characteristics of CIs, including interfaces and configuration identification documents.
- 3.17.3.4. The Contractor's CMP shall be compatible and consistent with all other plans, specifications, standards, documents and schedules.
- 3.17.3.5. All Contractor and Purchaser activities and milestones related to CM shall be identified and included in the PMS of the PMP.
- 3.17.3.6. The CMP shall address all disciplines within this section and shall as a minimum include the following sections:
- a. Introduction;
  - b. Organisation;
  - c. Configuration Identification and Documentation;
  - d. Configuration Control;
  - e. Configuration Status accounting;
  - f. Configuration Audits;
  - g. Configuration Management tools/Interface management.
- 3.17.4. Configuration Item Identification and Documentation
- 3.17.4.1. The Contractor shall divide the products and specialist products into CIs (Configuration Items).
- 3.17.4.2. The Contractor's CI structure shall be a tree structure, showing the relationships between the lower level baselines and CIs.
- 3.17.4.3. The Contractor shall propose appropriate CIs in the CMP including an explanation of the rationale and criteria used in the selection process, based on the criteria for selection of CIs as detailed in [NATO ACMP 2009, 2017]. Additional guidance about CI selection can be found in STANAG 4427, 2014 and in STANAG 4159.

- 3.17.4.4. The Contractor's CIs shall be chosen in a way to assure visibility and ease of management throughout the development effort and the support to the OBL after acceptance.
- 3.17.4.5. The Contractor shall create or use a COTS software to maintain the CMDB that persists the Configuration Items (CIs) attributes, (inter-) relationships and Configuration Baselines.
- 3.17.4.6. The Contractor shall ensure that the Configuration Baselines and CIs are persistently stored, maintained and managed in the CMDB, which shall be compliant with Purchaser CMDB tools.
- 3.17.4.7. The Purchaser reserves the right to modify the CI structure and attributes.
- 3.17.5. Configuration Control
  - 3.17.5.1. The Contractor shall be responsible for issuing in a timely manner, as required by this SoW, 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.
  - 3.17.5.2. 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.
  - 3.17.5.3. The Contractor shall be fully responsible for the Configuration Control of all baselines and CIs in accordance with [NATO ACMP 2009, 2017].
  - 3.17.5.4. The Contractor shall define the responsibilities and procedures used within the Contractor's organisation for configuration control of established CI, and for processing changes to these CI. These procedures shall also refer to the two major baselines NCOP-2 BL1 and BL-2, and the changes that may be initiated by the software product and its effect on the baselines.
  - 3.17.5.5. The Contractor shall define the Configuration Baseline Change procedures and shall submit Notice of Revision or Request for Deviations and Wavers when required and approved by the Purchaser.
- 3.17.6. Change Requests
  - 3.17.6.1. The Contractor shall establish and maintain a process for identifying, reviewing, approving, and tracking all requests for changes in Statement of Work.
  - 3.17.6.2. Change Requests (CR) shall identify proposed changes to the NCOP-2 Implementation requirements.

3.17.6.3. The Contractor shall develop a Change Request Form. Any Change Request (CR) shall contain, at a minimum, the information in Table 3-1.

*Table 3-1 - Content of Change Requests*

Serial	Requirement
1	Identification number per request
2	Requirement affected
3	Requestor's identity
4	Date of request
5	Requested change description and rationale
6	Priority
7	Status of request (how it was addressed – e.g. completed, not addressed, etc.)
8	Comment/Resolution of the request
9	<p>If the requested change impacts the cost, design, implementation, or any other contractual documentation, then two other areas shall be addressed:</p> <ul style="list-style-type: none"> <li>• Impact on schedule, cost, performance, or any other contractual requirements (based on an analysis)</li> <li>• Priority for handling (high/critical/urgent, medium/sensitive/important, low)</li> </ul>

3.17.6.4. CRs shall be stored on the Project Website along with a Change Log on the Project Website listing all the CRs, their status and relevant dates.

3.17.6.5. The Contractor shall use the configuration control procedures specified in the CMP for the preparation, submission for approval implementation and handling of CRs to baseline CIs.

3.17.6.6. The Contractor shall appropriately reflect in the baseline documentation all design changes by the issue of appropriate changes or revisions.

3.17.7. Requests for Deviation (RFD) and Requests for Waiver (RFW)

3.17.7.1. If required, the Contractor shall prepare, handle, and submit for Purchaser's approval, RFDs and RFWs as defined in [NATO ACMP 2009, 2017]

3.17.7.2. The Contractor shall propose in the CMP a RFD/RFW format based on the requirements in [NATO ACMP 2009, 2017]

3.17.7.3. The Contractor shall be aware that permanent departures from a baseline shall be accomplished by CR action rather than by RFD.

3.17.8. Configuration Status Accounting (CSA)

3.17.8.1. The Contractor shall be fully responsible for the CSA for all CIs in accordance with [NATO ACMP 2009, 2017]

3.17.8.2. The Contractor shall propose the format of CSA report his CMP for Purchaser's approval.



- 3.17.8.3. The Contractor shall deliver CSA reports to the Purchaser both as part of management and specialist products in this contract and also as standalone documents at the Purchaser's request.
- 3.17.8.4. At the end of the Contract, the Contractor shall deliver a set of final CSA reports for each CI or set of CI's in both hard copy and in electronic media; specifically allocating CSA reports to each of NCOP-2 BL1 and BL2.
- 3.17.9. Deficiency Reports
- 3.17.9.1. The Contractor shall establish and maintain a process for reporting, tracking, and resolving deficiencies. A deficiency is to describe the aspects of any project deliverable not meeting its requirements.
- 3.17.9.2. Deficiency Reports (DRs) document problems during the NCOP-2 implementation including the training engineering and delivery.
- 3.17.9.3. DRs shall be closed when the identified problem is resolved through procedure or other action that does not affect the system baselines, or when a corresponding Change Request is opened to correct the deficiency through a change.
- 3.17.9.4. All DRs should be stored in the Project Website as an Issue.
- 3.17.9.5. The Deficiency Report Form and the Deficiency Reports shall be reviewed and approved by the Purchaser.
- 3.17.9.6. Configuration Verification and Audits
- 3.17.9.7. Upon request from the Purchaser, the Contractor shall support configuration audits to demonstrate that the actual status of all CIs matches the authorised state of CIs as registered in the CSA reports.
- 3.17.9.8. The Contractor shall support the FCA and Physical Configuration Audit (PCA) by providing the required Baseline Documentation and answering questions from the Purchaser's Auditor. The PCA and FCA shall be performed before the PSA milestone for each baseline.
- 3.17.9.9. The Contractor shall draft a Configuration Audit Report for the FCA and PCA that summarises the results for the Purchaser's approval.
- 3.17.9.10. The Contractor shall solve any deficiencies found during the Configuration Management Audits within the agreed timeframe and update the baseline accordingly.

### **3.18. Quality Management**

- 3.18.1. General

- 3.18.1.1. The Contractor shall support NATO with the establishment, execution, and maintenance of an effective Quality Management program throughout the Contract lifetime.
- 3.18.1.2. The program shall ensure that procedures are developed, implemented and maintained to adequately control the design, development, production, testing, configuration management, and support of all deliverables.
- 3.18.2. Quality Assurance Plan (QAP)
  - 3.18.2.1. The Contractor shall support NATO in planning project quality assurance activities by establishing and maintaining a QAP.
  - 3.18.2.2. The Contractor shall establish and maintain, as part of the Project Website, a project Quality Log, as specified in PRINCE2 that lists all planned and performed quality checks on Contractor deliverables. The Quality Log shall be reviewed during the monthly PHR reviews (see §2.18).

**3.19. Meetings**

3.19.1. General

- 3.19.1.1. Unless otherwise specified, at least one week before all meetings (other than weekly checkpoint meetings) required under this Contract, the Purchaser shall send an invitation, including the information in Table 3-2.

*Table 3-2 - Content of Meeting Invitation*

Serial	Requirement
1	Purpose
2	Agenda
3	List of participants
4	Date, hour, place, duration

- 3.19.1.2. The Contractor shall record meeting minutes and post them on the Project Website within 3 working days after the meeting. The Purchaser has to send comments within 3 working days after receiving the meeting minutes, otherwise it will be accepted.
- 3.19.1.3. The meeting minutes shall include the information in Table 3-3.

*Table 3-3 - Content of Meeting Minutes*

Serial	Requirement
1	Input documents
2	Time and date of the event
3	Participants
4	Comments raised
5	Decisions taken

- 3.19.1.4. The minutes shall not be used as a mechanism to change the terms, conditions or specifications of the Contract, or as a vehicle to alter requirement of project deliverable. Such changes shall only be made by agreement, amendment or by authorised mechanisms as set forth in the Contract, although Change Requests can be raised as a result of recorded intent in meetings.
- 3.19.1.5. It is envisioned that there will be frequent Video Tele-Conferences (VTCs) between the Contractor team and the Purchaser Project Team and as such the Contractor shall have facilities to carry out VTC sessions with the Purchaser's facility locations. These VTC sessions will cover only the UNCLASSIFIED discussions.
- 3.19.2. Weekly Checkpoint Meetings
  - 3.19.2.1. These meetings shall include the PPM, PTL, CPM, CIL, CTL, and other stakeholders if required, depending on on-going project activities.
- 3.19.3. Contract Milestone Meetings
  - 3.19.3.1. CPM, CSA and CCO, PPM, PTL and PCO. PTL and CSA or any other stakeholders could be present as needed. These meetings are held after any milestone activities are completed and would determine if the milestone was passed successfully or whether more work is needed to complete all the required deliverables for the milestone. In principle these meetings are face-to-face and are to be held at the Purchaser's facilities (Mons, Brussels or The Hague).
  - 3.19.3.2. Milestones are described in detail in Section 4.
- 3.19.4. Formal Reviews
  - 3.19.4.1. The procedures described in this section cover the formal reviews that would finalise and accept the deliverables within a milestone review meeting (see §5.1 for the list of milestones).
  - 3.19.4.2. The Contractor shall submit all documentation for formal Purchaser review as described below. At each review cycle, the Purchaser will state if the document is or is not likely to be accepted in its Final version.
  - 3.19.4.3. The Contractor shall provide a first draft four weeks before a Milestone Review meeting to enable the Purchaser Team to review the deliverables in sufficient detail.
  - 3.19.4.4. The Purchaser shall provide comments, corrections, and suggested changes to the Contractor within two weeks of receipt.
  - 3.19.4.5. The first draft shall be substantially complete and correct.

- 3.19.4.6. The Purchaser reserves the right to return without review a document that has significant deficiencies.
- 3.19.4.7. The Contractor shall not rely on the Purchaser review to fill in deficiencies or obtain missing Purchaser information.
- 3.19.4.8. The Contractor shall resubmit the document as a final draft (version 1.0) incorporating the Purchaser's comments within 5 days after receipt.
- 3.19.4.9. The Purchaser shall review the final draft and verify their applicability for the success of the milestone within 5 working days of receipt. Thus the total time to complete the review shall be 4 weeks. In principle this final version shall be available before the relevant Milestone Review meeting. This process is depicted in Figure 1.

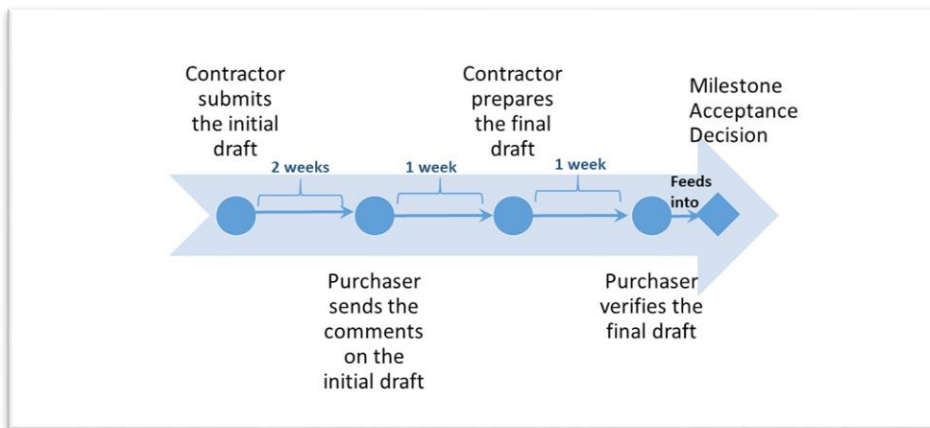


Figure 1 - Milestone Review Timeline

- 3.19.4.10. The Purchaser decides whether the Milestone deliverable requirements are satisfied based on this revised draft and inform the Contractor about this decision in the Milestone Review meeting.
- 3.19.4.11. Even if a document has been formally reviewed and accepted during a Review Meeting, the Contractor shall remain responsible for updating the document to reflect changes in the plans, engineering, or support arrangements.
- 3.19.4.12. Four weeks before each Formal Review, the Contractor shall send an invitation to the participants and an organisation paper, including as a minimum the information in Table 3-4.

Table 3-4- Information for Formal Review invitations

Serial	Requirement
1	Agenda
2	List of participants

3	Date, hour, location of the Formal Review
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3.19.5. Other Meetings

3.19.6. Additional meetings

3.19.6.1. The Contractor shall identify to the PPM any other meetings with NATO personnel required to support this Contract.

3.19.6.2. Upon approval by the PPM the Contractor shall schedule and conduct such meetings, which shall be mentioned in that month's Project Highlight Report.

3.19.7. Monthly Project Highlight Reports

3.19.7.1. The Contractor shall provide, no later than the third business day of each month, a Project Highlight Report (PHR). This report shall summarise activities, including the information in Table 3-5.

*Table 3-5 - Content of Project Highlight Reports*

Serial	Requirement
1	Summary of contract activities during the preceding month, including the status of current and pending Work Packages
2	Progress of work and schedule status, highlighting any changes since the preceding report
3	Status of action items
4	Description of any identified problems, issues and high risk areas with proposed solutions and corrective actions
5	Any preparation and test activities conducted and results
6	Financial status (if relevant)
7	Changes in Contractor personnel assignment, as approved by the Purchaser
8	Summary of Change Requests requested, recommended or approved
9	Plans for activities during the following reporting period

3.19.7.2. The draft PHR shall be discussed in an extended weekly checkpoint review meeting and changes shall be agreed, after which the final report will be distributed to all stakeholders.

3.19.7.3. The Contractor shall maintain an archive of PHRs on the Project Website.

## 4. TECHNICAL

### 4.1. General

4.1.1. This section outlines the requirements of the NCOP-2 Implementation Contract.

4.1.2. The work is suggested to be structured under 2 phases other than Project Management: Training Engineering, and System Implementation.

### 4.2. Deployment configuration

4.2.1. NCOP will operate in two modes as shown in Figure 2: static (fully connected) and deployed (with limited/intermittent connectivity or autonomous).

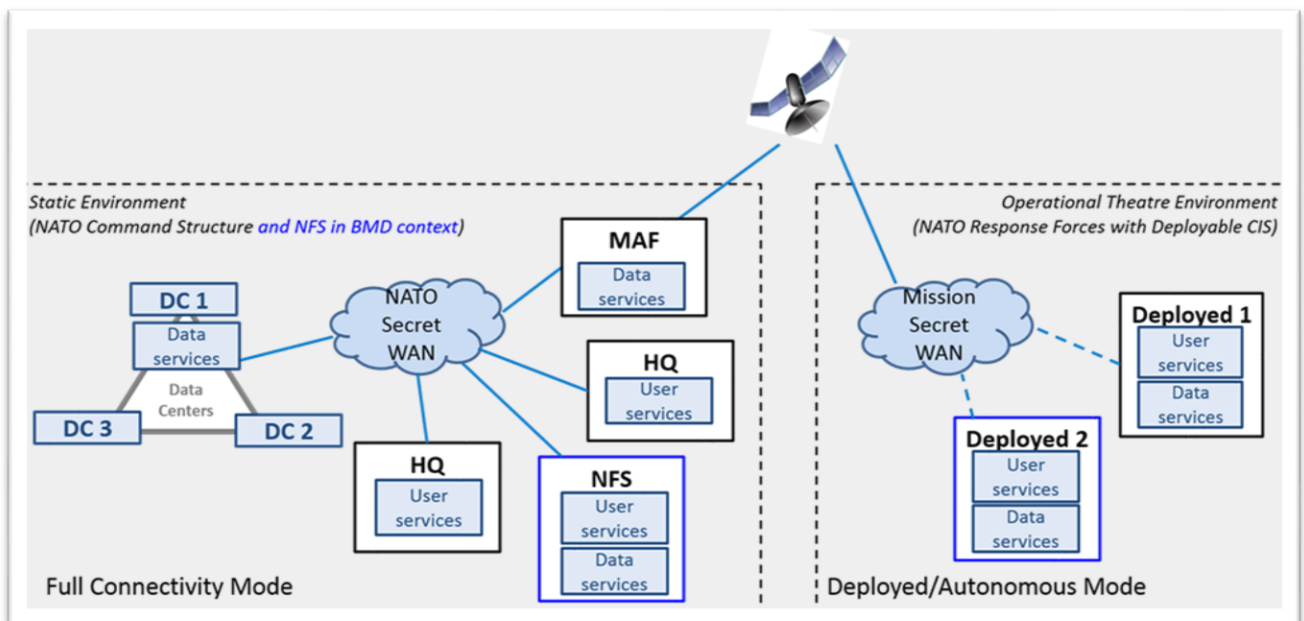


Figure 2 - NCOP Modes of Operation

4.2.2. In the static (fully connected) mode all users are connected to services hosted in the datacentres (located in another physical location) through the Wide Area Network (WAN). The capability will be able to operate with low bandwidth and high latency connectivity conditions as needed.

4.2.3. In the deployed mode, the NCOP capability will be hosted on the DCIS platform and will operate with a disadvantaged connection (possibly low bandwidth and high latency connectivity and limited, intermittent or no connectivity) with the static infrastructure. The system will operate in an autonomous manner if the connectivity between the servers at different locations becomes broken, interrupted or is significantly reduced. This

- provides resilience to network outage/interruptions and the capability to work independently. The system will automatically synchronise with other nodes once the connection is restored.
- 4.2.4. Reach-back to the static environment is mainly provided through the Mission Anchor Function.
  - 4.2.5. A deployed NCOP configuration will need to operate also in an autonomous mode if the DCIS connectivity is broken, interrupted or is significantly reduced.
  - 4.2.6. The NCOP-2 system configuration will depend on the deployment environment:
  - 4.2.7. In the static environment NCOP instances will be available in the Data Centres on virtualised server platforms.
  - 4.2.8. NCOP “Extra Large Scale Node” (XL) configuration will support multiple operational nodes operating from the same Data Centre. In order to increase system availability and resiliency each of the three Data Centres will receive such a NCOP “Extra Large Scale Node” and the design goal will be to interconnect all NCOP XL nodes in order to provide a single access to NCOP for all NCOP users within the network through technical means provided by Core Services.
  - 4.2.9. Mission preparation and early planning may be done in this environment (on the NCOP NATO S\*CRET capability).
  - 4.2.10. Mission specific functions can also be performed during mission execution in the static environment through the MAF (e.g. as initially implemented for the FMN Spiral 1 (NRF 2016)) with the Mission Information Room (MIR).
  - 4.2.11. In the deployed environment NCOP will be implemented on one or more Deployable CIS Modules (DCM) of the DCIS.
  - 4.2.12. Data replication will be implemented to initialize and synchronize the deployed environment and later maintain consistency between the static and deployed environment, as required by the mission.
  - 4.2.13. The MAF will provide the required cross-domain capability to access and allow information exchange between security domains.
  - 4.2.14. ANNEX A summarizes the physical scope of NCOP-2, i.e. the sites where NCOP-2 will be physically deployed in order to support the ‘logical’ nodes (Commands and Agencies).
  - 4.2.15. Different configurations will be required mainly driven by the number of users. The estimates about those configurations are based on NCOP-1 usage and configuration and will be revised in later acquisition stages.
  - 4.2.16. The main system configurations used for deployment are the following:

- SN – Single Node, used typically for smaller commands and individual DCIS configurations (up to 50 users) ;
- SC – Scaled (Medium) Node, used typically for regular single commands and DCIS configurations (up to 150 users) ;
- HA – High Availability Node, used typically for static operational systems supporting primarily a large command (up to 300 users) ;
- XL – eXtra Large scale Node, only used for the NATO DCs that host multiple logical NCOP-2 instances in order to support users from all the NATO command. XL nodes are intended to be interconnected to provide a single access to NCOP across the whole network ;

4.2.17. As shown in ANNEX A, all the static configurations will be supported by one, two or three DCs.

4.2.18. Multiple DCs are used for increased availability, resilience and performance;

4.2.19. NCOP servers at datacentres will be able to support simultaneously more than one command (within the same security domain) through the XL configuration.

### **4.3. Training Engineering**

4.3.1. The Contractor shall plan for, develop, and deliver the training solutions for NCOP-2 in compliance with Bi-SCD 75-7 [Ref 0] for both baselines as defined in §1.7.

4.3.2. The Contractor shall perform the TNA and deliver the TNA Report, the backing document to justify all the training activities for NCOP-2.

4.3.3. The Contractor shall perform additional TNA activities and update the TNA report as required for each baseline.

4.3.4. The Contractor shall provide training for all user types and supporting staff (e.g., Functional Manager through a combination of self-study aids, including System User and Administrative Manuals (hard copy and interactive electronic), with the learning environment identified (e.g., residential, distributed, or a blended form of training), in accordance with the Bi-SCD 75-7, and NCOP-2 specific training requirements.

4.3.5. In addition, the Contractor shall provide trainings to the operational trainers to provide all mentioned trainings after the implementation period.

4.3.6. The Contractor's training program shall be a combination of classroom (i.e.instructor-led) training, CBTs and hands-on/practical training while practical training shall be the major part of the program incorporated after each technical information. The exact distribution and weight of the different training



methodologies shall be proposed based on the TNA results for Purchaser approval, and updated as requested by the Purchaser.

- 4.3.7. The Contractor shall apply the NATO Systems Approach to Training as defined in the Bi-SCD 75-7. The Contractor shall perform all required analysis, design development, implementation and evaluation tasks according to the guidance provided in Bi-SCD 75-7.
- 4.3.8. The Contractor shall develop and maintain a Training Plan and associated material and activity as defined in the next sections.
- 4.3.9. The Purchaser will provide the following basic facilities: room, power supply, tables, chairs, network connectivity.
- 4.3.10. An initial training requirements analysis conducted during the planning phase is provided in ANNEX B. This initial analysis identified the following user roles for NCOP-2:
  - NCOP General User ;
  - NCOP Advanced User ;
  - NCOP Contributor ;
  - COP Manager ;
  - Functional Manager ;
- 4.3.11. The initial training requirements analysis resulted that a Combined Course for User Roles (i.e., NCOP General User, NCOP Advanced User, NCOP Contributor) and Combined Course for COP Manager and Functional Manager can be assumed for the activation of the organisational nodes.
- 4.3.12. Training Plan
  - 4.3.12.1. The Contractor shall develop and maintain the NCOP-2 Training Plan describing how it will meet the requirements for initial and follow-on training. Training Plan shall be updated as required accordingly with the TNA development and finalization.
  - 4.3.12.2. The Training Plan shall address all stages of training development, delivery, and support covered under this Contract. The Training Plan shall describe in a coherent way how training will be developed, delivered, and maintained throughout the life of the NCOP-2 capability.
  - 4.3.12.3. The Training Plan shall describe the training documentation.
  - 4.3.12.4. The Training Plan shall propose a training schedule, in relation to the overall Contract and System Implementation schedule.
  - 4.3.12.5. The Training Plan shall describe the process for student assessment and Training Evaluation.
  - 4.3.12.6. The Training Plan shall describe the support to be provided by the Purchaser (manpower, services and material).

4.3.12.7. The Training Plan shall at least cover the following:

- Summary of the Training Program scope (product, user types, baselines and the contractual scope)
- Training Organization
- Training Methodology and Planning
  - Analysis
  - Design
  - Development
  - Conduct
  - Evaluation
  - OT&E
- Approach to Training Need Analysis
- Training delivery Student pre-requisites for each role
  - Training courses
  - Training schedule (in line with PMS)
  - Training facilities
- Training courses development
  - Training materials
  - Training syllabus
  - Instructor guides
  - Student manuals
  - Training Scenarios
  - Presentations and hand-outs
  - Certificates
  - Updating training materials
- Course quality assessment and evaluation

4.3.12.8. The Contractor's Training Plan shall clearly explain the transition, considerations and activities to plan, prepare, update and provide the training program and its artefacts for both NCOP-2 BL1 and BL2.

4.3.12.9. The acceptance of the Training Plan by the Purchaser signifies only that the Purchaser agrees to the Contractor's approach in meeting the requirements. This acceptance in no way relieves the Contractor from its responsibilities to meet the requirements stated in this Contract.

4.3.13. Course control Analysis (TNA)

4.3.13.1. The Contractor shall conduct TNA as described in the next sections and provide a TNA Report.

4.3.13.2. The Contractor shall provide its organization, methodology and procedures within the Training Plan for Purchaser approval. This shall include the details for the planning and execution of Task Analysis, DIF, GAP, user engagement methods (e.g. surveys, questionnaires, working groups etc.) and other activities as applicable.

- 4.3.13.3. The Contractor shall base the scope, delivery methods, and duration of NCOP-2 training courses and materials on the results of TNA.
- 4.3.13.4. The Contractor shall update the Training Plan based on the results of the TNA, as required.
- 4.3.13.5. Task Analysis
  - 4.3.13.5.1. The Contractor shall conduct a Task Analysis in accordance with the Bi-SC DIR 75-7, Chapter 5 and Annex I, to provide a structured and sequenced diagram of performance statements including specific tasks, subtasks and supporting task elements.
  - 4.3.13.5.2. The Contractor shall use and improve the technical data and documentation created by the WP1 Contractor while performing the task analysis.
  - 4.3.13.5.3. The TNA shall include identified roles that will use NCOP-2 to accomplish their tasks.
  - 4.3.13.5.4. The Task Analysis shall include a Difficulty, Importance and Frequency (DIF) Analysis in accordance with Bi-SCD 75-7, Chapter 5 to determine the priority and training effort to be applied to the Performance Objectives (PO).
  - 4.3.13.5.5. The DIF analysis shall identify the difficulty and importance of each major task to be performed by each category of role and the frequency with which the task will be performed.
  - 4.3.13.5.6. The Task Analysis shall include a Performance Gap Analysis in accordance with Bi-SCD 75-7, Chapter 5, to assess the gap between the current skills of the target audience and the tasks they will be expected to perform in the use and support/maintenance of NCOP-2 in order to determine which performance gaps can be addressed by training.
- 4.3.13.6. Target Audience Analysis
  - 4.3.13.6.1. The Contractor shall conduct a Target Audience Analysis in accordance with Bi-SCD 75-7, Chapter 5, utilizing any information already determined by the Purchaser Training Staff and produce a summary population table.
  - 4.3.13.6.2. The Contractor shall assess the current skills of operational staff that will use NCOP-2 and the importance and difficulty of tasks via discussions with Purchaser-identified experts.
- 4.3.13.7. Performance Objectives (PO)

4.3.13.7.1. The contractor shall develop Performance Objectives (PO) for those tasks for which trainable performance gaps have been determined and document them in accordance with Annex J of Bi-SCD 75-7.

4.3.13.7.2. The contractor shall document the results of this analysis in the Course Control Document I & II (CCD I & II) - Course Proposal in accordance with Bi-SCD 75-7, Chapter 5 and Annex L.

4.3.13.8. Training Strategy

4.3.13.8.1. The Contractor shall develop a Training Strategy for each course as identified as a requirement and document them in accordance with Bi-SCD 75-7, Chapter 5. The Training Strategy shall address how the NCOP-2 training requirements will likely be resolved, including an estimate of the duration for a course and the annual production, and identification of the proposed learning environment.

4.3.13.8.2. The contractor shall document the results of this analysis in CCDs I & II - Course Proposal in accordance with Bi-SCD 75-7, Chapter 5 and Annex L.

4.3.13.9. TNA Initial Report

4.3.13.10. The Contractor shall deliver an initial TNA Report in accordance with Bi-SCD 75-7, which shall include the following:

- a description of the TNA approach (in line with each NCOP-2 baseline) and activities conducted during the TNA workshops ;
- user engagement (methodology, timelines based on the TNA development, inputs and output expected from the users, questionnaires, surveys etc.) ;
- an account of the Task Analysis performed ;
- the results of the Performance Gap Analysis, Task Analysis, DIF Analysis, Target Audience Analysis (including the identification of student prerequisites) ;
- the list of POs ;
- training strategy selected for all courses identified as requirement ;

4.3.14. Training Design

4.3.14.1. Instructional Analysis

4.3.14.1.1. The contractor shall conduct an Instructional Analysis in accordance with Bi-SCD 75-7, Chapter 6 that includes, but is not limited to, the following activities:

- Identify the main teaching points (and associated enabling elements) by breaking out the skills and knowledge into sub-components in order to achieve the Performance Objectives identified ;

- Identify all components and sub-components of the tasks that make up the performance objective, including supporting skills and knowledge elements as well as other attributes, such as attitudes ;
- Identify the main points (the teaching points) associated with the supporting (enabling) elements ;

4.3.14.2. Enabling/Learning Objectives (ELO)

4.3.14.2.1. The contractor shall take all the Performance Objectives that require Education and Individual Training (E&IT) and create a list of Enabling/Learning Objectives (ELO) in accordance with Bi-SCD 75-7, Chapter 6 and Annex N.

4.3.14.3. Training Assessment and Evaluation

4.3.14.3.1. The contractor shall develop an assessment plan structured according to the template provided in Bi-SCD 75-7, Table 6-2, that specifies how achievement of the POs will be assessed and how the student progress based on the assessment of the ELOs will be monitored.

4.3.14.3.2. The Contractor shall propose an assessment and evaluation methodology to the purchaser as part of the Training Plan.

4.3.14.3.3. Training Assessment methodology shall be based on Bi-SCD 75-7, sections 7-6 and 7-7 for assessment approaches and instruments and include as a minimum:

- Examination methodologies and certification ;
- Minimum score to achieve for successfully passing the course ;
- Course(s) to be done to get the certification for each Role ;
- Description of Role's certification process ;

4.3.14.3.4. The Contractor shall ensure that each student is instructed at the end of each course (residential or eLearning) to complete and return the course evaluation feedback form provided as part of the training course.

4.3.14.3.5. The Contractor shall consolidate and forward student feedback to the Purchaser following each training course in the form of a Training Course Evaluation Report. The report shall also recommend changes and improvements to the training plan based on the consolidated student feedback. The report shall also address student attendance, problems encountered and actions taken to resolve the problems.

4.3.14.3.6. The Contractor shall revise/refine and reissue course material and eLearning products to reflect the consolidated student feedback and proposed improvements in the training evaluation report.

4.3.14.3.7. The Contractor shall produce Training Certificates for each training session and student. The certificates shall be delivered immediately at the end of the training following the completion.

#### 4.3.14.4. Instructional Strategies

4.3.14.4.1. The contractor shall define instructional strategies in accordance with the guidance provided in Bi-SCD 75-7, Chapter 6, by identifying and selecting:

- Instructional methods such as demonstration-performance, case studies or lectures ;
- Instructional media (e.g., pictures, diagrams, video recordings, models, simulators, real equipment, eLearning) ;
- Learning environment e.g., centralised instruction (bringing the learners to the instruction); distributed instruction (taking the course to the learners) or a combination of both ;

4.3.14.4.2. The contractor shall formulate a proposal for the instructional strategy based on the selected instructional methods, media and the environment in accordance with Bi-SCD 75-7, Chapter 6.

4.3.14.4.3. The contractor shall document the Course Control Document (CCD) III - Programme of Classes in accordance with Bi-SCD 75-7, Chapter 5 and Annex R to define the training solution which shall include the ELO and provide the details supporting the overall instructional strategy including the final structure of the content, teaching points, the instructional method, the time allocated to complete the ELO and student assessment details.

#### 4.3.14.5. TNA Final Report

4.3.14.5.1. The Contractor shall update the initial TNA report and deliver a final TNA Report in accordance with Bi-SCD 75-7, that shall include the following:

- a description of the TNA approach and activities ;
- the results of the Performance Gap Analysis, Task Analysis, DIF Analysis, Target Audience Analysis, and the Instructional Strategy Analysis ;
- the final list of POs ;
- the final list of ELOs ;
- the List of Teaching Points developed for each of the CCDs II and III as summaries of the proposed E&IT solutions ;

4.3.14.5.2. The Contractor shall perform the relevant TNA activities and deliver the updated TNA Report as required for the NCOP-2 BL2.

#### 4.3.15. Training migrated

##### 4.3.15.1. General

4.3.15.1.1. The Contractor shall produce appropriate Training Materials in accordance with the Bi-SCD 75-7, to support the training implementation. The training material shall include the following as required:

- Training Syllabus ;
- Student Manuals and Handouts ;
- Instructor Guides ;
- Master Lesson Plans ;
- Training Presentations ;
- Training Scenarios ;
- Training Database ;
- Upon completion, a Training Certificate ;
- Course evaluation feedback form ;
- Quick Reference Guides ;
- FAQ ;
- Introductory Video ;

4.3.15.1.2. The Training materials shall be developed in accordance with the results of the TNA.

4.3.15.1.3. The training materials for the NCOP-2 specific courses shall provide all the information required to conduct the courses and maintain the training documentation.

4.3.15.1.4. For the development of training materials, the Contractor may reuse existing COTS documentation and manuals, as applicable. The content and format of the information reused will be subject to Purchaser approval.

4.3.15.1.5. The Contractor shall develop the training materials with an adequate balance between trainer-centered activities and learner-centered activities.

4.3.15.1.6. The Contractor shall ensure that the NCOP-2 Training materials are provided in the UK English language. It can be assumed that all Purchaser personnel selected to attend the courses will meet the minimum Standardised Language Proficiency (SLP) of 3232 in English as specified in [STANAG 6001].

4.3.15.2. Syllabus

4.3.15.2.1. The Syllabus shall include the following elements:

- Course title ;
- Course description ;
- Learning objectives, as identified in the TNA and confirmed in the Training Plan
- Instructional methodologies to be employed in the delivery of the course ;
- Total number of instructional hours ;
- In-class assignments or laboratories ;
- Evaluation tools ;
- Performance standards ;

4.3.15.3. Student Manuals and Handouts

- 4.3.15.3.1. Student Manuals and Handouts are reference handbooks to be used and retained by the students.
- 4.3.15.3.2. The Student Manual shall describe the concepts, functions, and features presented in the course, including links or references to the relevant documentation included in a NCOP-2 Product Baseline.
- 4.3.15.3.3. Handouts are additional aids that can supplement the student manuals when covering areas identified as difficult and/or particularly important.
- 4.3.15.3.4. Handouts shall cover alternative approaches and provide realistic examples of task execution.
- 4.3.15.4. Instructor Guides
  - 4.3.15.4.1. Instructor guides are the procedures and specific instructions for use by the instructors during the planning, preparation, execution as well as close out of specific training activities.
  - 4.3.15.4.2. The Instructor Guide is best structured as a series of outline lessons, providing key points for the instructor to stress, some sample questions to ask, appropriate times to inject student progress tests and practical exercises, other instructional tips, and any activity aiding student learning of the related training objective.
- 4.3.15.5. Master Lesson Plans
  - 4.3.15.5.1. Master lesson plans are generally used to provide detailed guidance and the required supporting materials (e.g., electronic presentations) in order to minimize the preparation time for the instructor cadre.
- 4.3.15.6. Training Presentations
  - 4.3.15.6.1. Training presentations shall reflect the Course Lesson Plan and include all of slides for delivery of the course content.
- 4.3.15.7. Training Scenarios
  - 4.3.15.7.1. The Contractor shall prepare Training Scenarios to be used with NCOP-2 Training Systems.
- 4.3.15.8. Training Database
  - 4.3.15.8.1. The Contractor shall develop an operationally-realistic set of NCOP-2 data to support training objectives for use in NCOP-2 Training Courses and Training Materials.
  - 4.3.15.8.2. The training database shall be dynamic and allow replay of training scenarios.
  - 4.3.15.8.3. Training data and scenario shall be updated according to the feedback from the trainees.
- 4.3.15.9. Training Certificates



4.3.15.9.1. The Contractor shall produce Training Certificates for each training session and student. The certificates shall be delivered immediately at the end of the training following the completion.

4.3.15.10. Course Evaluation Feedback Form

4.3.15.10.1. The Contractor shall ensure that each student is instructed at the end of a course to complete and return the course evaluation feedback form provided as part of the course.

4.3.15.11. Frequently Asked Questions (FAQ)

4.3.15.11.1. The Contractor shall provide a FAQ database which is categorised logically providing easy-to-access information for the most applicable questions about the usage of the NCOP-2 capability.

4.3.15.12. Introductory Video

4.3.15.12.1. The Contractor shall provide an Introductory Video (not longer than 5 minutes) in support of the training and demonstration events of the NCOP-2 capability. The content of the Introductory Video shall be NATO Unclassified and approved by the Purchaser.

4.3.15.13. Complementary Computer Based Training (CBT) Material

4.3.15.13.1. CBT material covers all eLearning assets including the SCORM packages, graphic and multimedia assets. CBT Material will be provided by the Purchaser.

4.3.15.13.2. The NCOP-2 CBT shall complement the NCOP-2 classroom training and online help capabilities.

#### **4.4. System Implementation**

4.4.1. Under this activity, the Contractor shall install NCOP-2 at core sites, activate NCOP-2 at core organisational nodes, and provide the related initial training and operational support.

4.4.2. Since the NCOP-2 implementation will be based on deployment at DCs for the static locations, not all sites will be having or updating infrastructure to host NCOP-2 Servers and Storage. Therefore, the implementation will be conducted in two parallel activities:

- Static and Deployable Site Installation (DCs, Reference Environment, Deployable Sites) ;
- Organisational Node Activation ;

4.4.3. The system implementation shall cover the following activities:

- Planning of implementation activities ;
- System/Software installation ;
- Activation of organisational nodes ;
- Training delivery ;
- Organisational Testing and Evaluation ;

#### 4.4.4. System Implementation Plan

- 4.4.4.1. The Contractor shall provide and maintain a System Implementation Plan. This plan shall detail the overall schedule for implementation activities, including site preparation, site activation, data migration, initial on-site training, conduct of OT&E, the Contractor's approach to all implementation tasks, the Contractor organisation and key personnel involved in implementation, the tools to be used, a sample of its site survey checklist, initial site inventory, site engineering drawing(s), installation and activation checklist(s).
- 4.4.4.2. The specific procedures to be executed at each site shall be described in Site Installation and Activation Procedures, being a part of the System Implementation Plan. The implementation plans and procedures shall be of sufficient quality and detail to enable the successful implementation of the NCOP-2 capability at a particular site and node without adverse impact on the operational mission, but also the continued COP operations of those sites and nodes not yet transitioned to NCOP-2. The implementation plans and procedures shall include:
- Technical aspects (e.g., transition from NCOP-1, phased transition, piloting, timing of transition to lower risk periods) ;
  - Organisational aspects (e.g., communication planning, training specifics, issue reporting) ;
- 4.4.4.3. The System Implementation Plan shall include an agreed System Transition Plan for installation node and organisational node transition from the use of NCOP-1 to the use of the NCOP-2 capability. The process should also include the inactivation of NCOP-1 at organisational nodes running on local infrastructures, and preparation of the data to be migrated (including the identification, collection, and cleaning-up of the data to be migrated).
- 4.4.4.4. This plan shall contain a list of Site Points of Contact (POCs) and their associated contact data.
- 4.4.4.5. The Contractor shall solve all integration and interface problems within NCOP-2 that may occur during the installation.
- 4.4.4.6. The Purchaser reserves the right to suspend the Contractor's installation or activation work for up to two (2) working days to avoid interfering with or disrupting a critical operational event. If this suspension exceeds two (2) working days, an adjustment of the Contract Line Item Number (CLIN) price can be submitted for consideration in connection with rescheduling efforts required. During the installation activities, if the Contractor receives any indication of a possible requirement for a suspension, this shall be made known immediately to the Purchaser's Project Manager.
- 4.4.4.7. The System Implementation Plan shall be accompanied with a generic site survey workbooks and checklists (for installation node and organisational node), fill-in forms, installation sketches, contact information, installation

specifications, and any other documentation required to perform the site survey.

- 4.4.4.8. The System Implementation Plan shall include "back-out" procedures for deactivating and removing installed NCOP-2 components and restoring existing services if any part of the NCOP-2 capability is found to be interfering with the operation of other Purchaser systems.
- 4.4.4.9. The System Implementation Plan shall be structured so that general implementation information is maintained in the body of the plan and site-specific details are kept as annexes.
- 4.4.4.10. The Contractor shall maintain the plan on the Project Website and update it to reflect changes in the SRS and SOW.
- 4.4.4.11. The site installation sequence and installation dates shall be co-ordinated with the Site POCs to accommodate site-specific requirements, exercises, holiday periods, and other considerations and shall be approved by the Purchaser.
- 4.4.4.12. The Contractor shall be able to conduct parallel installations in different locations at the same time, as required to meet the project milestones.
- 4.4.4.13. The System Implementation Plan shall be accompanied with a System Implementation Schedule. The System Implementation Schedule shall provide information in good detail which team/person will be involved in the installation and activation activities for each location, and shall be updated continuously to reflect the latest plans and executed activities.
- 4.4.4.14. The System Implementation Schedule shall be aligned with the Training Plan.
- 4.4.4.15. Any site specific information shall be attached as Annex to the System Implementation Plan.
- 4.4.5. Site Survey Workbooks
  - 4.4.5.1. The System Implementation Plan shall include a survey by organisational nodes installed and activated. The workbooks should include all of the required checklists, fill-in forms, installation sketches, contact information, installation specifications, and any other documentation required to perform the site survey.
  - 4.4.5.2. The Site Survey Workbooks (both for the Installation Sites and Organisational Nodes) shall be available for Purchaser review and comment and shall be maintained and updated as necessary to support installation site and organisational node surveys throughout the period of performance of this Contract.
- 4.4.6. Site Surveys
  - 4.4.6.1. The Contractor shall survey all installation sites and organisational nodes within the scope of this Contract.

- 4.4.6.2. The Contractor shall organise a meeting with each site, at which it is required to install and/or activate elements of the NCOP-2 BLs; survey physical, logistical, and system configuration requirements to support NCOP-2 installation; and interview site personnel involved in NCOP-2, training, organisational node activation, and use.
- 4.4.6.3. The site surveys may be conducted with the Purchaser's representatives, and the duration is estimated at two working days (without travel time) for each of the sites.
- 4.4.6.4. The Contractor shall give notice in well in advance to co-ordinate with the Purchaser access to any classified spaces which require an escort.
- 4.4.6.5. Site Survey for Installation Site:
- 4.4.6.5.1. The Site Survey for Installation Sites will be used to determine the site's infrastructural capabilities including the status of the NATO Communication Infrastructure at the time of deployment. As a minimum the site survey for the installation sites shall be used to address the following:
- Co-ordination of site installation periods ;
  - Survey of the physical infrastructure (server rooms, site layout, etc.) and identification of missing infrastructure elements ;
  - Coordination of the node installations with the site, identifying all responsibilities, tasks, their sequence and required resources (e.g., space, personnel, data) ;
  - Identification of the exact shipment addresses and NATO Points of Contact (POCs) for subsequent equipment delivery ;
  - Identification and documentation of any minor elements not addressed in other project documentation ;
  - Coordination of a proposed work schedule ;
  - Identification of availability of hardware / software capacity (meeting the NCOP-2 requirements) to be used for the NCOP-2 system and determination of whether additional server capacity for NCOP-2 is needed ;
  - Identification of site specific policies for requirements to server hardware that apply to the NCOP-2 installations ;
  - Identification of data provider systems that need to exchange information with the NCOP-2 system ;
  - Security considerations such as physical (for facilities) and logical access (for NATO systems) requirements and restrictions ;
  - Facility and infrastructure requirements for the training provision ;
- 4.4.6.6. Site Survey for Organisational Nodes:
- 4.4.6.6.1. The Site Survey for Organisational Nodes will be used to determine the requirements for the activation of the applicable users, the training, and data

migration at each node. As a minimum the site survey for the organisational nodes shall be used to address the following:

- Coordination of organisational node activation periods ;
- Survey of the users and their profiles ;
- Coordination of activation with the node, identifying all responsibilities, tasks, their sequence and required resources (e.g., space, personnel, data) ;
- Identification of the exact shipment addresses and NATO Points of Contact for any delivery (e.g., in support of the training) ;
- Identification and documentation of any minor elements not addressed in other project documentation ;
- Coordination of a proposed work schedule ;
- Identification of data provider systems that need to exchange information with the NCOP-2 system, and the configuration needs for interoperability with NCOP-2 ;
- Coordination of the transition actions from NCOP-1 to NCOP-2;
- Identification of migration strategy with the site, including identification of data to be migrated, data preparation needs ;
- Identification of any local processes or procedures which may impact the development of a Standard Operating Picture (SOP) specific to the organisational node ;
- Security considerations such as physical (for facilities) and logical access (for NATO systems) requirements and restrictions ;
- Facility and infrastructure requirements for the training provision

#### 4.4.6.7. Site Survey Reports

4.4.6.7.1. The Contractor shall provide a separate Site Survey Report for each site and organisational node, detailing its findings, identifying all required Purchaser and Contractor actions to prepare for, conduct, or support NCOP-2 installation and activation, conduct of OT&E and identifying the type of training courses required and the number of site staff to be trained for each course.

4.4.6.7.2. The Contractor shall deliver each Site Survey Report to the Purchaser no later than one (1) week after the conduct of the survey.

4.4.6.7.3. At a minimum, the Site Survey Report for Installation Sites shall include the following subjects:

- Infrastructure
  - Available computing environment (physical and virtualised) ;
  - Network infrastructure ;
  - NATO Communication Infrastructure ;
  - System location, space and ventilation ;
- Installation

- Stakeholders communication ;
  - System installation requirements ;
  - Schedule of installation activities ;
  - Contact details of security responsibilities ;
  - Interconnection details ;
  - Network diagrams ;
- 4.4.6.7.4. The Site Survey Report for an Installation Site shall provide an annex with a list of all preparations required to support the installation the NCOP-2 capability at the site.
- 4.4.6.7.5. The Site Survey Report for an Installation Site shall register all findings that require modification of the site infrastructure or change of the agreed implementation scope. For each of the changes the Contractor shall produce a formal change proposal.
- 4.4.6.7.6. In case the Site Infrastructure has to be augmented, the Contractor shall inform the Purchaser of the necessary changes and the Purchaser will make necessary arrangements with the Site POC to reflect the infrastructure upgrade.
- 4.4.6.7.7. For each out-of-scope item that requires either technical support or procurement activity, the Contractor shall offer a proposal to the Purchaser with his recommended solution.
- 4.4.6.7.8. The Contractor shall monitor the progress of any required Purchaser facilities preparations and ensure that anything that may delay installation is brought to the attention of the Purchaser promptly.
- 4.4.6.7.9. At a minimum, the Site Survey Report for Organisational Nodes shall include the following subjects:
- Users and activation:
    - Information about user profiles ;
    - Training needs of the users ;
    - Any specific activation requirements, including interoperability configuration specific to that node ;
    - Scheduling of the activation activities ;
  - Data migration
    - Information about data to be migrated and collection means ;
    - Data preparation needs ;
    - Information about scheduling of data migration activities ;
    - Training Delivery ;
    - Information about related facilities at the node, arrangement needs ;
    - Identified needs for the training delivery (e.g., any equipment needed to be brought) ;

- Scheduling of the training activities ;
  - Operational Testing and Evaluation
    - Information about any material, processes, and procedures impacting the development of SOP ;
    - Scheduling of OT&E activities ;
- 4.4.6.7.10. The Site Survey Report for an Organisational Node shall provide an annex with a list of all preparations required to support the activation of the NCOP-2 capability at the node.
- 4.4.6.7.11. The Site Survey Report for and Organisational Node shall register all findings that require modification of the site infrastructure or change of the agreed implementation scope. For each of the changes the Contractor shall produce a formal change proposal.
- 4.4.6.7.12. For each out-of-scope item that requires either technical support or procurement activity, the Contractor shall offer a proposal to the Purchaser with his recommended solution.
- 4.4.6.7.13. The Contractor shall monitor the progress of any required Purchaser facilities preparations and ensure that anything that may delay activation is brought to the attention of the Purchaser promptly.
- 4.4.7. Site Node Installation
- 4.4.7.1. The Contractor shall apply the Back-Out Plan (e.g. taking snapshots of the Virtual Machines of the affected servers) to restore the previous service in case the new deployment causes serious business impact.
- 4.4.7.2. The Contractor shall provide support to the Purchaser to ensure the integrity of the installed baseline is maintained and be prepared to execute the Back-Out Plan in the event of a major incident or problem.
- 4.4.7.3. The Contractor shall install and configure the baselined NCOP-2 operational Product Baseline, along with any supporting/COTS software and documentation associated with the baseline, on the designated Purchaser environment.
- 4.4.7.4. During installation, the service interruption shall be kept to minimum. Precautions shall be taken for not losing any data, as any loss of data is unacceptable. Any system downtime occurring during normal business hours shall be coordinated and agreed with the Site POC.
- 4.4.7.5. During the installation activities, the Contractor shall utilize the baseline documentation provided to the Purchaser such as installation instructions, configuration files and procedures, back-out procedures. The Contractor

shall update the documentation based on the outcomes of the implementation activities, if required.

4.4.7.6. Installation Test Plan

4.4.7.6.1. The Contractor shall provide Installation Test Plan to ensure that NCOP-2 installation completes without any problem. Any procedure specific to a site (i.e., the site specific configuration metrics and settings) shall be delivered as an Annex to the Installation Test Plan.

4.4.7.7. Installation Node Report:

4.4.7.7.1. The Contractor shall provide an Installation Node Report Template in support of the Implementation Readiness Review. The Contractor shall provide a Site Installation Report for each NCOP-2 BL and each Installation Node. The Node Installation Report shall be signed by the Contractor and Site Point of Contact, and it shall include the following as minimum:

- The preparation activities done before the Site Installations ;
- Information about the technical configuration ;
- The results of the Installation Test Plan performed at the site ;
- Any major problems/issues experienced during the installation and the solution applied ;
- Any issues/corrections required with regard to the Site Installation (the Contract shall register these issues into Site Issue Log as Annex to this report) ;
- Any risks identified during Site Activation (the Contractor shall register these risks in the Risk Log) ;
- Any updates to the baseline documentation ;

4.4.7.7.2. The Site Installation Report Template and the Site Installation Reports shall be reviewed and approved by the Purchaser.

4.4.8. Organisational Node Activation

4.4.8.1. The Contractor shall carry out the Site Activation Procedure which is a part of SIP (e.g., availability of the data to be migrated, information on the users) in order to ensure the readiness of the organisational node for the activation.

4.4.8.2. The activation of an organisational node will be completed when NCOP-2 and its local integration with other system are configured for all users of that site, data is migrated from NCOP-1 to NCOP-2, the usage of NCOP-1 is deactivated at that node, and the required training for that node is delivered for both user and COP and Functional Area Services (FAS) Managers.

4.4.8.3. During activation and migration, the service interruption shall be kept to minimum. Precautions shall be taken for not losing any data, as any loss of



data is unacceptable. Any system downtime occurring during normal business hours shall be coordinated and agreed with the Organisational Node POC.

4.4.8.4. Activation Test Plan:

4.4.8.4.1. The Contractor shall provide Activation Test Plan to ensure that NCOP-2 is operated by the users of that node without any problem. Any procedure specific to a node shall be delivered as an Annex to the Activation Test Plan.

4.4.8.5. Activation Report

4.4.8.5.1. The Contractor shall provide an Organisational Node Activation Report Template in support of the Implementation Readiness Review. The Contractor shall provide an Organisational Node Activation Report for each NCOP-2 BL and each site. The Organisational Node Activation Report shall be signed by the Contractor and Site Point of Contact and include the following as minimum:

- The preparation activities done before the Node Activation ;
- Information about any technical configuration required for that node ;
- The results of the Activation Test Plan performed at that site ;
- Any major problems/issues experienced during the activation and the solution applied ;
- Any issues/corrections with regard to the Node Activation (the Contract shall register these issues in the Site Issue Log with actions identified against that issue) ;
- Any risks identified during Node Activation (the Contractor shall register these risks in the Risk Log with mitigation proposals) ;
- Any actions required for the OT&E execution at that node ;
- Data Migration Report and Training Delivery Report shall be provided as an Annex. ;
- Any updates to the baseline documentation ;

4.4.8.5.2. The Organisational Node Activation Report Template and the Organisational Node Activation Reports shall be reviewed and approved by the Purchaser.

4.4.8.6. Data Migration Report

4.4.8.6.1. The Contractor shall provide a Data Migration Report for each Organisational Node about all data migration related activities conducted at the node. The Contractor shall provide the Data Migration Reports shall clearly report on any issues or pending actions/corrections impacting the overall transition from NCOP-1 to NCOP-2. The Data Migration Report shall also report on any major problems which was overcome during the migration with the solution applied for that problem.

4.4.8.6.2. The Data Migration Report Template and the Data Migration Reports shall be reviewed and approved by the Purchaser.

4.4.8.7. Training Delivery Report:

4.4.8.7.1. The Contractor shall provide a Training Delivery Report for each Organisational Node on all training delivery related activities conducted at that node, and also on the training delivery provided to the Operational Trainers. The Training Delivery Report shall include minimum:

- the trainings given at that node with attendee and instructor information;
- the feedback collected by the training attendees collected via the Course Evaluation feedback form ;
- any corrections/updates required for the Training Material ;

4.4.8.7.2. The Training Delivery Report Template and the Training Delivery Reports shall be reviewed and approved by the Purchaser.

4.4.9. Operational Test and Evaluation

4.4.9.1. The Contractor will perform an OT&E session immediately following the activation of each NCOP-2 BL at an organisational node.

4.4.9.2. An OT&E session shall take at minimum ten (10) working days.

4.4.9.3. At any time, no more than two (2) OT&E sessions can be carried out in parallel.

4.4.9.4. An OT&E session for an Organisational Node shall be planned no later than one (1) week after the ONA of that Organisational Node.

4.4.9.5. OT&E Daily Log

4.4.9.5.1. The Contractor shall keep a daily log to keep records of each day executed for OT&E. The daily OT&E Logs at an Organisational Node shall be used for the production of OT&E report for that node. Any issues, or problems arise during any OT&E event shall be recorded as an issue in the Project Issue Log.

4.4.9.5.2. The Contractor shall produce OT&E Daily Log Templates. The OT&E Daily Log Templates and Daily Logs shall be reviewed and approved by the Purchaser.

4.4.9.6. Standard Operating Procedures

4.4.9.6.1. The Contractor shall produce Standard Operating Procedures (SOPs) to describe the tailored usage of each NCOP-2 BL at an organisational node.

4.4.9.6.2. The Contractor shall work with NCOP-2 Operational Trainers, NCOP-2 Administrator Trainers and relevant, appointed staff from NATO HQs in developing and documenting the SOPs.

4.4.9.6.3. The SOPs shall be documented based on a template for NATO SOPs.

4.4.9.6.4. One master SOP document shall be developed. This master SOP document shall be tailored to specific SOPs for all NATO Commands where NCOP-2 is to be implemented.

4.4.9.6.5. The SOPs shall be reviewed and approved by the Purchaser and relevant staff from NATO HQs.

#### 4.4.9.7. OT&E Reports

4.4.9.7.1. The Contractor shall deliver OT&E Report Template in support of the OT&E Readiness Review. The Contractor shall provide an OT&E report for each organisational node following the OT&E event at that site. Each OT&E report shall include at minimum:

- a summary of preparation activities for the OT&E session ;
- any known issues at that site before the OT&E session ;
- operational scenarios exercised by the users during the OT&E session and users' feedback ;
- issues recorded and solutions provided ;
- any pending issues and any implications on the plans to solve those issues ;
- any issues regarding the product itself and proposed to be resolved by the WP1 Contractor ;

4.4.9.8. The OT&E Report Templates and OT&E Reports shall be reviewed and approved by the Purchaser.

### 4.5. Integrated Logistics Support (ILS)

#### 4.5.1. Integrated Logistic Support Plan (ILSP)

4.5.1.1. The Contractor shall provide and maintain an Integrated Logistic Support (ILS) Plan, tailored to the Project Program phases and in accordance with the requirements in this section.

4.5.1.2. The Contractor shall detail in the ILS Plan how Integrated Logistic Support will be designed, resourced (i.e. Contractor's organization and personnel), managed, procured and provided throughout the system lifetime detailing the activities and deliverables required within the project scope.

4.5.1.3. The Contractor's ILSP shall have an annex dedicated to the transition aspects from NCOP-1 to NCOP2 BL1.

- 4.5.1.4. The Contractor's ILSP shall have an In-Service Support annex detailing the warranty and support services to be provided by the Contractor during implementation (transition) and during operational phase of the NCOP-2 software in accordance with the requirements.
- 4.5.1.5. The Contractor's In-Service Support annex shall provide sufficient details to show compliance with the contractual support requirements; at minimum this annex shall describe the Contractor's organization, PoCs, support level definitions and responsibilities, response times and metrics, procedures to follow for Incident and Problem Management or other support requests in line with the defined scope within SOW.
- 4.5.1.6. The Contractor's ILSP shall be provided to the Purchaser for review and acceptance, and shall be updated as required throughout the project implementation.
- 4.5.1.7. The acceptance of the ILSP by the Purchaser signifies only that the Purchaser agrees to the Contractor's approach in meeting the requirements. This acceptance in no way relieves the Contractor from its responsibilities to meet the requirements stated in this Contract.
- 4.5.1.8. The Contractor shall maintain and update the ILSP with its annexes as required to reflect changes in the Project Baselines, especially between the NCOP-2 BL1 and BL2.

#### 4.5.2. Maintenance and Support Concept

##### 4.5.2.1. Definitions

###### 4.5.2.1.1. Support Concept

4.5.2.1.1.1. The Support concept is the set of activities and processes in charge of managing the various level of maintenance and to escalate the problem to the appropriate level in accordance with the defined responsibilities.

4.5.2.1.1.2. It is based on the Incident management process defined in ISO/IEC 20000 and ITIL framework or equivalent.

4.5.2.1.1.3. The Service management is divided in four different level of service, which interface each other, in order to activate the proper level of maintenance in accordance with the event happened on the system.

###### 4.5.2.1.2. First Level Support Process

4.5.2.1.2.1. The 1st Level Support Process implements the Incident Management process in accordance with the ISO/IEC 20000 and ITIL framework or equivalent;

4.5.2.1.2.2. As part of the Incident Management, the Service Desk receives the issue from the user, puts it into a standard format (Trouble Ticket (TT)), performs an initial assessment and distributes it to the predefined actors to solve it.

#### 4.5.2.1.3. Second Level Support Process

4.5.2.1.3.1. The 2nd Level Support Process implements the Problem Management process in accordance with the ISO/IEC 20000 and ITIL framework or equivalent;

4.5.2.1.3.2. The Problem Management process receives the TT from the Service Desk and performs the following tasks (not limited to):

- (Re-)evaluation of TT category, criticality and priority,
- Identification of the root cause of the issue (e.g. by issue replication testing),
- Identification of workarounds,
- Identification and initial planning of possible short, medium and long-term solutions (e.g. workarounds, patches, or new baseline or CI releases),
- Create Problem Analysis Report and Change Request incl. schedule of implementation, and synchronisation with the Baseline Maintenance process;
- Presentation of the Problem Analysis Report and Change Request to the CCB for approval,
- Monitor and Control the approved Change Request during implementation,
- Trigger 3rd Level Support and/or 3rd Level Maintenance process to implement the Change Request, in case the incident cannot be solved at 2nd level;
- Perform the post- Change Request implementation review.

#### 4.5.2.1.4. Third Level Support Process

4.5.2.1.4.1. The 3rd Level Support Process implements the Deployment and Release Management process in accordance with the ISO/IEC 20000 and ITIL framework or equivalent.

4.5.2.1.4.2. The Deployment and Release Management process receives the approved Change Request from the 2nd Level Support and performs the following tasks (not limited to):

- activating Level 3 maintenance when new solutions shall be developed Release of the solution (release unit/record);
- Development of the solution (e.g. new CI Fix, Repair, Replacement, Patch, or Release);
- Testing of the solution (e.g. Regression testing, issue/deficiency replication testing);
- Update of baseline content and status;
- release of the solution (release unit/record);
- Delivery and deployment of the solution.

#### 4.5.2.1.5. Maintenance Concept

4.5.2.1.5.1. The Maintenance Concept is the set of activities and processes in charge of restoring the system functionality in the shortest time possible.

4.5.2.1.5.2. All proactive Maintenance tasks are defined in the Service/Capability and Site specific O&M Manuals (What) and corresponding Procedures (How) and scheduled in the Maintenance Plan.

4.5.2.1.5.3. Reactive Maintenance activities are triggered by Incident and Change Requests coming either from the Service Customer via the Customer Support Services or from the OEM/Vendor

#### 4.5.2.1.6. First Level of Maintenance (SL1)

4.5.2.1.6.1. It is responsible for the very basic maintenance activities including the software failure recovery by simple diagnostics, data back-up or restart by site personnel. It is responsible to activate the second level of maintenance when it is needed.

4.5.2.1.6.2. It implements the initial preventive Maintenance procedures and any additional Service/Capability and/or site specific procedures that are defined in the corresponding O&M Manual. All 1st Level Maintenance procedures do not require specialised tools and/or specialised personnel.

#### 4.5.2.1.7. Second Level of Maintenance (SL2)

4.5.2.1.7.1. It is responsible of isolation and resolution of system-level maintenance and management of deficiency reports and repair including the simple SW customizations, SW reloading/installation, execution of scripts, management of users/profiles usually performed by system administrators. It is responsible to activate the third level of maintenance when it is needed.

4.5.2.1.7.2. It implements the initial preventive Maintenance procedures and any additional Service/Capability and/or site specific procedures that are

defined in the corresponding Manual. All 2nd Level Maintenance procedures do not require specialised tools and/or specialised personnel.

#### 4.5.2.1.8. Third Level of Maintenance (SL3)

4.5.2.1.8.1. It is responsible of any support that involves a change to the system baseline, such as software patches or new releases including the bug recording and reporting, advanced troubleshooting and configuration changes with the changing environment. Third level maintenance is activated by third level support and can be initiated either to define the solution to a problem (corrective maintenance) or to maintain up to date software configuration (adaptive maintenance following changes to the underpinning hardware, firmware and software environment) e.g. security patches, operating system upgrades, minor software configuration changes due to operational/interface needs requested.

4.5.2.1.8.2. It implement the initial preventive Maintenance procedures and any additional Service/Capability and/or site specific procedures that are defined in the corresponding Manual. 3rd Level Maintenance procedures can require specialised tools and/or Personnel such as software architects, programmers, advanced system administrators and specialists.

#### 4.5.2.1.9. Fourth Level of Maintenance (SL4)

4.5.2.1.9.1. It is the responsibility of the software original developer under warranty or through separate agreements outside the warranty duration. It is activated from the 3rd level of maintenance only when it is needed and requires debugging, re-coding and testing (both in simulated and emulated environments), patch creation and deployment.

#### 4.5.2.2. Responsibilities

4.5.2.2.1. The Contractor shall develop and maintain the Maintenance and Support Concept that defines the maintenance and support environment, constraints, locations, procedures, artefacts, organisation and personnel skills to maintain the Delivered baselines of the platform.

4.5.2.2.2. The Contractor shall be responsible for Level 3 maintenance and support activities that is beyond the Purchaser capability, and was not provided through documentation and training.

4.5.2.2.3. The Contractor shall design/deliver the elements such as documentation, training, instructions, and resources (skills, tools/test equipment) in order to

allow the Purchaser to operate, install, and configure the system. Such elements shall be delivered before the PSA in their final form.

4.5.2.2.4. Starting from PSA and until the end of warranty period, the maintenance activities beyond Purchaser capabilities/skills (as per Maintenance Concept and Contractor delivered training and documentation) required to restore the System from a critical failure shall be carried on by the Contractor by dedicated on-site interventions and/or off-site resolutions. Such interventions and failures will be limited to the ones triggered due to the implementation and installation activities.

4.5.2.2.5. For such system failures outlined above, the Contractor shall ensure system restoration within 2 days of Purchaser notification providing workarounds; and within 10 calendar days for providing the final resolution.

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

#### 4.5.3. Supply Support

##### 4.5.3.1. System Inventory

4.5.3.1.1. The Contractor shall provide the Purchaser's ILS POC with a System Inventory in electronic Microsoft Excel format at least 14 (fourteen) calendar days before each delivery of Software (SW).

4.5.3.1.2. The Contractor's System Inventory is site-specific (per site, CLIN and baseline) and shall include, in separate chapters, all items furnished under this Contract, as follows:

- a. all SW – i.e. all licenses, software tools, SW test equipment, etc. (where applicable);
- b. all Purchaser Furnished Equipment (PFE); (where applicable);
- c. all documentation, such as installation instructions, manuals, handbooks and drawings;
- d. all training materials.

##### 4.5.3.2. Tools and Test Equipment

4.5.3.2.1. The Contractor shall deliver a fully detailed and priced Recommended Tools and Test Software List (RTTL), covering the “Standard” Tools and Test Software that was used during the implementation and installation activities.

4.5.3.2.2. The Contractor shall provide “Special to Type” tools and/or test software if required, in particular on the Reference System and/or on the Testbed.



4.5.4. Technical Documentation

4.5.4.1. General

4.5.4.1.1. Technical documentation shall be prepared in accordance with the requirements outlined in this section and be kept updated by the Contractor and under configuration control for the entire life cycle of the system.

4.5.4.1.2. The information contained in each technical documentation shall be coherent with the operational configuration (OBL) deployed.

4.5.4.1.3. Technical documentation shall consist (as a minimum) of:

4.5.4.1.3.1. Training material

4.5.4.1.3.2. Installation and Configuration Guide;

4.5.4.1.3.3. other project documentation as required in this SoW.

4.5.4.1.4. All the technical documentation shall be provided by the Contractor in electronic and editable form.

4.5.4.1.5. The Contractor shall provide all the technical documentation in the British English language.

4.5.4.1.6. The Contractor shall maintain lowest level possible for Classification of the Technical documentation. The security classification of any on line Contractor's documentation shall not be higher than NATO UNCLASSIFIED.

4.5.4.1.7. All Contractor's documents, however short, shall identify the complete name and version identifier of the software they refer to, originator, date of production, the type of document, and configuration management information of the document itself.

4.5.4.1.8. All Contractor's documents shall contain a list of those CIs (title and version identifier) that the document or parts thereof refers to.

4.5.4.1.9. The Contractor shall submit all final and accepted versions of documentation deliverables in PDF, with an OCR (Object Character Recognition) capability format or in Microsoft Office Professional (MsWord) compatible format.

4.5.4.1.10. The Contractor shall submit documentation, intended for review by the Purchaser, with each modification identified through the change tracking feature or otherwise marked.

4.5.4.1.11. The Contractor shall provide the initial versions of the technical documentation at least 8 weeks prior to the official delivery dates stipulated in the SSS to enable the Purchaser to review the technical content and leave the Contractor sufficient time to update the documents accordingly.

4.5.4.1.12. The Contractor shall provide the initial and final versions of each set of document defined in this section both for BL1 and BL2 in accordance with the defined milestones for each baseline.

4.5.4.2. Installation and Configuration Guide for Implementation

N A T O U N C L A S S I F I E D

4.5.4.2.1. The Contractor shall develop, provide and maintain the System Installation Configuration Guide to include minimum the following:

- Prerequisites for installing NCOP-2 (e.g. the necessary operating system access right to perform installation)
- The necessary supplementary software, drivers, etc. to install NCOP-2
- Configuration file information (location, content, available settings of the items and their meaning)
- How to modify the configuration file
- Software configuration details for different platforms
- Software installation and configuration tasks, detailed step by step with screenshots of the system feedback which will be displayed after each action
- Configuration settings
- Step by step installation instructions, including site-specific considerations
- Procedures for data migration
- Troubleshooting procedures and known errors during the installation activities.

4.5.4.3. Amendments to documentation

4.5.4.3.1. 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.

4.5.4.3.2. The Contractor shall release the documentation for each baseline, BL1 and BL2. For that, the Contractor shall amend and re-release the whole documentation set for BL2, clearly summarizing the changes between two baselines and operational and maintenance tasks.

4.5.4.3.3. Upon Purchaser request, the Contractor shall amend any documentation listed in 5.8.1.5 until the end of warranty, to complete or correct any information. This shall include the amendments triggered by the patch releases and bug fixing activities.

4.5.4.3.4. For that purpose, the Contractor shall provide the necessary data (in written form) to complete/correct the missing/incorrect information within 5 business day upon written request from the Purchaser.

4.5.4.3.5. The Contractor shall, at minimum, amend the documentation and deliver it in final form before PSA, FSA and end of warranty. The frequency for the in-between releases (PSA-FSA and during warranty) will be agreed by both parties to minimize the administrative burden, and ensure faster communication in case of an urgent information need.

4.5.4.4. Document Issuing Schedule

- 4.5.4.4.1. The Contractor shall test and validate the procedures and resources described in the technical documentation.
- 4.5.4.4.2. Not later than two (2) months prior to the delivery of the System at the first location, the Contractor shall submit a copy of the draft to the Purchaser for review.
- 4.5.4.4.3. Any resulting recommended changes, corrections and/or additions submitted by the Purchaser will be incorporated by the Contractor in the final version.
- 4.5.4.4.4. The Contractor shall provide the final versions of each technical documentation, in the requisite number of copies within four (4) weeks of FSA.
- 4.5.4.4.5. 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.

#### 4.5.5. Warranty and Support

##### 4.5.5.1. General

- 4.5.5.1.1. The Contractor shall warrant that all documentation and implementation activities performed and delivered under this Contract conform to the requirements of this contract and standards that are referred to, and is free of any code or workmanship for a period starting at date of BL1 implementations acceptance to the date of BL2 FSA plus one (1) year. Therefore, the warranty period shall last till BL2 FSA plus one year covering the BL1 functionalities within BL2 baseline warranty.
- 4.5.5.1.2. The Contractor shall detail the activities for the warranty execution within the ILS Plan in accordance with the requirements provided in this section.
- 4.5.5.1.3. The warranty support shall be applicable to all Product baseline CIs delivered under this contract, without requiring further explicit reference.
- 4.5.5.1.4. The Contractor shall assign a PoC to manage and maintain a direct communication with the Purchaser to carry out the warranty activities.
- 4.5.5.1.5. If the Contractor becomes aware at any time before the end of this contract (FSA + 1 year) by the Purchaser that a defect exists in any supplies, the Contractor shall coordinate with the Purchaser and correct the defect accordingly with warranty requirement.
- 4.5.5.1.6. In case of any blocking or critical bug, the Contractor shall apply a workaround and perform the implementation within 3 (three) days after the release of the patch or new baseline without any additional cost to the Purchaser.
- 4.5.5.1.7. In case of non-blocking bugs, the Contractor shall implement a corrective baseline at the end of each quarter without any additional cost to the

Purchaser. Before the end of the warranty, the Contractor shall implement the final release including all the remaining patches resolving the non-critical bugs.

- 4.5.5.1.8. The Contractor shall provide on-site support on the request of the Purchaser for the warranty cases that cannot be resolved remotely. This support will cover any incident which cannot be handled remotely or needs a local expertise. This support shall be exceptional and only to fulfil the warranty requirements within the scope of the contract.
- 4.5.5.1.9. In case there is a failure on the system triggered by the implementation and installation activities, the Contractor shall dispatch a field engineer to troubleshoot, re-install and restore the system as required. Such intervention shall take place within 3 (three) days of the written notification (including e-mails) by the Purchaser, without any additional cost to the Purchaser.
- 4.5.5.1.10. For any breach of this warranty, the Purchaser's exclusive remedy and the Contractor's entire liability shall be the re-performance of the deficient services or replacement of the deficient components, and if the Contractor fails to re-perform the services as warranted, the Purchaser is entitled to recover the fees the Purchaser paid the Contractor for those deficient services or components.
- 4.5.5.1.11. During the Warranty Period all problems reported by the Purchaser that are encountered shall be added to a problem log, together with a clear description of the problem and including classification. The entries in the Problem Log shall include, but not be limited to, the following information:

Serial	Requirement
1	Software Item, Component or Module.
2	Problem Description.
3	Date Occurred.
4	Business Impact (Severity).
5	Priority.

- 4.5.5.1.12. This classification, as well as the classification of each logged problem, shall be jointly agreed by the Purchaser and the Contractor.
- 4.5.5.1.13. The Contractor shall provide technical assistance by Internet electronic mail, and shall maintain a trouble-ticketing system to track all activities under warranty.

## 5.PROJECT MILESTONES, REVIEWS AND DELIVERABLES

### 5.1. Milestones

5.1.1. There are some formal milestones (tied to payments) where a Review/Gate check is conducted. Table 5-1 shows the formal project milestones.

Abb.	Title	Occurrence	Payment
EDC	Effective Date of Contract	Once	No
KOM	Project Kick-off Meeting	Once	No
PMR	Project Management Review	Once	Yes
TAR	Training Analysis Review	Once	Yes
TDR	Training Design Review	For each BL	Yes
TMR	Training Material Review	For each BL	Yes
IDR	Implementation Design Review	For each BL	Yes
IRR	Implementation Readiness	For each BL	No
INA	Installation Node Acceptance	For each BL and each installation node	No
ONA	Organisational Node Acceptance	For each BL and each organisational node	No
CIA	Combined Implementation	For each BL	Yes
OTERR	Operational Test and Evaluation Readiness Review	For each BL and each organisational node	No
PSA	Provisional System	Once	Yes
FSA	Final System Acceptance	Once	Yes

Table 5-1 – List of Project Milestones

### 5.2. Timeline

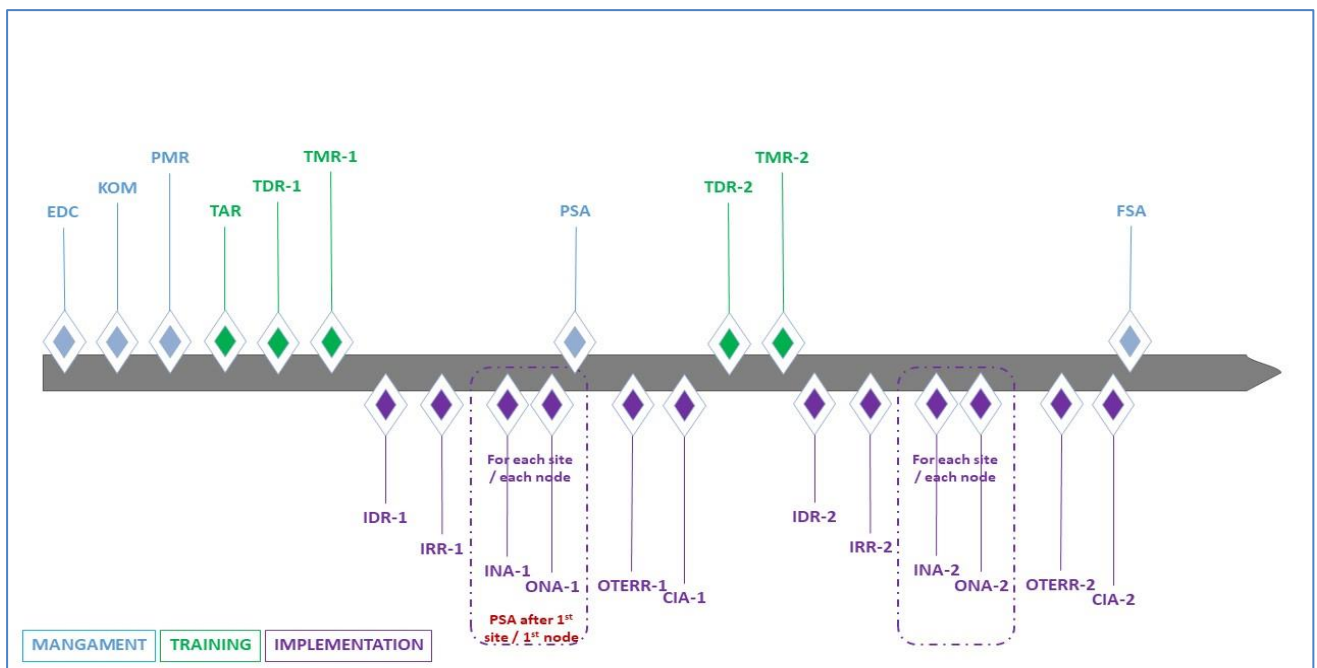


Figure 3 – NCOP Timeline

**5.3. Project Kick-Off Meeting (KOM)**

- 5.3.1. The Contractor shall participate in the project kick-off meeting (KOM) with the Purchaser and members of the user community.
- 5.3.2. KOM shall be held via video conference capability.
- 5.3.3. The Contractor shall present:
  - the initial Project Management Plan (PMP) ;
  - review the organisation of the Project Website ;
  - review Assumptions and Restrictions ;
  - an initial risk review ;
- 5.3.4. KOM shall be held not later than two (2) weeks after EDC.

**5.4. Project Management Review (PMR)**

- 5.4.1. The purpose of the PMR is to approve the planned Contractor’s activities to be provided during this Contract.
- 5.4.2. The Contractor shall provide the deliverables listed in Table 5-2 for PMR:

*Table 5-2 - PMR Deliverables*

<b>Deliverable</b>	<b>SOW Reference</b>
Project Management Plan (PMP)	§3.10
Product Breakdown Structure (PBS) (Annex to PMP)	§3.11
Project Work Breakdown Structure (WBS) (Annex to PMP)	§3.12
Project Master Schedule (PMS) (Annex to PMP)	§3.13
Risks, Assumptions, Issues, Decisions (RAID) Log	§3.15
Configuration Management (CM) Plan	§3.17.1
Configuration Management Database	§3.17
Sample Change Request form and Change Log	§3.17.3
Deficiency Report Form	§3.17.9
Quality Assurance Plan (QAP)	§3.18.2
Quality Log	§3.18.2.2
Lessons Learned Log	§3.16.1
Sample Project Highlight Report (PHR)	§3.19.7
Training Plan	§4.3.12
Integrated Logistics Support (ILS) Plan	§4.5.14.3.12

- 5.4.3. Entry Criteria
  - 5.4.3.1. The following criteria shall be met to enter this milestone:
    - The Contractor has delivered the required deliverables ;
    - The Purchaser has reviewed all deliverables
  - 5.4.4. Success Criteria
    - The resulting overall management concept is reasonable, feasible, complete, responsive to the operational requirements, and is consistent

with project requirements and available resources (cost, schedule, staff, etc.) ;

- Approaches sufficiently cover the planning, deploying, training and providing of OT&E for NCOP-2 ;
- Major risks have been identified, and viable mitigation strategies have been defined. Steps to mitigate risks are identified in the Risk Log ;
- Purchaser approval of the content of all PMR deliverables ;

5.4.5. PMR shall not take later than 2 weeks after KOM.

**5.5. Training Analysis Review (TAR)**

5.5.1. The purpose of the TAR is to conduct the initial Training Needs Analysis and develop Course Control Documents I & II of the courses identified proposed as training solutions. TAR shall be compliant with the Bi-SC Directive 75-7.

5.5.2. The scope of TAR shall cover the whole scope of NCOP-2 and shall not focus on only one BL.

5.5.3. The Contractor shall provide the deliverables listed in Table 5-3 for TAR:

*Table 5-3 - TAR Deliverables*

<b>Deliverable</b>	<b>SOW Reference</b>
The initial version TNA Report	§4.3.12
Course Control Documents I & II for the proposed training solutions	§4.3.13.7.2 & §4.3.13.8.2

5.5.4. Entry Criteria

5.5.4.1. The following criteria shall be met to enter this milestone:

- The Contractor has delivered the required deliverables ;
- The Purchaser will provide the maximum number of trainees by session ;
- The Purchaser has reviewed all deliverables ;

5.5.5. Success Criteria

- The Purchaser has approved the content ;
- The Purchaser has verified that the deliverables are in line with Bi-SC 75-7

**5.6. Training Design Review (TDR)**

5.6.1. The purpose of the TDR is to design the training solutions which are the outcome of TAR.

5.6.2. The Contractor shall provide the deliverables listed in Table 5-4 for TDR of each BL:

*Table 5-4 - TDR Deliverables*

<b>Deliverable</b>	<b>SOW Reference</b>
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Course Control Documents III for the proposed training solutions updated with the scope of the BL	§4.3.14.4.3
The final version Training Needs Analysis Report updated with the scope of each BL	§4.3.14.5
Updated Training Plan	§4.3.12

5.6.3. Entry Criteria

5.6.3.1. The following criteria shall be met to enter this milestone:

- TAR has been successful ;
- The Contractor has delivered the required deliverables. ;
- The Purchaser has reviewed all deliverables ;

5.6.4. Success Criteria

- The Purchaser has approved the content ;
- The Purchaser has verified that the deliverables are in line with Bi-SC 75-7 ;

**5.7. Training Material Review (TMR)**

5.7.1. The purpose of the TMR is to develop the material in support of the training solutions.

5.7.2. The Contractor shall provide the deliverables listed in Table 5-5 for TMR of each BL:

*Table 5-5 - TMR Deliverables*

<b>Deliverable</b>	<b>SOW Reference</b>
For each course:	
• Training Syllabus	§4.3.15.2
• Student Manuals and Handouts	§4.3.15.3
• Instructor Guides	§4.3.15.4
• Master Lesson Plans	§4.3.15.5
• Training Presentations	§4.3.15.6
• Training Scenarios	§4.3.15.7
• Upon completion, a Training Certificate	§4.3.15.9, 3.11
Training Database	§4.3.15.8
FAQ	§4.3.15.11
Introductory Video	§4.3.15.12
Course Evaluation Feedback Form	§4.3.15.10

5.7.3. Entry Criteria

5.7.3.1. The following criteria shall be met to enter this milestone:

- TDR of the corresponding BL has been successful ;
- The Contractor has delivered the required deliverables ;
- The Purchaser has reviewed all deliverables ;

5.7.4. Success Criteria



- The Purchaser has approved the content ;
- The Purchaser has verified that the deliverables are in line with Bi-SC 75-7 ;

5.7.5. TMR shall take place at least one month earlier than the first ONA.

**5.8. Implementation Design Review (IDR)**

5.8.1. The purpose of the IDR is to identify the requirements, to define the procedures and to provide a plan for the system implementation.

5.8.2. The Contractor shall provide the deliverables listed in Table 5-6 for IDR:

*Table 5-6 - Deliverables for IDR*

<b>Deliverable</b>	<b>SOW Reference</b>
System Implementation Plan (including System Transition Plan)	§4.4.4
System Implementation Schedule	§4.4.4.13 & §4.4.4.14
Site Survey Workbook for Installation Site	§4.4.5
Site Survey Workbook for Organisational Nodes	§4.4.5
Installation Test Plan	§4.4.7.6
Activation Test Plan	§4.4.8.4
The templates for: <ul style="list-style-type: none"> <li>• Site Installation Report</li> <li>• Activation Report</li> <li>• Data Migration Report</li> <li>• Training Delivery Report</li> <li>• Installation and Configuration Guide for Implementation</li> </ul>	§4.4.7.7.2 §4.4.8.5.2 §4.4.8.6.2 §4.4.8.7.2 §4.5.4.24.3.12
Master Standard Operating Procedures	§4.4.9.6.3
Updated Training Plan	§4.3.12
Updated ILS Plan	§4.5.1
Updated CM Plan and CSA Report	§3.17.1

5.8.3. Entry Criteria

5.8.3.1. The following criteria shall be met to enter this milestone:

- The Contractor has delivered the required deliverables ;
- The Purchaser has reviewed all deliverables ;

5.8.4. Success Criteria: The Purchaser has approved the content;

5.8.5. The Contractor shall ensure sufficiently time (at least 6 months) between IDR and IRR.

**5.9. Implementation Readiness Review (IRR)**

5.9.1. The purpose of the IRR is to verify the readiness of the Contractor’s team and Purchaser’s facilities for the site installation and node activation activities.

5.9.2. The Contractor shall provide the deliverables listed in Table 5-7 for IRR of each BL:

*Table 5-7 - Deliverables of IRR*

<b>Deliverable</b>	<b>SOW Reference</b>
System Implementation Schedule (Detailed)	§4.4.4.13 & §4.4.4.14
Site Survey Report for Installation Site	§4.4.6.7.3
Site Survey Report for Organisational Nodes	§4.4.6.7.9
Updated Training Plan	§4.3.12
Any node specific annexes to SIP/Installation Test Plan/Activation Node Test Plan	§4.4.7.6 & §4.4.8.4 & §4.4.4.15
Installation and Configuration Guide for Implementation	§4.5.4.24.3.12

5.9.3. Entry Criteria

5.9.3.1. The following criteria shall be met to enter this milestone:

- The Contractor has delivered the required deliverables ;
- The Purchaser has reviewed all deliverables ;
- The Contractor OT&E staff has been identified ;

5.9.4. Success Criteria

- The Purchaser has approved the content ;
- The Purchaser has approved the OT&E staff ;

5.9.5. The Contractor shall ensure sufficiently time (at least 6 months) between IDR and IRR.

5.9.6. IRR shall take place not later than AFPL for each BL.

**5.10. Installation Node Acceptance (INA)**

5.10.1. The purpose of the INA is to verify the successful installation of NCOP-2 BL at each site.

5.10.2. The Contractor shall provide the deliverables listed in Table 5-8Table 5-7 for INA of each BL and Installation Site:

*Table 5-8 - Deliverables of INA*

<b>Deliverable</b>	<b>SOW Reference</b>
Installed Node	§4.4.7
Site Installation Node Report	§4.4.7.7

5.10.3. Entry Criteria

5.10.3.1. The following criteria shall be met to enter this milestone:

- The Contractor has delivered the required deliverables
- The Purchaser has reviewed the deliverables

- The Site Installation Report is signed by the Contractor and Site Representative.

5.10.4. Success Criteria

- The Purchaser has approved the deliverables.
- The system has been operational without any problem for 2 weeks.

**5.11. Organisational Node Acceptance (ONA)**

5.11.1. The purpose of the ONA is to verify the successful activation of each node at each NCOP-2 BL.

5.11.2. The Contractor shall provide the deliverables listed in Table 5-9 for ONA of each BL and Organisational Node:

*Table 5-9 - Deliverables of ONA*

<b>Deliverable</b>	<b>SOW Reference</b>
Activated Organisational Node	§4.4.8
Migrated data at the Node	§4.4.8.2
Delivered Combined User Course	§4.4.8.2
Delivered Combined COP/FAS Manager Course	§4.4.8.2
Activation Report	§4.4.8.5
Data Migration Report	§4.4.8.6
Training Delivery Report	§4.4.8.7

5.11.3. Entry Criteria

5.11.3.1. The following criteria shall be met to enter this milestone:

- The Contractor has migrated data.
- The Contractor has delivered the required training.
- The Contractor has delivered the required deliverables.
- The Activation Report is signed by the Contractor and Node Representative.
- The Purchaser has reviewed the deliverables.

5.11.4. Success Criteria

- The Purchaser has approved the deliverables.
- The system has been operational without any problem for 2 weeks.

**5.12. Provisional System Acceptance (PSA)**

5.12.1. PSA will be declared after NCOP-2 has been successfully accepted for the first Installation Site, Organisational Node, and the Reference Environment.

5.12.2. Entry Criteria

5.12.2.1. The following criteria shall be met to enter this milestone:

- The first site acceptance for a DC site has been approved.
- The first site acceptance for Organisational Node has been approved
- The site acceptance for the Reference environment has been approved.

5.12.3. Success Criteria

- The Purchaser has approved all site acceptances.

5.12.4. PSA shall take place not later than 6 months following AFPL for the 1<sup>st</sup> BL.

**5.13. Operational Test and Evaluation Readiness Review (OTERR)**

5.13.1. The purpose of the OTERR is to verify the readiness of each organisational node before OT&E. Separate OT&E will take for both BLs at an organisational node.

5.13.2. The Contractor shall provide the deliverables listed in Table 5-10 for (OTERR) of each BL and Organisational Node:

*Table 5-10 - Deliverables for OTERR*

<b>Deliverable</b>	<b>SOW Reference</b>
Working Standard Operating Procedures for each user site	§4.4.9.6
Updated PMS	§3.13.1
OT&E Daily Log Template	§4.4.9.5.2
OT&E Report Template	§4.4.9.7.1
Activated Organisational Node	§4.4.8

5.13.3. Entry Criteria

5.13.3.1. The following criteria shall be met to enter this milestone:

- The Contractor has delivered the required deliverables.
- The Contractor OT&E staff has been identified.
- The Purchaser has reviewed all deliverables.
- The Organisational Node has been activated.

5.13.4. Success Criteria

- The Purchaser has approved all of the deliverables
- The Purchaser has verified the availability of the users for OT&E sessions planned in System Implementation Plan.
- The Purchaser has agreed with solutions for any issues impacting OT&E execution
- The Purchaser has approved the OT&E staff.

**5.14. Combined Implementation Acceptance (CIA)**

5.14.1. CIA for a BL will be reached when installations for all Installation Sites, and activations for all Organisational Nodes within the scope of this Contract have been accepted.

5.14.2. The Contractor shall provide the deliverables listed in Table 5-11 for CIA milestone of each BL:

*Table 5-11 - Deliverables for CIA*

<b>Deliverable</b>	<b>SOW Reference</b>
Installed nodes	§4.4.7

Activated Organisational Nodes.	§4.4.8
Delivered OT&E sessions	§4.4.9
Delivered training for the Operational Trainers	§4.3.5
Training Report for the Operational Trainer Course	§4.4.8.7.1
Installation Reports for all Installation Sites	§4.4.7.7
Activation Reports for all Organisational Nodes	§4.4.8.5
OT&E Logs for all Organisational Nodes	§4.4.9.5
OT&E Reports for all Organisational Nodes	§4.4.9.7, 4.4.9.7.1

5.14.3. Entry Criteria

5.14.3.1. The following criteria shall be met to enter this milestone:

- All required training has been delivered
- All OT&E sessions are delivered.
- The Contractor has delivered all required deliverables.
- The Purchaser has reviewed all the deliverables.
- The Contractor has proposed updates to Training Database, Training Material and SOPs.

5.14.4. Success Criteria

- The Purchaser has approved all of the deliverables.
- The Purchaser has approved the proposed changes to Training Material, Training Database, and SOPs.

5.14.5. CIA of a BL shall take place not later than 6 months after AFPL of that BL.

**5.15. Final System Acceptance (FSA)**

5.15.1. FSA is the final milestone to be achieved under the Contract.

5.15.2. The Contractor shall provide the deliverables listed in Table 5-11 for FSA milestone:

*Table 5-12 - Deliverables for FSA*

<b>Deliverable</b>	<b>SOW Reference</b>
Finalised SOPs	§4.4.9.6
Finalised Training Material and Database	§4.4.8
Finalised Project Management Deliverables	§3.10.1, §3.11.2, §3.12.1, §3.13.1, §3.15.1, §3.16.1.1, §3.17.6.1, §3.18.1.1, §3.18.2.2
Lessons Learned Report	§3.16.2.1

5.15.3. Entry Criteria

5.15.3.1. The following criteria shall be met to enter this milestone:

- The Contractor has delivered the required deliverables.
- The Purchaser has reviewed all deliverables.
- The Combined Implementation Acceptance has been approved for the final BL.

5.15.4. Success Criteria: The Purchaser has approved all of the deliverables.

# 6. LABOR CATEGORIES

## 6.1. General

- 6.1.1. This section outlines minimum educational and experience qualifications for Contractor staff supporting Work Packages under this Contract. The labour categories identified shall be available to support all Task Areas as required.
- 6.1.2. Substitution of experience or education is allowed as outlined in Table 6-1.

*Table 6-1 - Experience/Education Substitution*

Education	Equivalent Education + Experience	Equivalent Experience
Associate degree		4 years of relevant experience
Bachelor degree	Associates + 2 years of relevant experience	6 years of relevant experience
Master degree	Bachelors + 4 years of experience	8 years of relevant experience

## 6.2. Management

- 6.2.1. Project Manager
- 6.2.2. Responsible for project management, performance and completion of tasks and delivery orders. Establishes and monitors project plans and schedules and has full authority to allocate resources to insure that the established and agreed upon plans and schedules are met. Manages costs, technical work, project risks, quality, and corporate performance. Manages the development of designs and prototypes, test and acceptance criteria, and implementation plans. Establishes and maintains contact with Purchaser, Subcontractors, and project team members. Provides administrative oversight, handles contractual matters and serves as a liaison between the Purchaser and corporate management. Ensures that all activities conform to the terms and conditions of the Contract and Work Package procedures.
  - 6.2.2.1. Education: Master degree in management, engineering, or business administration. Formal certification through Project Management Institute or equivalent source.
  - 6.2.2.2. Experience: At least seven years in information systems design and project management. At least two years as the project manager for an effort of similar scope and complexity, including the application of a formal project management methodology such as PRINCE2.

## 6.3. Project Management Support

- 6.3.1. Project Control Analyst
  - 6.3.1.1. Establishes and maintains project schedule and cost baseline and analyses risks and potential impacts. Prepares project highlight reports.
  - 6.3.1.2. Education: Bachelor degree.
  - 6.3.1.3. Experience: At least three years in project scheduling, project control, or project monitoring and reporting.

## **6.4. Engineering and Technical**

### **6.4.1. Senior Engineer**

6.4.1.1. Performs complex engineering tasks and multiple tasks simultaneously. Assists with or plans major research and engineering tasks or programs of high complexity. Directs and co-ordinates all activities necessary to complete a major, complex engineering program or multiple smaller tasks or programs. Performs advanced engineering research, hardware or software development.

6.4.1.2. Education: Master degree in engineering.

6.4.1.3. Experience: At least seven years in engineering positions associated with the review, design, development, evaluation, planning and operation of electrical or electronic components, subsystems, or systems for government or commercial use. Member of recognised professional body.

### **6.4.2. Senior Systems Engineer**

6.4.2.1. Plans and co-ordinates project management and engineering. Provides comprehensive definition of all aspects of system development from analysis of mission needs to verification of system performance. Competent in technical disciplines as applied to government and commercial information and communications systems. Prepares trade-off studies and evaluations for vendor equipment. Recommends design changes/enhancements for improved system performance. Supervises the work of a design, integration, test, and implementation team.

6.4.2.2. Education: Master degree in engineering or computer science.

6.4.2.3. Experience: At least seven years in system design and integration. At least five years in the design, integration, or implementation of COP systems.

### **6.4.3. Field Engineer**

6.4.3.1. Conducts site surveys, prepares implementation plans, prepares implementation procedures, supervises installation and activation, reports on installation status, manages repair and modifications to systems/equipment, performs field maintenance, and performs system configuration changes based upon approved specifications.

6.4.3.2. Education: Bachelor degree.

6.4.3.3. Experience: At least seven years in the installation and support of information systems.

### **6.4.4. Senior Technician**

6.4.4.1. Supervises technicians in the troubleshooting, repair, installation, training, integration, and upgrade of systems and equipment. Works closely with assigned engineers and systems personnel to support implementation and activation efforts.

6.4.4.2. Education: Associates degree.

6.4.4.3. Experience: At least seven years in the installation and maintenance of network and information systems.

### **6.4.5. System Management Specialist**



- 6.4.5.1. Analyses, develops, and maintains operational system configuration parameters. Establishes and implements system policy, procedures and standards, and ensures their conformance with system requirements. Ensures that security procedures are established and implemented. Provides technical assistance to operational, logistics, and system engineering staff.
- 6.4.5.2. Education: Bachelor degree and completion of a formal system administration or network management certification course.
- 6.4.5.3. Experience: At least three years in the administration of distributed information systems.
- 6.4.6. Integrated Logistics Support (ILS) and Configuration Manager
  - 6.4.6.1. Establishes, implements and manages the ILS and CM Program, analyses the requirements, defines the workflows and interfaces between the different members of the Contractor team to ensure timely delivery of ILS and CM deliverables. Creates the ILS and CM plans and schedule, ensure the coordination with the training, operational support, implementation and other project artefacts. The Contractor may separate the role of ILS Manager and CM Manager and assign different personnel for each.
  - 6.4.6.2. Education: Bachelor degree in an Engineering Discipline.
  - 6.4.6.3. Experience: At least 5 years experience in managing the ILS and CM Programs in IT or defence programs.

## **6.5. Implementation Support**

- 6.5.1. Technical Writer
  - 6.5.1.1. Develops, writes, and edits materials, briefs, proposals, instruction books, and related technical and administrative publications concerned with work methods and procedures for installation, operations and enhancement of equipment. Organises material and compiles writing assignments for clarity, conciseness, style, and terminology. Prepares and edits documentation incorporating information provided by users, and technical and operations staff. Possesses a substantial knowledge of the capabilities of computer systems. Capable of writing, editing, and generating graphic presentations.
  - 6.5.1.2. Education: Bachelor degree.
  - 6.5.1.3. Experience: At least three years as a technical writer.

## **6.6. Training Support**

- 6.6.1. Instructional Systems Designer
  - 6.6.1.1. Conducts the research, necessary to identify training needs based on performance objectives and existing skill sets; prepares training strategies and delivery methodology analyses; and prepares cost/benefit analyses for training facilities and deliverables. Develops training delivery plan, instructional guidelines, and performance standards and assessment mechanisms. Plans and directs the work of training material developers and coordinates activities with system development staff. Supervises the implementation and adaptation of training products to customer requirements.

- 6.6.1.2. Education: Bachelor Degree.
- 6.6.1.3. Experience: At least three years in the design and development of training for information systems using an Instructional Systems Design approach such as the Systems Approach to Training, Performance-Based Training, Analysis, Design, Development, Implementation, and Evaluation (ADDIE), or Criterion Referenced Instruction.
- 6.6.2. Senior Training Materials Developer
  - 6.6.2.1. Conducts the research necessary to develop and revise training courses and prepares training plans. Develops instructor (course outline, background material, and training aids) and student materials (course manuals, workbooks, handouts, completion certificates, and course feedback forms). Trains personnel by conducting formal classroom courses, workshops, seminars, and/or computer based/computer-aided training. Provides daily supervision and direction to staff.
  - 6.6.2.2. Education: Bachelor Degree.
  - 6.6.2.3. Experience: At least five years in the preparation of technical training, including CBT materials.
- 6.6.3. Senior Instructor
  - 6.6.3.1. Supervises trainers who conduct technical training classes. Conducts training classes. Works closely with Purchaser personnel to determine training and scheduling requirements. Develops and maintains training materials. Reviews and provides inputs for technical documentation.
  - 6.6.3.2. Education: Bachelor Degree.
  - 6.6.3.3. Experience: At least four years in systems administration or operation and at least four years as technical training instructor.

## **6.7. Operational Support**

- 6.7.1. System Administrator
  - 6.7.1.1. Administers systems operations and configuration. Maintains user accounts and profiles. Performs system backup and restoration procedures. Troubleshoots operational problems. Co-ordinates system configuration and performance issues with central network support staff and Purchaser site personnel.
  - 6.7.1.2. Education: Associates degree or two years of technical training.
  - 6.7.1.3. Experience: At least one year in systems administration of Windows 2012 systems. At least one year in the administration and operation of X.400 systems.
- 6.7.2. Network Manager
  - 6.7.2.1. Oversees administration and operation of network and service management applications. Develops and implements operating procedures. Administers upgrades to system support and network management components. Collects operational performance data and performs performance analysis.
  - 6.7.2.2. Education: Associates degree.

6.7.2.3. Experience: At least two years in administration and implementation of SNMP or other system support systems.

#### 6.7.3. Database Administrator

6.7.3.1. Manages network-wide configuration databases. Develops and implements data synchronisation procedures and resolves database discrepancies. Maintains and publishes network configuration tables and indices. Designs and implements queries and other utilities.

6.7.3.2. Education: Associates degree.

6.7.3.3. Experience: At least two years in database administration.

#### 6.7.4. Operational Support Manager

6.7.4.1. Organises, directs and manages operational support activities. Analyses system performance data and prepares reports and assessments. Meets with Purchaser personnel to co-ordinate support issues and co-ordinates with system implementation personnel on activation and cut-over. Ensures conformance with Work Package requirements.

6.7.4.2. Education: Bachelor degree.

6.7.4.3. Experience: At least five years in the administration and operation of a distributed information system.

### **6.8. Functional Support**

#### 6.8.1. Senior COP Functional Specialist

6.8.1.1. Provides support in the development of doctrine; operational concepts; requirements; tactics, techniques and procedures; standard operating procedures and other functional documentation. Supports testing and operational validation. Meets with Purchaser personnel to co-ordinate functional and operational implementation issues. Designs and prepares reports and related documentation.

6.8.1.2. Education: Bachelor degree.

6.8.1.3. Experience: At least seven years in the COP functional area in NATO or a NATO nation. At least three years in the development of COP doctrine; operational concepts; requirements; tactics, techniques and procedures; standard operating procedures and other functional documentation.

#### 6.8.2. Intermediate COP Functional Specialist

6.8.2.1. Provides support in the development of doctrine; operational concepts; requirements; tactics, techniques and procedures; standard operating procedures and other functional documentation. Supports testing and operational validation. Meets with Purchaser personnel to co-ordinate functional and operational implementation issues. Designs and prepares reports and related documentation.

6.8.2.2. Education: Associate degree.

6.8.2.3. Experience: At least four years in the COP functional area in NATO or a NATO nation. At least one year in the development of COP doctrine; operational concepts; requirements; tactics, techniques and procedures; standard operating procedures and other functional documentation

## 7.ACRONYSMS

Abbreviation	Description
AFPL	Approved Fielded Product List
AGS	Alliance Ground Surveillance
AIS	Automated Information System
Bi-SC	Bilateral Strategic Commands
Bi-SCD	Bi-SC Directive
BL	Baseline
AOI	Area of Interest
C2	Command and Control
C2IS	Command and Control Information System
CAW	Contract Award
CBT	Computer Based Training
CCD	Course Control Document
CCO	Commercial Manager/Contracting Officer
CIL	Contractor Implementation Lead
CIS	Communication and Information Systems
CLIN	Contract Line Item Number
CM	Configuration Management
CMS	Content Management System
COP	Common Operational Picture
COTS	Commercial off the Shelf
CPM	Contractor Project Manager
CQM	Contractor Quality Manager
CR	Change Request
CTL	Contractor Training Lead
DC	Data Centre
DCIS	Deployable Communication and Information Systems
DIF	Difficulty, Importance and Frequency
DR	Deficiency Report
EDC	Effective Date of Contract
E&IT	Education and Individual Training
ELO	Enabling/Learning Objectives
FAQ	Frequently Asked Questions
FAS	Functional Area Services
FSA	Final System Acceptance
HQ	Headquarters
IDR	Implementation Design Review
INA	Installation Node Acceptance

ITM	IT Modernisation
IWG	Implementation Working Group
JFC	Joint Force Command
KOM	Kick-Off Meeting
MAF	Mission Anchor Function
MIR	Mission Information Room
NAC	North Atlantic Council
NATO	North Atlantic Treaty Organisation
NCI Agency/NCIA	NATO Communication and Information Agency
NCOP	NATO Common Operational Picture
NCS	NATO Command Structure
NRF	NATO Response Force
OT&E	Operational Testing & Evaluation
PBS	Product Breakdown Structure
PCO	Purchaser Contracting Officer
PD	Product Description
PFI	Purchaser Furnished Item
PHR	Project Highlight Report
PMI	Project Management Institute
PMP	Project Management Plan
PMR	Project Management Review
PMS	Project Master Schedule
PO	Performance Objectives
POC	Point of Contact
PPM	Purchaser Project Manager
PSA	Provisional System Acceptance
PTL	Purchaser Technical Lead
QAP	Quality Assurance Plan
RAID	Risks, Assumptions, Issues, Decisions
SACEUR	The Supreme Allied Commander Europe
SHAPE	Supreme Headquarters Allied Powers Europe
SOP	Standard Operating Procedures
SOW	Statement Of Work
SSS	Schedule of Supplies and Services
TDA	Training Design Analysis
TMR	Training Material Review
TNA	Training Needs Analysis
TWG	Training Working Group
VTC	Video Tele-Conference
WBS	Work Breakdown Structure
WP	Work Package

## **ANNEX A      PHYSICAL SCOPE of NCOP-2**

See "6\_IFB-CO-115049-NCOP2 - SOW Annex A SRS NCOP-2 SRS" files:

6\_IFB-CO-115049-NCOP2 - SOW Annex A SRS - Main body System Requirements List

6\_IFB-CO-115049-NCOP2 - SOW Annex A SRS - Interoperability Requirements

6\_IFB-CO-115049-NCOP2 - SOW Annex A SRS - Non Functional Requirements

## **ANNEX B      INITIAL TRAINING REQUIREMENTS ANALYSIS**

See "6\_IFB-CO-115049-NCOP2 - SOW Annex B - Initial Training Requirements Analysis" file

## **ANNEX C      TRAINING DIRECTIVE**

See "6\_IFB-CO-115049-NCOP2 - SOW Annex C - Bi-SC Education and Individual Training Directive 075-007" file



## ANNEX D DOCUMENTATION TO BE PROVIDED

Serial	Document	Specific Annex or Not	Availability Milestone/Phase
1	Bi-SC Directive 75-7	Annex C	With IFB
2	NCOP-2 Physical Scope	Annex A	With IFB
3	NCOP-2 Requirement Implementation Schedule	No	CAW
4	NCOP-2 Project Schedule	No	CAW
5	NCOP-2 SRS	No	CAW
6	NCOP-2 Use Case Documents	No	CAW
7	NCOP-1 TNA and Training Material	Annex B	With IFB
8	NCOP-2 System Design Specification	No	CAW
9	NCOP-2 System Administration Manuals	No	WP1-TRR
10	NCOP-2 User Manuals	No	WP1-TRR
11	NCOP-2 Quick Reference Guide	No	WP1-TRR
12	NCOP-2 Installation Configuration Guide	No	WP1-SSMAT
13	NCOP-2 Architecture Documentation	No	CAW
14	NCOP-2 Interface Control Documents	No	CAW