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Book 2, Part IV, Page IV-40

SECTION 4: PROJECT MANAGEMENT

4.1. Introduction

4.1.1. This section outlines the Project Management requirements for this Contract.

4.1.2. The Contractor's Project Management activity is viewed as a critical factor in the successful execution of the IEG-C Project.

[SOW-114] *The Contractor SHALL at all times ensure that:*

- *Adequate resources are applied to all activities undertaken under the contract;*
- *Milestones are identified and achieved in a timely manner;*
- *The project status information is comprehensively reported to the Purchaser in a timely manner;*
- *Configuration Management baselines are established and maintained throughout the project lifecycle;*
- *All risks (Purchaser and Contractor risks) to project achievement are identified and managed;*
- *Professional standards of project activities and deliverables through the application of QA techniques are applied;*
- *Due account is taken of Purchaser Furnished Information including Process Management Directives.*

4.1.3. The success of the IEG-C project depends upon a sound project management approach. Full and open communication between the Contractor and the Purchaser is an essential element of this approach.

4.1.4. To facilitate the efficient way of communication email is considered as an official communication channel, unless stated otherwise.

[SOW-115] *The Contractor SHALL acknowledge email receipt and answer email received from NATO project team members (see para: 4.3 Project Management Organization) within 3 business days.*

4.1.5. Methodology

[SOW-116] *The Contractor SHALL use PRINCE2 or an equivalent PM standard for the direction, governance and management activities for the entire project. If an equivalent PM standard is used, the Contractor SHALL prove that it at minimum meets all requirements stated in this section.*

[SOW-117] *The Contractor SHALL be agile in the approach for the product delivery activities within each release and by doing so SHALL enable:*

- *All SOW requirements are met*
- *Detailed planning and progress tracking for the short horizon (time-boxed) activities*
- *Re-planning and reviewing activities at frequent intervals*
- *Product deliverables breakdown and continuous (re)prioritization*
- *Iterative development and incremental delivery via product releases*
- *Prototyping and frequent demonstration of product features*

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- *Team collaboration, rich communication, self-organisation, transparency and customer-focus*
- *A test-driven approach utilising frequent and comprehensive testing activities using testing automation to the greatest possible extent (target 100%)*
- *Progress Reporting will be based on Earned Value Management (EVM)*

[SOW-118] *The Contractor SHALL define and describe its implementation of the required PM approach so that at minimum it shows a clear and consistent exchange of information between the Project team and minimal duplication of information and project management activities. For example:*

[SOW-119] *The Contractor SHALL use Project Master Schedule (PMS; i.e., Gantt chart) for higher level project planning and milestones tracking but should be regularly fed by information from Product Delivery Reviews.*

[SOW-120] *The Contractor SHALL produce Project Status Report (PSR) that include inputs about delivery progress, issues and risks taken from Product Delivery Reviews and meeting.*

4.2. Project Implementation Plan (PIP)

[SOW-121] *The Contractor SHALL provide a Project Implementation Plan (PIP), which will describe how the Contractor will implement the Project.*

4.2.1. The PIP shall be provided to the Purchaser for review and acceptance within four (4) weeks after Effective Date of Contract (EDC). The PIP will be reviewed by the Purchaser and comments submitted to the Contractor no later than five (5) working days after receipt. PIP final version will be provided to the Purchaser six (6) weeks after Effective Date of Contract (EDC).

4.2.2. The approval of the PIP 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 SoW.

4.2.3. The PIP shall be kept up to date throughout the project, and shall be subject of review at each Project Review Meeting (PRM), until and including Provisional System Acceptance (PSA (EDC+20mo)). The PIP will also identify the security accreditation process.

4.2.4. The PIP shall include the sections listed and described in 4.4 Project Management Documentation below:

4.3. Project Management Organisation

4.3.1. Project Governance

4.3.1.1. This project will be managed in accordance with the NCIA project management procedures, based on the Projects in Controlled Environments (PRINCE 2) methodology. The NCIA has established the Project Board representing, among others, the users and suppliers.

4.3.1.2. The NCI Agency Project Board is composed of the following.

4.3.1.2.1. Senior User: SHAPE J6 is the Senior User for this project. NCI Agency internal representation of the users is provided by Demand Management.

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4.3.1.2.2. Senior Supplier: The Implementation Contractor is the Senior Supplier for this project and is responsible for delivering the required capability. NCIA Agency Internal Representation of the Supplier is provided by NCIA Agency Contracting.

4.3.1.2.3. Executive: The NCI Agency Core Enterprise Services (CES) Service Line Chief is the Project Board Executive for this project.

4.3.1.2.4. NCI Agency Service Strategy will be part of the Project Board to assure technical conformity of the implementation and its architecture to the relevant NATO standards.

4.3.1.3. The NCIA Project Manager (PM) will report to the NCIA Project Executive in accordance with the Prince2 principles.

4.3.2. Overall Project Organisation

4.3.2.1. The Project Management Structure is shown in Figure 4 below

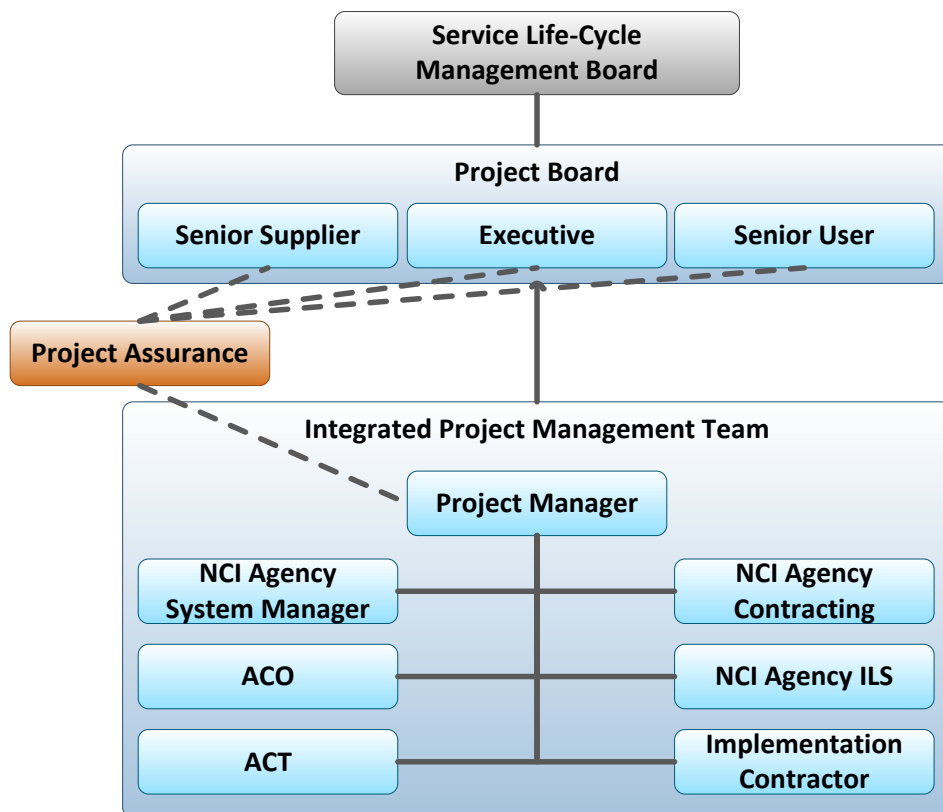


Figure 4: Project Management Structure

4.3.2.1.1. The Project board is accountable for the project success and has the authority to direct the project by making key decisions and exercising overall control. The Board manages by exception via reports provided by Project Managers.

4.3.2.1.2. The Integrated Project Management Team (IPMT) meets quarterly and includes customer representatives and is updated on project progress, status, issues, and risks.

4.3.2.1.3. Product Delivery Teams are in charge for the development of required products. The number of needed Product Delivery Teams in each project phase as well

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as the number of resources in each Product Delivery Team will be agreed upon between Contractor and Purchaser Project Managers.

[SOW-122] *The Contractor SHALL establish Product Delivery Teams which, at a minimum, consist of the following roles: Team Manager, Technical Leader, Product Owner (Purchaser provided), Test Director, ILS Manager and Quality Assurance Representative (QAR). One person may be a member of more than one Product Delivery Team.*

[SOW-123] *The Contractor Project Manager SHALL frequently liaise with the Product Delivery Team and with the Purchaser Project Manager to provide inputs for overall Project Management and Direction, all of which shall be defined in the Project Communication plan (part of the PMP).*

4.3.3. Purchaser Project Organisation and Responsibilities

4.3.3.1. The Purchaser Contracting Office (CO) will act as the Purchaser's representative and will be the primary interface between the Contractor and Purchaser after the EDC.

4.3.3.2. The Purchaser Project Manager will be supported by Subject Matter Experts (SME) in certain areas who may, from time to time, be delegated to act on the Purchaser Project Manager's behalf in their area of expertise.

4.3.3.3. The Purchaser Project Manager, the specialists, other team members, or any other NATO personnel are not allowed to make changes to the terms and conditions of the Contract. They may only provide the Purchaser's interpretation of technical matters.

4.3.3.4. All changes to the Contract will be made through the Purchaser's Contracting office only.

4.3.3.5. The Purchaser and Contractor Project Manager, the specialists, and the key Stakeholders representatives collectively form the IEG-C IPMT.

4.3.3.6. The Purchaser Project Manager chairs the IEG-C IPMT. The other voting members are the designated representatives of the stakeholders (key user representatives). All other members serve as advisory members.

4.3.3.7. The IPMT serves as the primary mechanism for monitoring project status, resolving issues or conflicts within the project, and advising the Purchaser Project Manager.

4.3.3.8. The IPMT also serves as the Purchaser's IEG-C Configuration Control Board (CCB), to which the following items may be submitted for baselining decision as required by the Purchaser:

- a. PMP,

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- b. PMS (Project Master Schedule), for the first version and for all changes beyond tolerance available to the Purchaser Project Manager⁵.
- c. System Implementation Plan (SIP)
- d. ILS Plan (ILSP)
- e. Functional Baseline (FBL or "as required")
- f. Allocated Baseline (ABL, or "as designed");
- g. Product Baseline (PBL, or "as built")
- h. Configuration Management Plan (CMP)
- i. Quality Assurance Plan (QAP)

4.3.3.9. The Purchaser will also ensure its SMEs are available to engage in the role of Product Owners (PO). PO will represent the Purchaser's interests within Product Delivery Teams and will work to enable:

- a. Detailed product requirements are well-defined, understood and prioritized for development
- b. Product deliverables are reviewed, fitting the purpose and have been tested by the Contractor according to the agreed upon Test Plan
- c. Communication, collaboration and feedback from other Purchaser representatives such as end user representatives and other SMEs

4.3.4. Contractor Organisation and Responsibilities

[SOW-124] *The Contractor SHALL identify all major Contractor organizational units and any Sub-Contractors involved in the implementation of the IEG-C and a description of the portion of the overall effort or deliverable item for which they are responsible.*

[SOW-125] *The Contractor SHALL establish and maintain a Project Management Office (PMO) to perform and manage all efforts necessary to discharge all his responsibilities under this Contract.*

[SOW-126] *The Contractor SHALL also provide all necessary manpower and resources to conduct and support the management and administration of operations in order to meet the objectives of the project, including taking all reasonable steps to ensure continuity of personnel assigned to work on this project.*

[SOW-127] *The Contractor SHALL designate one or more Senior Engineer(s) as Team Managers throughout the performance of the Contract. Team Manager SHALL design, coordinate and lead the process of product delivery within the defined Product Delivery Team(s) making sure product requirements are met within given timelines and quality criteria. Team manager organizes and facilitates all Product Delivery Meetings (PDM). Team manager SHALL report and take*

⁵ The Purchaser Project Manager can, at his/her own discretion and without consulting the other IEG-C CCB members, approve changes to the PMS that do not affect other baselined documents, and/or do not incur additional costs, and/or do not bring the project beyond time tolerance available to him/her.

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direction from the Contractor Project Manager. See SECTION 13 for labour category requirements.

[SOW-128] *The Contractor SHALL designate a Field Engineer to serve as the Service Direction Manager throughout the performance of the Contract. See SECTION 13 for labour category requirements.*

[SOW-129] *The Contractor SHALL designate an Engineer to serve as QAM throughout the performance of the Contract until project completion. See SECTION 13 for labour category requirements.*

[SOW-130] *The Contractor SHALL designate a Senior Engineer to serve as ILS, Change and Configuration Manager throughout the performance of the Contract, including the Operation and Maintenance (O&M) Phase. See SECTION 13 for labour category requirements.*

[SOW-131] *In order to facilitate communication and effectiveness, the Contractor SHALL locate the Core Team (i.e., Project Manager and Technical Lead) close to the Purchaser premises.*

[SOW-132] *The Contractor's team SHALL be available during EU time zone working hours (8:30 - 17:30 Monday-Thursday, and 8:30 - 16:30 on Fridays).*

4.3.4.1. The following members of the Contractor PMO are Key Personnel for this project:

[SOW-133] *The Contractor SHALL designate a Project Manager (Contractor PM), who will direct and co-ordinate the activities of the Contractor's project team. The Project Manager SHALL be the Contractor's primary contact for the Purchaser Project Manager and SHALL conduct all major project design, test, and review meetings. See SECTION 13 for labour category requirements.*

[SOW-134] *The Contractor SHALL designate a Senior System Engineer as the Technical Lead throughout the performance of the Contract. The Technical Lead SHALL lead the analysis, design, integration, transition into operations and follow-on enhancement efforts of the Contractor. See SECTION 13 for labour category requirements.*

[SOW-135] *The Contractor SHALL designate a Senior Test Engineer to serve as the Test Director for all test activities conducted under this Contract. See SECTION 13 for labour category requirements.*

4.4. Project Management Documentation

4.4.1. For the purpose of this Contract, Deliverables are split into two categories:

- a. Management products are all Contract Deliverables covered under the Project Management activities.
- b. Specialist products are all other Deliverables in this Contract.

4.4.2. The Project Overview management product, which shall provide an executive summary overview of the offered IEG-C capability.

[SOW-136] *The Contractor SHALL establish and maintain a Project Overview*

4.4.3. Product Breakdown Structure (PBS) and Product Flow Diagram (PFD)

[SOW-137] *The Contractor SHALL establish and maintain a PBS, which SHALL:*

- o *Identify all products and shall distinguish between management products and specialist products.*

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- *Include a hierarchical diagram of all the products (management products and specialist products), having at its topmost product the final product of the overall project, i.e., the IEG-C System.*
- *Describe each product (management products and specialist products) including its quality requirements. The product descriptions shall address sufficient detail to permit management assessment of progress.*

[SOW-138] *The Contractor SHALL establish and maintain a PFD, which SHALL sequence all products in their logical order of creation.*

4.4.3.1. The acceptance of the PBS and of the PFD 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.

4.4.4. The Project Management Plan management product, which clearly describes the implementation of the project.

[SOW-139] *The Contractor SHALL establish and maintain a PMP which shall describe how the Contractor will implement the totality of the project as specified in this SOW, including details of the project control that will be applied.*

[SOW-140] *The Contractor's PMP SHALL cover all aspects of the project implementation including its management structure and project management processes, personnel assignments, external relationships necessary to provide the capability as required by this Contract.*

[SOW-141] *The Contractor's 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.*

[SOW-142] *The Contractor's PMP SHALL follow the outline recommended in this SOW (see SECTION 15.9).*

[SOW-143] *The Contractor's PMP SHALL be provided to the Purchaser for acceptance.*

4.4.5. Work Breakdown Structure (WBS)

4.4.5.1. The WBS is the basic structure for EVM data collection and reporting, and should be reflected in the detailed activities in the Project Master Schedule (PMS).

[SOW-144] *Contractor SHALL develop the Contractor WBS to the level needed for adequate management and control of the contractual effort. A single WBS should be used for planning, managing, and reporting.*

- *Contractor SHALL perform the contract technical effort using a guidelines-compliant EVM (EVM PMI standard) that correlates cost and schedule performance with technical progress.*
- *Progress and problems SHALL be presented and discussed in periodic program management reviews. Technical issues SHALL be covered in terms of performance goals, exit criteria, schedule progress, risk, and cost impact.*
- *The WBS SHALL include designation of critical subcontractors, by name, for EVM compliance and validation or flow down of EVM compliance to these subcontractors.*

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4.4.6. Project Master Schedule (PMS)

- [SOW-145] *The Contractor SHALL establish and maintain a PMS which SHALL:*
- *Contain all Contract events and milestones*
 - *Correlate with the products defined in the PBS and sequentially ordered in the PFD*
 - *Incorporate the WBS*
 - *Be provided in Microsoft Project format*
 - *Identify the critical path for the overall project*
 - *Identify the start and finish dates, duration, predecessors, constraints (as necessary) and the total slack of each task*
 - *Identify key resources needed for each task completion*
 - *Identify the main project milestones (see) and intermediate milestones as required*
 - *Identify the “physical” progress for each task*
 - *Identify the applicable baseline, and shall show progress against the baseline*
 - *Minimise the use of constraints and absolute dates*
 - *Provide network, milestone, Gantt and Tracking Gantt views*
 - *Identify the main deliverables.*
- [SOW-146] *The Contractor SHALL provide the PMS to the Purchaser for acceptance.*
- [SOW-147] *The Contractor SHALL use the PBS, the PFD and the PMS as the primary framework for Contract planning and reporting to the Purchaser.*

4.4.7. Risk Management Plan (RMP)

- [SOW-148] *The Contractor SHALL establish and maintain a RMP which shall describe how the Contractor will implement the Risk Management process, with at least the following details:*
- *Overall Risk Management approach*
 - *Key Risk Management processes*
 - *Key Risk Categories*
 - *Risk Prioritization Matrix*
 - *Risk Management roles and responsibilities*
 - *Risk Log template which shall at minimum follow the outline recommended in this SOW (see Section 15.2).*

4.5. Project Controls

4.5.1. Risk Management

- [SOW-149] *The Contractor SHALL establish and maintain a Risk Management process for the project, described in the RMP, and compliant with [NCIA PDED 06.00.03, 2015] and NATO Risk Management Policy.*
- [SOW-150] *The Contractor’s Risk Management process SHALL at minimum enable and define identification of all types of risks, evaluation and prioritization of each*

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risk, definition of proposed response strategy, owner and actions and suggested monitor and control mechanisms.

- [SOW-151] *The Contractor SHALL document and maintain status of all risks in the Risk Log (see 15.2) where he shall record and track all project risks regardless of their status.*
- [SOW-152] *The Contractor SHALL update the project Risk Log at minimum on a monthly basis as an input for the Project Status Report (PSR).*
- [SOW-153] *The Contractor SHALL add to the Risk Log additional risks identified by the Purchaser.*
- [SOW-154] *Upon Purchaser request, the Contractor SHALL deliver the Risk Log to the Purchaser, throughout the duration of the Contract.*

4.5.2. Issue management

4.5.2.1. A Project Issue is anything that could have an effect on the Project, either detrimental or beneficial (e.g., problem, error, anomaly, risk occurring, query, change in the project environment, change request, off-specification).

- [SOW-155] *The Contractor SHALL establish and maintain a process for identifying, tracking, reviewing, reporting, and resolving all project issues.*
- [SOW-156] *The Contractor SHALL describe the Issue Management Process in the CMP (see section 18.3).*
- [SOW-157] *The Contractor SHALL develop and maintain an Issue Log (see Section 21.3) where he SHALL record and track all project issues regardless of their status.*
- [SOW-158] *The Contractor SHALL include the Issue Log in the Configuration Management process and keep it under configuration control and in the Configuration Management Database (CMDB).*
- [SOW-159] *The Contractor SHALL update Issue Log at minimum on a monthly basis as an input for the PSR.*
- [SOW-160] *The Contractor SHALL add to the Issue Log additional issues identified by the Purchaser.*
- [SOW-161] *Upon Purchaser request, the Contractor SHALL deliver the Issue Log to the Purchaser, throughout the duration of the Contract.*

4.5.3. Configuration management

4.5.3.1. The Contractor SHALL implement a Configuration Management program to perform the Configuration Management functions as described in SECTION 12 of this SOW.

4.5.4. Quality Assurance (QA) and Quality Control (QC)

- [SOW-162] *The Contractor SHALL implement a QA and QC program as described in SECTION 17 SECTION 12 of this SOW.*
- [SOW-163] *The Contractor SHALL deliver and maintain a Quality Assurance Plan as detailed in SECTION 11 of this SOW.*

4.5.5. Independent Verification & Validation (IV&V)

4.5.5.1. The Purchaser will be supported by purchaser arranged IV&V services.

4.5.5.1.1. The IV&V services will entail the following activities:

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- a. Documentation assessment; this includes:
 - i. System design documentation package assessment
 - ii. Security documentation package assessment
 - iii. Plans assessment
 - iv. More generally assessment of project deliverables
- b. Support to all types of tests. This includes:
 - i. Attend and monitor the tests performed by the Contractor
 - ii. Evaluate Contractor provided test plan, test procedures and reports
 - iii. Provide independent reports
- c. Testing. This includes the design and execution of independent tests, and the provision of the associated reports.
- d. Monitor Contractor activities at Contractors' facilities
- e. Attend any meeting as requested by the Purchaser

[SOW-164] *The Contractor SHALL fully support IV&V activities and in particular:*

- *Host inspection visits*
- *Make himself available for answering questions and furnishing information related to the project*
- *Allow inspection and monitoring of testing activities*
- *Allow inspection and monitoring of Contractor's processes applicable to this project*
- *Allow execution of independent testing activities.*

4.6. Project Management Communications

4.6.1. Project Status Report (PSR)

[SOW-165] *The Contractor SHALL provide, no later than the third working day of each month, a PSR. The Contractor's PSR SHALL be a monthly document.*

[SOW-166] *The Contractor's PSR SHALL at minimum summarise completed, ongoing, and upcoming activities, as well as attached updated PMS, Risk and Issue Log.*

4.6.1.1. The Purchaser will issue comments no later than one week after receipt of the document.

[SOW-167] *The Contractor SHALL issue answers to Purchaser provided comments within one week after their receipt. No comment received within that timeframe means that the Contractor agrees to the comments issued by the Purchaser.*

4.6.2. Meetings

4.6.2.1. Except otherwise stated in the Contract, the following provisions shall apply to all meetings (including "attendance in person" meetings, video or tele conference meetings, reviews...) to be held under the Contract.

[SOW-168] *The Contractor SHALL take meeting minutes, submit them in draft version to the Purchaser for approval within 2 working days of the meeting. The minutes SHALL be submitted to an accelerated review cycle at Purchaser's discretion.*

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[SOW-169] *The Contractor's representatives SHALL NOT regard these minutes as a mechanism to change the terms, conditions or specifications of the Contract nor as a vehicle to alter the design or configuration of equipment or systems. The Contractor SHALL note that any such changes will only be made by authorised mechanisms as set forth in the Contract.*

[SOW-170] *The Contractor SHALL provide any documentation (even in draft format), that may be useful to the Purchaser in preparing for meetings and ensuring efficient discussions during the meetings no later than 2 working days before the meeting.*

4.6.2.2. Project Review Meetings (PRM)

[SOW-171] *The Contractor SHALL coordinate and hold PRM with the Purchaser at major milestones (listed in 3.1.2) throughout the Contract period of performance, as follows (-/+ 2 weeks around the date provided below):*

- *PRM#1 focused on IEG-C design at EDC+5*
- *PRM#2 focused on Factory Tests and Accreditation at EDC+9*
- *PRM#3 focused on Provisional System Acceptance and the IEG-C system going live*
- *PRM#4 focused on Final System acceptance and closing the project*

[SOW-172] *The Contractor SHALL provide an updated PSR, not older than 5 working days, as a base document for the PRM as sent to all PRM participants at least 2 business days in advance.*

[SOW-173] *At each PRM, the Contractor SHALL provide the status of all on-going tasks, the status of the Contract deliverables, identify any changes to the PMP, PMS, SIP, ILS Plan (ILSP), QAP, Issue Log, Change Requests document, Off-specifications document, baselines and Risk Log, and identify any problems.*

[SOW-174] *The Contractor SHALL address and discuss key project issues, risks and events with the Purchaser Project Manager promptly, and SHALL not postpone it until the next PRM.*

[SOW-175] *The Contractor SHALL provide minutes of the meeting. The minutes will include:*

- *Date, place, and time of the meeting;*
- *Purpose of the meeting;*
- *Name of participants;*
- *Approval of previous meeting's minutes and all resolutions;*
- *Record of principle points discussed, action taken, and decisions made*

4.6.2.3. The location of PRMs will in principle be at the Purchaser's premises in Mons (BEL) or in The Hague (NL) and when possible, they shall be scheduled with other project meetings. Attendance in person is preferred, but participation via video or telephone conference can be mutually agreed.

4.6.2.4. Product Delivery Meetings (PDM)

[SOW-176] *The Contractor SHALL organize PDMs.*

[SOW-177] *The Contractor's PDMs SHALL at minimum cover the following activities:*

- *Product Delivery Planning meeting with frequency of minimum 1 per month*

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- *Product Delivery Review meeting with frequency of minimum 1 per month*
- *Product Delivery Progress Meeting with frequency of minimum every 2 working days*

[SOW-178] *The Contractor SHALL appoint his Team Manager or Tech Lead to organize all PDMs.*

4.6.2.5. Purchaser representative (Product Owner and/or Project Manager) will attend Product Delivery Planning and Review meetings and as needed also Product Delivery Progress Meetings.

[SOW-179] *The Contractor SHALL record all outputs from all PDMs in a product delivery toolset chosen, implemented and hosted by the Contractor.*

[SOW-180] *The Contractor SHALL ensure Purchasers access to the above-mentioned product delivery toolset.*

[SOW-181] *The Contractor SHALL report key outputs from PDMs such as delivery progress information (e.g., product backlog status, key test results, burn down / burnup charts) as well as key changes, issues and risks to the Contractor Project Manager who SHALL integrate that information in the PSR.*

4.6.2.6. IPMT Meetings

4.6.2.6.1. Upon award of this Contract, the Contractor's Project Manager shall become an advisory member of the IEG-C IPMT.

[SOW-182] *The Contractor's Project Manager SHALL provide inputs to and attend IPMT meetings as requested by the Purchaser Project Manager.*

4.6.2.6.2. All IPMT meetings of the IEG-C will take place at the Purchaser premises (Brussels or Mons (Belgium) and/or The Hague – Netherlands).

4.6.2.7. Ad-hoc Security Working Group

4.6.2.7.1. The ad-hoc Security Working Group (with representatives from NATO SAAs and CISOA) can be established if certain security issues could not be solved via regular contacts between Purchaser and Contractor SMEs.

[SOW-183] *For daily/regular contact the Contractor SHALL designate Security SMEs as points of contact for security accreditation and security-related issues.*

4.6.2.7.2. The Purchaser will host the Security Working Group Meetings.

4.6.2.8. Other Meetings

4.6.2.8.1. The Purchaser will host all other meetings agreed by both parties unless there is a specifically agreed need to review material, witness technical demonstrations, or perform any other activity outside of the Purchaser's premises as part of the meeting.

4.6.3. Project Website

[SOW-184] *The Contractor SHALL use the project website provided by the Purchaser to maintain all up-to-NATO-RESTRICTED documents using a Purchaser provided REACH laptop. Accreditation related documentation SHALL also be stored and referenced thereafter, in the NCIA Security Accreditation Portal.*

4.6.3.1. The Purchaser will provide the necessary access rights to the Contractor.

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[SOW-185] *The Contractor SHALL maintain on this website all unclassified documents, as soon as they are submitted in draft version to the Purchaser. This includes all project deliverables, presentation materials from all meetings, as well as the Contract SOW and SRS, and all applicable documents. More generally, the website SHALL include any document as deemed necessary by the Purchaser.*

[SOW-186] *The Contractor SHALL identify all relevant classified documents on the Project Website, by title, unless a title itself is classified and SHALL state from where the classified document can be obtained.*

4.6.3.2. The Purchaser is able to provide the Contractor with a capability (named "REACH") to exchange NATO RESTRICTED information over the Internet with the Purchaser. If the Purchaser is not in position to provide such a capability, other means shall be defined on a case by case basis.

4.6.4. Documentation Delivery and Review

[SOW-187] *The Contractor SHALL submit all documentation in electronic format to the Purchaser for review and comments as applicable.*

[SOW-188] *The Contractor SHALL NOT provide any Contractual documentation in a partial or gradual manner.*

[SOW-189] *The Contractor SHALL ensure that any documentation delivered to the Purchaser has been properly reviewed according to Contractor quality management process, utilizing the Project Portal and other shared resources, and minimizing use of personal storage and email, to the extent possible.*

4.6.4.1. Except otherwise stated for specific documents, the following provisions shall apply for any documentation to be provided by the Contractor under this Contract.

[SOW-190] *The Contractor SHALL provide a first version of each deliverable for Purchaser review. The first version SHALL be substantially complete and correct.*

4.6.4.2. The Purchaser will provide questions, comments, corrections, and suggested changes to the Contractor within 4 (four) weeks of receipt, excluding security accreditation documentation for which 3 months will be required. The Purchaser reserves the right to return without review a document that has significant deficiencies (e.g., a document only including a table of contents).

[SOW-191] *The Contractor SHALL NOT rely on the Purchaser review to fill in deficiencies or obtain missing Purchaser information.*

[SOW-192] *The Contractor SHALL resubmit the document as a revised version addressing the Purchaser's comments within two (2) weeks after receipt.*

4.6.4.3. The Purchaser will then provide further comments, corrections, and suggested changes to the Contractor within three (3) weeks of receipt, excluding security accreditation documentation for which 3 months will be required.

[SOW-193] *The Contractor SHALL provide an updated version of the document within two weeks of receipt of the Purchaser's comments on the revised version.*

4.6.4.4. The above cycle shall continue until the document reach a quality level acceptable by the Purchaser, excluding security accreditation documentation for which NSAB approval will be required.

[SOW-194] *If the document is included as part of the ABL or PBL, the Contractor SHALL remain responsible for updating the document as required in the course of the project (to correct errors, inconsistencies, omissions, etc. and to reflect*

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changes in the system design, system implementation, support arrangements) as part of its Configuration Management tasks.

4.6.5. Co-ordination with other NATO projects

4.6.5.1. The NATO CIS environment will be under continual development by other NATO projects that are being implemented in parallel with the IEG-C Project.

4.6.5.2. The Purchaser will inform the Contractor and provide information concerning the operational environment that may emerge as a result of these projects.

[SOW-195] *The Contractor SHALL be able to adapt the IEG-C to accommodate this additional information.*

[SOW-196] *The Contractor SHALL incorporate in his activities the integration, performance, and schedule considerations related to the co-ordination of the IEG-C with the other Purchaser systems to be interfaced with it throughout the duration of the project.*

[SOW-197] *The Contractor SHALL identify any documents, meeting minutes, or other information from these projects required to maintain an effective co-ordination process.*

[SOW-198] *The Contractor SHALL include into Project Communication Plan (part of PMP) activities clearly identifying his proactive approach with regards to the coordination with other related NATO projects.*

4.6.6. Project-level communication

[SOW-199] *As a Project-level communication activity, the Contractor SHALL provide an IEG-C Information Sheet of maximum 2 pages providing an overview of the IEG-C system, its functions, external interfaces and major components, and its projected installation schedule.*

SECTION 5: SYSTEM ENGINEERING

5.1. General

5.1.1. This section outlines the System Engineering, Integration, Tests, and implementation of IEG-C Project.

- [SOW-200] *The Contractor SHALL be responsible for the overall design, integration, obtaining security accreditation and system engineering of the IEG-C throughout the Contract period of performance.*
- [SOW-201] *The Contractor SHALL develop the IEG-C System Design Specification (SDS) based on an analysis of the Purchaser's requirements.*
- [SOW-202] *The Contractor SHALL integrate all necessary components to establish the IEG-C Product Baseline, and plan and execute a series of tests to confirm that this baseline meets its functional and non-functional requirements (portability, maintainability, security, reliability, usability, compatibility, performance, functional).*
- [SOW-203] *The Contractor SHALL perform the activities described in this section considering that the IEG-C will integrate with a wide variety of NATO activities and systems (e.g., Core Services, Functional Area Services (FAS)).*
- [SOW-204] *The Contractor SHALL be responsible for integration of the IEG-C System. This means both the integration of the various products that constitute the IEG-C System and the integration of the IEG-C System with other NATO systems.*
- [SOW-205] *The Contractor SHALL make use of NCIA testbed (Annex B1) to perform the integration or more generally to conduct tests, and in particular the following Milestone events:*
 - *Factory Acceptance Test (FAT at EDC+9MO) (see Section 3.5.4) at the Contractor premises if the contractor has chosen to develop on their own premises; or the Purchaser's Development and Integration Testing Environment (see Section 5.1.1.2) if the Contractor has chosen to develop on the Purchaser's Development and Integration Testing Environment.*
 - *Integration and Interoperability tests (SIT milestone at EDC+17mo) related to the integration of the IEG-C system with other NATO systems, at the Purchaser's Development and Integration Testing Environment.*
 - *System Acceptance Test (SAT) and User Acceptance Test (UAT) for the Formal Verification and Validation and the execution of tests in support of NATO's change process with the objective to achieve Deployment Authorization, at the NATO Enterprise Reference System (see Section 5.1.1.7).*

5.1.1.1. As an option, the Contractor may use the Purchaser's Development and Integration Test Environment for the development of the IEG-C, at Contractor's cost. The Development and Integration Test Environment makes the Purchaser's tool chain for development and testing available to the Contractor.

5.1.1.2. The Purchaser's Development and Integration Test Environment is a test environment configured to provide a representation of the target network/security domain. It will include the necessary configurations and interfacing systems and services to represent the live environment for test purposes. It will also include test harnesses and test data.

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5.1.1.3. The IEG-C Integration Test System will be created based on the System Specifications provided by the Contractor but as a virtualized system and not necessarily reflect the same performance or storage capacity.

5.1.1.4. All hardware (server, storage, network elements and workstations) and Virtualisation Platform for the Development and Integration Test Environment will be provided by the Purchaser for the tests related to the integration of the IEG-C system with other NATO systems.

5.1.1.5. The Purchaser will prepare the Virtual Environment for the IEG-C Integration Test System on the Development and Integration Test Environment.

[SOW-206] *The Contractor SHALL deliver and install the IEG-C Integration Test System with all its components as defined in ANNEX B, in compliance with the processes described in SECTION 13 as a virtualized system and SHALL integrate it within the contractor provided Development and Integration Test Environment.*

[SOW-207] *The Contractor SHALL provide the operating systems and any other COTS software needed by the IEG-C Integration Test System with the necessary Original Equipment Manufacturer's manuals and licenses unless agreed to be provided by the Purchaser.*

[SOW-208] *The Contractor SHALL install the COTS software on the IEG-C Integration Test System and apply the necessary configuration.*

[SOW-209] *The Contractor SHALL implement a procedure to ensure that the IEG-C Integration Test System is representative of the actual operational system, in particular in terms of design and configuration, and software versions.*

[SOW-210] *The Contractor SHALL establish and update the IEG-C Integration Test System on the Purchaser prepared Development and Integration Test Environment prior to the relevant events.*

[SOW-211] *The Contractor SHALL update the IEG-C Integration Test System with each new release until FSA.*

[SOW-212] *The Contractor SHALL demonstrate how the Purchaser will have to make use of the IEG-C Integration Test System to adapt any existing software, scripts, reports etc. to changing requirements (this encompasses both development and testing activities).*

5.1.1.6. As an option, the Contractor can use their own data generators, to provide test feeds to the IEG-C Integration Test System.

5.1.1.7. The IEG-C Reference System is a reference system configured to provide a representation of the target network/security domain. It will include the necessary configurations and interfacing systems and services to represent the live environment for verification and validation purposes. It will also include test harnesses and test data.

5.1.1.8. All hardware (server, storage, network elements and workstations) for the virtualized elements of the IEG_C Reference System will be provided by the Purchaser for the tests related to the integration of the IEG-C system with other NATO systems.

[SOW-213] *The Contractor SHALL deliver hardware components for elements of the IEG-C Reference System that cannot be virtualized.*

5.1.1.9. The Purchaser will prepare the Virtual Environment for the IEG-C Reference System on the NATO Enterprise Reference System.

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- [SOW-214] *The Contractor SHALL deliver and install the IEG-C Reference System with all its components as defined in ANNEX B, in compliance with the processes described in SECTION 13, and SHALL integrate it within the Contractor provided NATO Enterprise Reference System.*
- [SOW-215] *The Contractor SHALL provide the operating systems and any other COTS software needed by the IEG-C Reference System with the necessary Original Equipment Manufacturer's manuals and licenses unless agreed to be provided by the Purchaser.*
- [SOW-216] *The Contractor SHALL install the COTS software on the IEG-C Reference System and apply the necessary configuration.*
- [SOW-217] *The Contractor SHALL implement a procedure to ensure that the IEG-C Reference System is representative of the actual operational system, in particular in terms of design and configuration, performance, security settings, and software versions.*
- [SOW-218] *The Contractor SHALL demonstrate how the Purchaser will have to make use of the IEG-C Reference System to adapt any existing software, scripts, reports etc. to changing requirements (this encompasses both development and testing activities).*
- [SOW-219] *The Contractor SHALL establish and update the IEG-C Reference System on the Purchaser prepared Development and Integration Test Environment prior to the relevant events.*
- [SOW-220] *The Contractor SHALL update the IEG-C Reference System with each new release until FSA.*
- [SOW-221] *The Contractor SHALL deliver and activate the IEG-C Reference System. The Contractor SHALL deliver all documents as required in this section for the Reference System (e.g., SIP, accreditation documents, etc.).*

5.1.1.10. As an option, the Contractor can use their own data generators, to provide test feeds to the IEG-C Reference System. In this case, the Contractor shall deliver all documents as required in 3.5.3 for the Reference System (e.g., SIP, accreditation documents, etc.).

5.2. Orientation Workshop

- [SOW-222] *The Contractor SHALL conduct a workshop (at a Purchaser-provided facility) to orient the IEG-C Platform Administrators and other stakeholders on the overall system design and capabilities. As part of this workshop, the Contractor SHALL:*
- deliver overview briefings on the anticipated IEG-C system, and lead question and answer sessions with the attendees;*
 - provide visuals, models, demonstration as necessary;*
 - provide information about the anticipated IEG-C System Implementation;*
 - provide information about how the System Design fully meets the requirements specified in this SOW and SRS;*
 - provide an overall description of the external interfaces;*
 - provide an overall description of the ILS concept and strategy;*
 - Provide an overall description of Configuration Management and Quality concept and strategy.*

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- *Collect any necessary information from the IEG-C Administrators, CIS Security Administrators and other stakeholders in order to perform the design activities. As required, the Contractor SHALL conduct further dialogue with the IEG-C Administrators, CIS Security Administrators and other stakeholders.*

[SOW-223] *The Contractor SHALL propose the event date minimum 2 months in advance to allow the coordination time with various stakeholders. The Contractor SHALL provide the proposed content for the workshop including schedule, coverage, content, presentation and the information for Purchaser approval minimum 4 weeks prior to the event.*

5.2.1. This workshop is a key meeting in the course of the Project. As any other meeting outcomes of such will be subject to the Purchaser Acceptance.

5.3. System Requirements Analysis and Review

5.3.1. Review of the requirements

[SOW-224] *The Contractor SHALL review the IEG-C SRS and all applicable documents, meet and communicate with NATO SMEs as necessary, and present its findings in terms of proposed changes to the SRS based on system cost, schedule, or performance impacts.*

[SOW-225] *The Contractor SHALL also identify any inconsistencies within the requirements. Any inconsistencies not identified by the requirements review will not be accepted later as the basis for a change with cost impact.*

[SOW-226] *The Contractor SHALL host and conduct a System Requirements Review (SRR at EDC+2MO) to present and discuss its findings and proposed changes to the requirement baseline for the design and integration of the IEG-C project. The purpose of this review is to agree upon the requirement baseline for the design and integration of the IEG-C system.*

[SOW-227] *The Contractor SHALL produce and provide a set of minutes that accurately reflect the discussions taken during the SSR meeting and provide them to the purchaser within 1 week of the meeting.*

5.3.2. Change Requests

[SOW-228] *Upon completion of the SRR, the Contractor SHALL identify any proposed changes to System Requirements Specification in the form of one or more Change Requests (i.e. ECPs). The Contractor SHALL address these Change Requests according to the processes implemented by the Contractor to meet the requirements of 12.6 and of 15.5 Change Request.*

5.3.2.1. The Purchaser will update and provide an updated Functional Baseline (FBL; see 18.2.2) as necessary to reflect the decision of the IEG-C CCB on these Change Requests.

[SOW-229] *The Contractor SHALL use the updated FBL as the basis for the IEG-C system design and subsequent activities.*

5.4. System Design

5.4.1. Design activities

[SOW-230] *The Contractor SHALL review the Purchaser-provided provided IEG-C Target Architecture [NCIA TR/2016/NSE010871/01, 2017].*

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- [SOW-231] *The Contractor SHALL consider this Target Architecture as a document for information which should be helpful to conduct its design activities. Therefore, the Contractor SHALL NOT consider the Target Architecture as a binding document.*
- [SOW-232] *The Contractor SHALL conduct the necessary Design Activities and develop its own complete design of the IEG-C at the Preliminary and Critical levels, including all interfaces to other systems to meet the SRS.*
- [SOW-233] *The Contractor SHALL keep the system design documentation package (including security accreditation documentation) up to date throughout project execution, in particular as a result from the site surveys and/or in order to obtain the security accreditation.*
- [SOW-234] *The Contractor's IEG-C System Design SHALL cover all sites identified for this project.*
- [SOW-235] *The Contractor's IEG-C architecture SHALL be designed so that it can be reused for other security classification levels (in any case, the system will be installed and operated at System High/NS mode of operation).*
- [SOW-236] *The Contractor's IEG-C architecture SHALL be designed to be modular design, allowing for future extension and enhancements.*
- [SOW-237] *The Contractor's IEG-C architecture SHALL be designed so that it can be reused in the deployed environment.*
- [SOW-238] *The Contractor SHALL agree coding syntax(es) with the Purchaser during the Design Stage.*
- [SOW-239] *The IEG-C Contractor SHALL ensure that the design is compliant with and covers the System Operations Processes.*

5.4.2. System Design Documentation Package

- [SOW-240] *The Contractor SHALL establish, deliver and maintain the IEG-C System Design Documentation Package, comprising of:*
- *The System Design Specification (SDS),*
 - *The Interface Control Document (ICD),*
 - *The Security Accreditation Documentation Package*
 - *The Master Test Plan (MTP), and*
 - *The Requirements Traceability Matrix (RTM).*
- [SOW-241] *The duration of the review cycle for the IEG-C System Design Documentation Package SHALL be 4 (four) weeks.*
- [SOW-242] *The Contractor SHALL prove the design through the regime of testing set forth in the Contract and the Contractor SHALL be responsible in the event that the system proves deficient in meeting the Contractual requirements.*
- [SOW-243] *As part of the Configuration Management activities, and like any other management product or specialist product, the Contractor SHALL update the System Design Documentation Package to reflect changes, at least at each of the following major milestones: a new design review, the start of a test phase, the completion of each tests activities, the start of the deployment, PSA, FSA.*
- [SOW-244] *The Contractor SHALL ensure that in order to maintain clear consistency throughout all documents in the System Design Documentation Package, any update of any of the documents comprised in the System Design*

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Documentation Package SHALL result in re-delivery of a new version of the complete System Design Documentation Package.

5.4.2.1. System Design Specification (SDS)

- [SOW-245] *The Contractor's SHALL ensure the SDS describes the IEG-C System to a level of detail that is sufficient for the Purchaser to be able to understand how the requirements in the SRS and the security requirements (see ANNEX A) are implemented.*
- [SOW-246] *In particular, the Contractor SHALL ensure IEG-C SDS addresses the IEG-C Operational Requirements (see SRS).*
- [SOW-247] *The Contractor SHALL ensure the IEG-C SDS is developed as per the detailed contents indicated in section 15.6.*

5.4.2.1.1. Interface Control Document (ICD)

- [SOW-248] *The Contractor SHALL document, as specific annexes to the ICD:*
- *Each direct interface between the IEG-C and NEDS to include detailed descriptions of any "configuration settings" and agreements to enable synchronisation between IEG-C and NEDS.*
 - *Each direct interface between the IEG-C and other systems (e.g., AIFS, E-NPKI)*
 - *Each interface between the IEG-C subordinate or superior IEG-C components*
 - *Each interface between the IEG-C and end-entity users and devices SHALL be documented*
- [SOW-249] *Where work was conducted by the Contractor under this Contract to document the design of any system to be interfaced to the IEG-C project, Contractor SHALL ensure the results of that work are included in the relevant annex of the ICD.*
- [SOW-250] *The Contractor SHALL develop the ICD in accordance with the template provided by the Purchaser.*

5.4.2.1.2. Security Accreditation Documentation Package

- [SOW-251] *The Contractor SHALL ensure that the Security Accreditation Documentation Package comprises all documentation mentioned in Section 10.3.*

5.4.2.1.3. Requirements Traceability Matrix (RTM)

- [SOW-252] *The Contractor SHALL develop and maintain a RTM that establishes a complete cross-reference between on the one hand the requirements stated in the SRS, System Security Requirements Statement (SSRS), and on the other hand the detailed contents of the SDS in terms of SDS statements and lowest-level CIs.*

5.4.2.1.3.1 The minimum contents of the RTM are listed in Section 15.12: Requirements Traceability Matrix (RTM).

5.4.3. Disaster Recovery Plan (DRP) and Backup Plan

- [SOW-253] *The Disaster Recovery Plan & Procedures and the Backup Plan & Procedures prepared by the Contractor SHALL address the best practices developed by the vendors of the system components, including security best practices.*

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- [SOW-254] *The Disaster Recovery Plan & Procedures prepared by the Contractor SHALL address all possible scenarios and corresponding actions, including security.*
- [SOW-255] *The Disaster Recovery Plan & Procedures prepared by the Contractor SHALL align with the site-specific Disaster Recovery Plan & Procedures, including those defined in the ITM Joining Instructions.*
- [SOW-256] *The Contractor SHALL ensure the Backup Plan & Procedures align with the site-specific Backup Plan & Procedures, including those defined in the ITM Joining Instructions.*
- [SOW-257] *As a minimum, the Contractor SHALL ensure the Disaster Recovery Plan and Procedures address the following scenarios:*
- *Recovery of an entire IEG-C;*
 - *Transfer of an IEG-C service from one platform to another.*
 - *The Contractor SHALL define for every IEG-C component:*
 - *Storage capacity for back up*
 - *Type of storage to use*
 - *Back up frequency*
 - *Type of back up (full or incremental)*
 - *Level of information to back up*
- [SOW-258] *The Contractor SHALL ensure the Disaster Recovery Plans & Procedures clearly distinguish between service restoration and data restoration, and SHALL include a disaster recovery kit.*
- [SOW-259] *The Contractor SHALL deliver the disaster recovery kit which SHALL contain distribution media for all software (including versions, upgrades/updates, patches and hot-fixes) to restore an IEG-C Element from "bare metal", in accordance with site-specific Disaster Recovery plans.*
- [SOW-260] *The Contractor SHALL deliver the disaster recovery kit that includes a full, customized, installation plan that covers all steps (including Operation System (OS) installation) to build and configure each of the IEG-C components.*
- [SOW-261] *The Contractor SHALL ensure that Volume Shadow copy service SHALL be used to optimize the backup/recovery process where appropriate.*
- [SOW-262] *The Contractor SHALL ensure that disaster recovery and back-up procedures is included in the Technical Manuals and SHALL be a dedicated section of it.*
- [SOW-263] *The Contractor SHALL ensure that disaster recovery Kit is analysed in terms of ILS resources and all the necessary resources and support needed for disaster recovery is produced as required in SECTION 6 : Integrated Logistics Support (ILS) of this document.*

5.4.4. Design Reviews

- [SOW-264] *The Contractor SHALL conduct Design Reviews, a Preliminary Design Review (PDR at EDC+3MO) and a Critical Design Review (CDR at EDC+6MO), to present the IEG-C Design Documentation Package. The Contractor SHALL include the following areas in the Design Review:*
- *IEG-C overall system architecture and interactions*
 - *System functionality, modularity and interfaces, breakdown into lowest-level Configuration Items (CI; see section 12.4 for CIs identification)*

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- *Off-the-shelf products to be used in the system: the Contractor SHALL identify the intended product and version, and note if any additional elements (such as macros or plug-ins) are required*
- *Interfaces with other relevant systems (i.e., with NEDS)*
- *System security design: Presentation of the Risk Assessment Methodology that the Contractor intends to use for the Project, Results of the Risk Analysis, Definition and implementation of the Security measures to counter the risks that will be identified in the Security Risk Assessment (SRA). This presentation SHALL be done as a separate item.*
- *Sequence and scope of system tests of the ABL and any requirements for Purchaser support and participation*
- *Any change request or off-specification*
- *Any changes to the PBS and PFD*
- *Any changes to the PMS*
- *Cost considerations*
- *Risk assessment of proposed changes and an update of the Risk Log and Issue Log*
- *RTM*
- *MTP traceable to system system/component requirements and acceptance criteria.*

[SOW-265] *The Contractor SHALL provide a Design Review Report for every Design review cycle.*

[SOW-266] *The Contractor SHALL update the Design Documentation Package as per the result of the Design Review.*

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SECTION 6: INTEGRATED LOGISTICS SUPPORT (ILS)

6.1. General

6.1.1. This section outlines the supportability requirements of the project.

[SOW-267] *The Contractor SHALL identify in the PMS of the PMP the Contractor activities and milestones related to ILS.*

[SOW-268] *The Contractor SHALL use the [ALP 10-2016] and [AIA/ASD SX000i, 2016] specification as guidance when establishing and conducting the ILS Process (i.e. Integrated Logistics Support – ILS Process), in accordance with the requirements of the contract.*

[SOW-269] *The Contractor SHALL use [ADMP-1], [ADMP-2], [MIL-HDBK-338B], [MIL-HDBK-470A], [MIL-STD-1388-1A], [MIL-STD-1388-2B] and [ASD S3000L] as guidance when establishing and conducting the Logistic Support Analysis (LSA) programme, including the RAMT programme, in accordance with the requirements of the Contract.*

6.2. Integrated Logistics Support Plan (ILSP)

[SOW-270] *The Contractor SHALL provide and maintain an ILSP, tailored to the Project Program phases.*

[SOW-271] *The Contractor SHALL develop the ILSP in accordance with the requirements described in this section and cover all areas.*

6.2.1. The ILSP is a standalone Product Lifecycle documents that will survive the project after FSA. As such, these documents are not to be submitted as part of the PMP, but will be part of the Technical Proposal.

[SOW-272] *The Contractor SHALL detail in the ILSP how ILS will be designed, managed, procured and provided throughout the system lifetime.*

[SOW-273] *The Contractor SHALL provide an updated version of the ILSP to the Purchaser for each milestone for Purchaser acceptance.*

[SOW-274] *The Contractor SHALL cover the following sections at minimum including the processes to perform the related activities in ILSP:*

- *The Contractor's ILS organization, roles, responsibilities and procedures;*
- *Maintenance Concept (Maintenance Plan, detailed Maintenance Level definitions and tasks);*
- *Planning of supply support (System Inventory, Codification, Recommended Spare Parts and Consumables list);*
- *Design Influence*
 - i. Reliability, Availability, Maintainability and Testability (RAMT) Programme planning, activities, processes (including testing);*
 - ii. Logistics Support Analysis planning, activities and processes;*
 - iii. Support Case planning, releases and processes.*
- *Support and Test Equipment Lists;*
- *Computer Resources (licences, SWDL etc.);*

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- *Manpower and Personnel Requirements;*
- *Technical Documentation (organization, process, inputs, reviews, release schedule)*
- *Planning of packaging, handling, storage, and transportation (PHS&T);*
- *Planning of supply chain security.*
- *In-Service Support Plan (as an annex)*

6.2.2. 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.

[SOW-275] *The Contractor SHALL maintain and update the ILSP as required to reflect changes in the Project Baselines, in the SOW, or in support arrangements for any IEG-C System CIs.*

[SOW-276] *The Contractor SHALL provide an In Service Support Plan (ISSP) as an annex to the ILSP and SHALL cover the following topics at minimum with practical instructions:*

- *the Contractor's Support organization, roles, responsibilities, processes and procedures (between PSA and FSA; and during warranty);*
- *description of the system of interest (SOI) in scope of integrated support,*
- *description of the integrated support concept, including the maintenance concept, warranty concept, customer support concept, service management & control concept including but not limited to the incident, problem management, release and deployment management, and configuration and change management;*
- *description of the parties involved, their responsibilities for the various levels of support (with indication of start and end dates), interfaces, response times and POC details;*
- *description and allocation of operation, SM&C and corrective and preventive maintenance tasks required to operate and maintain the system;*
- *description of the Sustainability measures (obsolescence management, failure reporting, performance monitoring, reliability and availability assessment and reporting);*
- *procedures to follow when any part of the system fails; response times for analyses and resolution by the Contractor,*
- *comprehensive lists of all available spares, consumables, software licenses (SWDL), support software tools, COTS documentation, technical documentation, training documentation and manuals.*

[SOW-277] *The Contractor SHALL provide the latest ISSP as part of PSA (EDC+20mo) and FSA (EDC+27mo) milestone achievement.*

6.3. Maintenance and Support concept

[SOW-278] *As an Annex of the ILSP and in accordance with SOW ANNEX F, the Contractor SHALL develop and maintain the IEG-C System 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 IEG-C Capability.*

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- [SOW-279] *The Contractor SHALL design/deliver the system/elements and the Operation/Support/Maintenance documentation, training, instructions, and resources (skills, tools/test equipment) in order to allow the Purchaser to fully operate the system, to perform Level 1, Level 2 and Level 3 Maintenance and Support from the Provisional Site Acceptance (PSA).*
- [SOW-280] *Starting from PSA (EDC+20mo) and until FSA (EDC+27mo) with all the sites are completed; the Contractor SHALL be responsible for the Level 2, Level 3 and Level 4 maintenance and support activities in each activated site within the scope of the Initial Operational Support.*
- [SOW-281] *Starting from FSA and until the end of warranty period, the Contractor's dedicated on-site interventions and/or off-site resolutions SHALL carry on all 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.*
- [SOW-282] *The Contractor SHALL ensure the Maintenance and Support Concept fulfills the functional and non-functional Requirements of the IEG-C System.*
- [SOW-283] *The Contractor SHALL ensure the Maintenance and Support Concept defines the Maintenance and Support tasks at any level of support and at any level of maintenance.*
- [SOW-284] *The Contractor SHALL ensure the Maintenance and Support Concept defines the Delivered Baselines maintenance and supply flow amongst the various NATO locations, organisations, groups, and people.*
- [SOW-285] *The Contractor SHALL ensure the Maintenance and Support Concept defines and describes the Maintenance and Support process interfaces to all other processes.*
- [SOW-286] *The Contractor SHALL define the 2nd and 3rd Level Support process interfaces to the other processes, including the existing NCIA Service Desk (1st Level of Support).*
- [SOW-287] *The Contractor SHALL ensure the Support process interface definition includes the input and output information, its structure, the communication path (i.e., Points of Contact (POC)), the time constraints for sending and receiving information, and quality criteria to evaluate the integrity of the interface. This SHALL Include the related ITIL Processes to be tailored and detailed for the purposes of IEG-C System Support Concept.*
- [SOW-288] *At each Support and Maintenance Level, the Contractor SHALL ensure the Support Concept describes the support environment, constraints, locations, procedures, artefacts, organisation and personnel.*
- [SOW-289] *The Contractor SHALL ensure the procedural description includes objective(s), triggering event(s), input(s), output(s), task(s), roles and responsibilities (Responsible, Accountable, Consulted and Informed (RACI) format), constraints, exceptional case(s), and tool(s) support.*
- [SOW-290] *The Contractor SHALL ensure the IEG-C System ILSP is based on the established Support Concept, approved by the Purchaser before the CDR (EDC+6MO) milestone.*

6.4. Design Influence

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6.4.1. Reliability, Availability, and Maintainability (RAM) Requirements

- [SOW-291] *The Contractor SHALL develop its RAM Programme and perform the analysis based on the RAM metrics and requirements outlined in the SRS.*
- [SOW-292] *The Contractor SHALL ensure the design of the system includes sufficient redundancy and other Reliability, Maintainability, Availability and Testability measures to ensure the RAM requirements in this Contract are achieved and attained at an optimal Total Cost of Ownership (TCO), minimising preventive maintenance, manpower requirement and usage of special-to-type tools and test equipment.*
- [SOW-293] *The Contractor SHALL document in the Support Case such measures taken to ensure fulfilment of RAM requirements and optimisation of TCO.*
- [SOW-294] *The Contractor SHALL ensure the RAM analysis clearly captures and displays the RAM characteristics of each main component, aggregated up to the level of sub-system, and subsequently the entire system. System breakdown in line with the configuration item structure SHALL be used as reference to perform the analysis.*
- [SOW-295] *The Contractor SHALL ensure the RAM is used to calculate and predict intrinsic availability and operational availability, as defined in SRS, for each type of subsystem, each type of node and each type of end-to-end connection.*
- [SOW-296] *The Contractor SHALL ensure the RAM analysis includes the reliability prediction based on the proposed design solution and created RBDs, as well as the reliability allocation model to include to trigger the design changes*
- [SOW-297] *The Contractor SHALL ensure the RAM analysis includes Failure Modes, Effects and Criticality Analysis (FMECA) in accordance with MIL-STD-1629A.*
- [SOW-298] *The Contractor SHALL ensure that the first issue RAM analysis is performed and delivered before PDR (EDC+3MO) , updated before CDR and finally accepted at CDR (EDC+6MO), to include all relevant data to demonstrate compliance with the SRS and SOW requirements. The Contractor SHALL document such data in the Support Case as outlined below.*

6.4.2. Logistics Support Analysis (LSA)

- [SOW-299] *The Contractor SHALL conduct a Logistic Support Analysis (LSA) Process, tailored to support the specific scope of the System operation activities.*
- [SOW-300] *The Contractor's LSA analysis SHALL include, as a minimum:*
- *Task Analysis for identification of operational tasks, Service Management and Control (SMC) tasks; and administration and maintenance tasks (corrective, preventive, adaptive)*
 - *Level of Repair Analysis (LORA) to determine the correct level of Support/Maintenance needed to perform each Operational and Maintenance task*
 - *Planning and execution of the O&M Procedures Verification Test with references to the Master Test Plan.*
 - *Total Cost of Ownership Analysis, which SHALL include the warranty cost and all the operational costs and all the maintenance cost for all the support and Maintenance levels for at least 5 years after FSA*
 - *Obsolescence Analysis and Management for each software and hardware CI from end of sales, end of production and end of support perspective. .*

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- [SOW-301] *The Contractor's analysis SHALL contain also the list of procedures needed to configure the capability for mission and/or exercise environment.*
- [SOW-302] *The Contractor SHALL ensure that Operation tasks are identified through analysis of the functional and non-functional requirements of the new system taking into account mission scenarios and conditions under which the system will be operated.*
- [SOW-303] *The Contractor SHALL ensure the analysis examines each system function allocated to personnel and determines what operator tasks are involved in the performance of each system function.*
- [SOW-304] *The Contractor SHALL ensure that maintenance tasks are identified using the RAM data and results.*
- [SOW-305] *The Contractor SHALL ensure the SMC tasks are identified through analysis of all functions related to customer support and SMC.*
- [SOW-306] *For each task in Task Analysis, the Contractor SHALL determine the properties and physical resources required to execute the task. For that purpose, each task SHALL be analysed to identify and capture:*
- *The support level to be assigned;*
 - *Location/ facility involved;*
 - *Personnel skills required;*
 - *Roles (as they are assigned in Purchaser's maintenance and support organization);*
 - *Task duration and frequency, reusing Mean Time Between Failures (MTBF) and Mean Time To Repair (MTTR) data available;*
 - *Manpower required.*
- [SOW-307] *For each task, the Contractor SHALL perform a cost calculation based on the properties and physical resource requirements of each task.*
- [SOW-308] *The Contractor SHALL ensure the cost calculation provides an estimated annual cost for each task.*
- [SOW-309] *The Contractor SHALL ensure the data and results of the Task Analysis are used as input to the development of technical publication (all manuals at any level of maintenance) and the development of training material.*

6.4.3. Support Case

- [SOW-310] *The Contractor SHALL document the LSA and RAM process, resourcing and organization, inputs, outputs, methodology, and timelines within ILSP.*
- [SOW-311] *The Contractor SHALL develop and maintain the necessary Support Cases in which all LSA and RAM activities SHALL be documented, which include:*
- *System description and breakdown down to lowest level of maintenance significant items (i.e. LRUs, SRUs) and in accordance with the CI structure and identifications*
 - *All COTS equipment datasheets, clearly indicating the reliability and maintainability characteristics which will be used as input for LSA and RAM.*

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- *Availability, Reliability, and Maintainability analysis modelling, calculations and results (complete set of Reliability Block Diagrams (RBDs), FMECA including a list of critical items);*
- *Spare part calculations and modelling,*
- *Recommended Items List (RIL) including spares, consumables, tools and test equipment with rationale and justifications,*
- *The complete data for LSA activities and results,*
- *The complete data set of the Task Analysis, including listings of all operation tasks, SMC tasks, administrative tasks, corrective maintenance tasks and preventive maintenance tasks;*
- *References to the Master Test Plan and other relevant testing documentation for RAM requirements verification and validation;*
- *The results of the Disaster Recovery Logistic Analysis.*
- *The results from the O&M Procedures Verification Test;*
- *The Total Cost of Ownership Analysis results*
- *The Obsolescence Analysis results*

[SOW-312] *The Contractor SHALL ensure its Support Case forms a body of evidence, providing sufficient credibility that all LSA and RAM requirements outlined in SOW 6.4.1 and 6.4.2, and SRS have been met and providing credibility to the data used and the results achieved in all calculations and models.*

[SOW-313] *The Contractor SHALL ensure its Support Case provides rationale and justifications for all data and formulas used in any of the calculations and models.*

[SOW-314] *The Contractor SHALL ensure that the first issue of Support Case is delivered before PDR (EDC+3MO) encompassing all the design details up to the PDR milestone, updated before CDR and accepted at CDR (EDC+6MO), to include all relevant data to demonstrate compliance with the SRS and SOW requirements.*

6.5. Technical Documentation

[SOW-315] *The Contractor SHALL provide all the technical documentation for IEG-C System.*

[SOW-316] *The Contractor SHALL ensure all the Technical Documentation is kept updated and under configuration control for the entire life cycle of the system.*

[SOW-317] *The Contractor SHALL ensure the information contained in each technical documentation is coherent with the operational configuration deployed, i.e., OBL.*

6.5.1. This SOW will specify the format for each type of technical documentation.

[SOW-318] *The Contractor SHALL ensure the technical documentation consists (as a minimum) of:*

- *Training documentation*
- *Operation and User Manuals*
- *Maintenance Manual (including administration manuals)*
- *OEM Manuals for Commercial-Off-The-Shelf (COTS) products*

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- *As-Built Documentation*
- *Other project documentation as required in this SOW.*

- [SOW-319] *The Contractor SHALL ensure the all activities, milestones and actors associated with the development of technical documentation are described in the ILSP.*
- [SOW-320] *The Contractor SHALL ensure all technical documentation SHALL be provided in the English language.*
- [SOW-321] *The Contractor SHALL provide technical documentation as required in the various Sections of this SOW.*
- [SOW-322] *The Contractor SHALL ensure the Classification of Technical documentation is at the lowest level possible.*
- [SOW-323] *The Contractor SHALL ensure the all documents, however short, identify the complete name and version of the software they refer to, originator, date of production, the type of document, and Configuration Management information of the document itself.*
- [SOW-324] *The Contractor SHALL ensure the all documents also contain a list of those CIs (title and version identifier) that the document or parts thereof refer to.*
- [SOW-325] *The Contractor SHALL submit all final and accepted versions of documentation deliverables in electronic format, as Portable Document Format (PDF).*
- [SOW-326] *The Contractor SHALL submit documentation, intended for review by the Purchaser, with each modification identified through the change tracking feature or otherwise marked.*
- [SOW-327] *The Contractor SHALL submit documentation, intended for review by the Purchaser, in electronic format.*
- [SOW-328] *The manuals SHALL supplement the COTS O&M documentation the Contactor SHALL provide with the IEG-C System.*
- [SOW-329] *The Contractor SHALL capture and document lessons learned during the System development and the System Installation.*
- [SOW-330] *If activated, the Contractor SHALL provide updated technical documentation in accordance with Section 6.5 to cover the changes for each optional site and service outlined in the SSS.*

6.5.2. Operation and User Manuals

- [SOW-331] *The Contractor SHALL develop, provide and maintain the System Operation Manual (SOM).*
- [SOW-332] *The Contractor SHALL provide an Operation Manual that describes the complete system by the explanation of functional blocks and CIs (HW, SW).*
- [SOW-333] *The Contractor SHALL provide an Operation Manual that defines the in-depth, step-by-step procedure how to operate the system and how to perform Level 1 maintenance tasks.*
- [SOW-334] *The Contractor's SOM SHALL include all the possible system operations in order to safely operate and use the capability.*
- [SOW-335] *The Contractor SHALL ensure the operation described in the Manual is an outcome of the Operation and maintenance Task Analysis as described in this SOW.*

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- [SOW-336] *The Contractor SHALL ensure that each and every procedure include as a minimum the following information:*
- *Location/facility involved (if the operation is performed remotely, it has to be specified);*
 - *Personnel skills required;*
 - *Task duration and frequency, reusing MTBF and MTTR data available;*
 - *Manpower required;*
 - *Tools and special tools required (if any);*
 - *The steps needed to perform the operation.*

6.5.3. Maintenance and Administration Manuals.

- [SOW-337] *The Contractor SHALL develop, provide and maintain the System Maintenance and Administration Manual.*
- [SOW-338] *The Contractor SHALL ensure the Maintenance Manual contains all possible Scheduled and Unscheduled maintenance procedures and all possible Administration procedures as requested in this SOW.*
- [SOW-339] *The Contractor SHALL ensure the Maintenance Manual contains a full illustrated product breakdown list. The Contractor SHALL ensure that all CIs and all items required for maintenance are included in this full product breakdown list.*
- [SOW-340] *The Contractor's Maintenance Manual SHALL provide functional descriptions and specifications, with appropriate drawings, of the mechanical, electrical, and electronic assemblies, sub-assemblies, physical and logical components, configuration files and interfaces that comprise the system.*
- [SOW-341] *The Contractor's Maintenance Manual SHALL provide information, illustrations, and procedures required for: deployment, installation, configuration, provisioning, disaster recovery, backup/restore, BIT/condition monitoring, fault finding and fault isolation/ troubleshooting techniques, test remove/ replace; and check out of each hardware and software item with relevant safety instructions.*
- [SOW-342] *The Contractor's Maintenance Manual SHALL provide description of all the configuration settings for the modules, services and components/ how configuring the logging and uses of performance counters/ where finding the log files/ the different categories of logging/ the different performance counter categories.*
- [SOW-343] *The Contractor's Maintenance Manual SHALL provide the description for the usage of all third-party applications needed to configure, manage and maintain the system.*
- [SOW-344] *The Contractor's Maintenance Manual SHALL provide the descriptions of all indicators, switches, switch positions, and displays.*
- [SOW-345] *The Contractor's Maintenance Manual SHALL define the in-depth, step-by-step procedure how to perform the 1st, 2nd and 3rd level corrective and preventive maintenance tasks and SM&C tasks.*
- [SOW-346] *The Contractor's Maintenance Manual SHALL include a maintenance plan to cover all the preventive maintenance activities based on the operational time or calendar time as applicable.*

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- [SOW-347] *The Contractor SHALL ensure the Procedures contained in the manuals are an outcome of the O&M Task analysis requested in Section 11.5.2.*
- [SOW-348] *The Contractor SHALL ensure the manual includes an annex with troubleshooting information that provides breakdowns of actions to be performed to solve a full range of (potential) problems or provide workarounds (Problem Management).*
- [SOW-349] *The Contractor SHALL ensure the manual contains all possible configuration information and settings.*
- [SOW-350] *In case Software Identifier (SWID) tags cannot be automatically installed by software installers (e.g., legacy or third party software), the Contractor SHALL include in installation documentation descriptions of the process to manually install SWID tags.*
- [SOW-351] *The Contractor SHALL ensure the manual contains all possible information on the use and locations of Log Files.*
- [SOW-352] *The Contractor SHALL ensure that each and every procedure include as a minimum the following information:*
- *The support level to be assigned;*
 - *Location/facility involved (if the operation is performed remotely, it has to be specified);*
 - *Personnel skills required;*
 - *Task duration and frequency (if applicable), reusing MTBF and MTTR data available;*
 - *Manpower required;*
 - *Tools, test equipment and special tools required (if any);*
 - *The steps needed to perform the procedure.*

6.5.4. OEM Manuals for Commercial Off the Shelf (COTS) product

- [SOW-353] *The Contractor SHALL provide OEM manuals for all Commercial Off-the-Shelf (COTS) hardware and software installed.*
- [SOW-354] *The Contractor SHALL be responsible to keep the COTS OEM manual under configuration control and to assure that all the COTS OEM Manuals will be always coherent with the operation configuration deployed, i.e., OBL.*
- [SOW-355] *The Contractor SHALL assure that all the possible information needed to configure, operate, manage and maintain the COTS product will be in the User Manual and in the Maintenance Manual if they are no in the COTS OEM manuals.*

6.5.5. As-Built Documents

- [SOW-356] *The Contractor SHALL provide as-built installation drawings, which reflect the complete installation conducted by the Contractor for each site.*
- [SOW-357] *The Contractor SHALL ensure that all as as-built drawings SHALL comprise:*
- *Layout Plans showing the locations of all Contractor installed assets;*
 - *Cabling Plans showing all Contractor installed cabling, per security classification, clearly identifying the location and labelling of each cable, together with the terminations at both ends and the use of the cable;*
 - *Rack Layout Plans for all Contractor installed racks;*

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- *System Configuration Plan showing all installed assets with all their interfaces and interconnections, both internal and external.*

[SOW-358] *The Contractor SHALL ensure that all as-built drawings are cross-referenced and consistent with each other and with any other documents provided under this Contract, such as manuals and training material.*

[SOW-359] *The Contractor SHALL ensure that all as-built drawings representing technical networking and service configuration diagrams use layered views, as follows:*

- *One layer SHALL be created for the physical view, covering hardware, ports and cable-connections (including also signal flow, electrical power and grounding);*
- *One layer for the logical view, covering VLANs, virtual servers, logical links;*
- *One layer for the addressing and routing information;*
- *Service view schematics.*

6.5.6. Other Project Documentation

[SOW-360] *The Contractor SHALL ensure all Other Project Documentation respects the general requirement about publications in this SOW (SOW 11.6.12; SOW 11.6.13 as a minimum).*

6.5.7. Publication Criteria

[SOW-361] *The Contractor SHALL prepare and submit for approval a set of business rules which explain the harmonization criteria of all the technical documentation in terms of fonts, numbering, bullet points and all the publication rules to be used for the complete set of documentation. The business rules will be applicable for both Paper and electronic publication.*

[SOW-362] *The Contractor SHALL ensure all Manuals are printable if required and therefore the page format SHALL be A4, printable in loose-leaf form, and possible to be presented bound in stiff backed covers with 4-ringed binders which permit the removal and insertion of individual pages and drawings.*

[SOW-363] *The Contractor SHALL ensure each page contains the appropriate NATO classification of the manual at the top and bottom of each page.*

[SOW-364] *The Contractor SHALL ensure all pages containing drawings and schematic diagrams are of the same size as other pages of the manuals.*

[SOW-365] *The Contractor SHALL place the appropriate security classification in the identification block of each drawing.*

[SOW-366] *The Contractor SHALL deliver soft copies of any composed or compiled documentation in Compact Disc Read-Only Memory (CD-ROM) or digital versatile disc (DVD) format.*

[SOW-367] *The Contractor SHALL ensure all documentation delivered in this Contract is compatible with Microsoft Office Professional and Adobe PDF.*

[SOW-368] *The Contractor SHALL deliver O&M Manuals in Microsoft Office Professional or PDF format, if available. If not available in this format, another common format may be accepted. If the commercial documentation is not available in CD-ROM, another form of electronic media is acceptable with the prior authorization of the Purchaser PM.*

[SOW-369] *The Contractor SHALL ensure the physical support of electronic, optical or soft copies of documents display the highest level of the classification of their contents.*

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[SOW-370] *The Contractor SHALL ensure the Header and/or Title of the directory structure of documentation provided in soft copy format bears a reminder of the highest classification level of its contents.*

[SOW-371] *For ease of handling, the Contractor SHALL separate unclassified from classified documentation and provided it on separate CD-ROMs or DVDs.*

6.5.8. Amendments to documentation

[SOW-372] *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.*

6.5.9. Manual Issuing Schedule

6.5.9.1. Releases of manuals are described in Section 9.6.4.

[SOW-373] *The Contractor SHALL test and validate the procedures and resources described in the technical manuals.*

[SOW-374] *The Contractor SHALL provide all the technical documentation at least 12 weeks prior to the final delivery dates outlined in SSS to enable the Purchaser to perform a detailed review as the content matures and leave sufficient time for the updates resulted by the review. The Contractor SHALL include the documentation release plan within the first version of ILSP for approval, to provide Purchaser enough visibility for the schedule.*

[SOW-375] *Not later than one (1) month prior to the delivery of the IEG-C at the first location, the Contractor SHALL submit a copy of the final technical and training publications to the Purchaser for review.*

[SOW-376] *The Contractor SHALL ensure any resulting recommended changes, corrections and/or additions submitted by the Purchaser are incorporated by the Contractor in the final version.*

[SOW-377] *The Contractor SHALL provide the final versions of each Technical Publication, and Training Material in the requisite number of copies within four (4) weeks of FSA.*

[SOW-378] *Until the expiration of the warranty, the Contractor SHALL remain responsible for any changes to the manuals and training material 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.*

[SOW-379] *The Contractor SHALL deliver two copies on CD-ROM of the IEG-C Operations Manuals for each of the sites, plus two copies for the NCI Agency.*

[SOW-380] *In addition to the "Manual Issuing schedule", the Contractor SHALL update all Manuals as needed throughout this contract.*

6.6. Training

6.6.1. General Requirements:

[SOW-381] *The Contractor SHALL provide all training modules and courses required to enable all initially assigned Purchaser personnel to operate and maintain the system at Level 1, 2 and 3. The Contractor SHALL ensure all activities, milestones and actors associated with IEG-C System Training are guided by the Training Plan.*

[SOW-382] *The Contractor SHALL design, develop and deliver minimum the following trainings;*

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- System operations training
- System maintenance training
- Guard administration training
- Other administration trainings (e.g. SMC, Security) identified during TNA
- Train the Trainer (TtT) trainings
- Test Crew trainings
- Transition Training (in each site).

[SOW-383] *The Contractor SHALL design, develop, deliver and maintain the following types of training:*

- Classroom Training (for operators, system administrators, guard administrators, engineers)
- On the Job Training (for operators, system administrators, guard administrators, engineers)
- Computer Based Training (CBT) modules for self-paced individual learning, compatible with the NCIA Learning Management System (only for NU).

[SOW-384] *As part of the system implementation the Contractor SHALL provide on-site training to all support staff designated by the Site POC and on all tasks required to operate, maintain and recover the IEG-C System.*

[SOW-385] *As part of the training process the Contractor SHALL provide the on-site training course (operators and administrators/maintainers) for a maximum number of two sessions in Mons for each type of training as outlined in [SOW-382], or another site designated by the Purchaser or an online course. The Contractor SHALL provide the Transition Training in each installation site both for operation and maintenance, as applicable.*

[SOW-386] *The Contractor SHALL provide each training session for a maximum of 12 persons per session.*

[SOW-387] *The Contractor SHALL use the Training Needs Analysis (TNA) to refine the number of training sessions needed for each role.*

[SOW-388] *The Contractor SHALL deliver any additional training sessions that may be deemed necessary after completion of TNA at no additional cost to the Purchaser.*

[SOW-389] *As part of the training process the Contractor SHALL provide Train the Trainer courses for a minimum of 5 instructors designated by the Purchaser.*

[SOW-390] *The Contractor SHALL provide Training and all related training documentation in the English language.*

[SOW-391] *The Contractor SHALL complete Training Courses before the PSA (EDC+20mo) milestone, with the exception of the Test Crew trainings which the Contractor SHALL provide before the official test events start.*

6.6.1.1. The Purchaser will provide the following basic facilities: room, power supply, tables, chairs, network connectivity.

[SOW-392] *The Contractor SHALL provide all other facilities, services and equipment (including servers and workstations for students and teachers, network equipment, all required software, etc.) necessary to carry out the On-Site Training activities.*

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- [SOW-393] *The Contractor SHALL identify the eventual prerequisite of the personnel for training participation as part of the TNA.*
- [SOW-394] *The Contractor SHALL train the Reference and Testing Facility staff to operate the Reference and Testing Facility, through attending a short, informal, on-site training course that the Contractor SHALL prepare, organise and lead.*
- [SOW-395] *The Contractor SHALL provide training for all releases of the project.*
- [SOW-396] *The Contractor SHALL ensure the Training Materials include how the Transition from one Release to the next release is realised and how to install, configure and maintain the Modified or new Component capability, including COTS components.*
- [SOW-397] *If activated, the Contractor SHALL provide all training related services and deliverables in accordance with Section 6.6 for each optional site and service outlined in the SSS.*

6.6.2. Training Needs Analysis (TNA)

- [SOW-398] *The Contractor SHALL base the Training Process and Procedures on the results of the Contractor's TNA.*
- [SOW-399] *The Contractor SHALL detail its approach and planning on how the TNA process will be performed and managed within its Training Plan.*
- [SOW-400] *The Contractor SHALL conduct a TNA in accordance with the [BiSC D-075-007, 2015]. The TNA SHALL include (as a minimum):*
- *A Target Audience Analysis*
 - *A Performance Gap Analysis*
 - *A Difficulty, Importance and Frequency (DIF) Analysis;*
 - *A Training Delivery Options Analysis*
- [SOW-401] *The Contractor SHALL base the TNA on the tasks resulting from Task Analysis carried out as part of the LSA Process and on the possible gaps highlighted during the site surveys (so called Target Audience Analysis).*
- [SOW-402] *The Contractor SHALL ensure the TNA considers all staff roles involved in IEG-C System operation, administration, maintenance and support at all levels as they are assigned within Purchaser organization.*
- [SOW-403] *The Contractor SHALL perform the TNA and create the courses as applicable for different types of administrators, operators, maintenance, and support personnel as they are assigned within Purchaser organization.*
- [SOW-404] *The Contractor SHALL deliver a TNA Report that captures the results of the TNA for Purchaser approval. The TNA report SHALL include the following:*
- *A description of the TNA approach and activities*
 - *An account of the operation, support, corrective and preventive maintenance tasks considered in the TNA*
 - *The results of the Target Audience Analysis, the Performance Gap Analysis the DIF Analysis and the Training Options Analysis*
 - *The final list of Performance Objectives in the form of Table 2 of Annex H of [BiSC D-075-007, 2015].*
 - *The final list of Learning Objectives in accordance with Annex G of [BiSC D-075-007, 2015].*

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- *One or more Course Control Document II – Course Proposals in accordance with Annex L of [BiSC D-075-007, 2015] as summaries of the proposed E&IT solutions*

6.6.3. Training Plan

- [SOW-405] *The Contractor SHALL develop and provide an IEG-C System Training Plan. The Training Plan SHALL be updated to address the results of the TNA.*
- [SOW-406] *The Contractor SHALL develop and provide a Training Plan that describes how it will meet the Training requirements outlined in the contract and found after the TNA for initial and follow-on training.*
- [SOW-407] *The Contractor SHALL develop and provide a Training Plan that describes the quality management process for training.*
- [SOW-408] *The Contractor SHALL develop and provide a Training Plan that addresses all stages of training development, delivery, and support covered under this Contract.*
- [SOW-409] *The Contractor SHALL develop and provide a Training Plan that describes in a coherent way how training will be designed, developed, delivered, and maintained throughout the life of the IEG-C System.*
- [SOW-410] *The Contractor SHALL develop and provide a Training Plan that includes training design documentation using the Course Control Document III – Programme of Classes template provided in [BiSC D-075-007, 2015] Annex R-4.*
- [SOW-411] *The Contractor's Training Plan SHALL take the TNA results into consideration, and based on the TNA results it SHALL propose the specific courses for all maintenance levels and operation.*
- [SOW-412] *The Contractor's Training Plan SHALL propose the different training types (classroom, on the job training, train the trainer and CBTs) for each course for Purchaser approval.*
- [SOW-413] *The Contractor SHALL describe in this plan the approach to training, milestones, organization and resource requirements, management structure, interrelationships and other tasks related for training development.*
- [SOW-414] *The Contractor SHALL develop and provide a Training Plan that describes the training documentation for each course including but not limited to the syllabuses, schedules, course prerequisites (both for attendees and physical resources), course descriptions and training materials, method of evaluations and instructors.*
- [SOW-415] *The Contractor SHALL recommend in this plan the mode(s) of training (e.g., formal classroom, individual computer-based, on-the-job, commercial or a combination) and the rationale for these recommendations for each type of training (User , Administrator, etc.).*
- [SOW-416] *The Contractor SHALL develop and provide a Training Plan that describes the transition training process.*
- [SOW-417] *The Contractor SHALL develop and provide a Training Plan that describes the support to be provided by the Purchaser (manpower, services, and material).*
- [SOW-418] *The Contractor SHALL deliver a Training Plan that describes the basic physical classroom and infrastructure required to perform the training in Purchaser locations.*

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6.6.4. E-Learning Training / Computer Based Training (CBT)

[SOW-419] *The Contractor SHALL prepare all e-learning training material in compliance with the Sharable Content Object Reference Model (SCORM) edition 2004.*

6.6.4.1. All e-learning material prepared by the contractor should be compatible and deliverable on the NATO Advanced Distributed Learning (ADL) platform.

[SOW-420] *The Contractor SHALL produce CBT/E-Learning material that complements the IEG-C classroom training by defining and explaining key concepts and terminology of the operational processes as incorporated into IEG-C features and functions.*

[SOW-421] *The Contractor SHALL produce a CBT/E-Learning Package that allows modifications by the Purchaser to reflect changes in the training concept and/or content without any additional cost to NATO.*

[SOW-422] *The Contractor SHALL produce a CBT/E-Learning Package to provide the system administrators with a generic view of the system functionalities, operational aspects, troubleshooting and maintenance.*

6.6.5. Training Materials

[SOW-423] *The Contractor SHALL provide all the appropriate training documentation to support the Purchaser Personnel to test, operate and maintain the IEG-C System and its support equipment.*

[SOW-424] *Each training course material SHALL be provided for Purchaser review minimum 8 weeks before the start of the training courses.*

[SOW-425] *The Contractor SHALL generate the following Training Material:*

- *Training syllabus,*
- *Student manual*
- *Instructor guide and material*
- *Learning guide*
- *Quick reference card*
- *Upon completion, a training certificate*
- *Course evaluation feedback form*
- *Performance support materials to support users after the training during their work, with the following characteristics: 'bite-sized' learning chunks (maximum 5 minutes of learning time), designed to model or explain concrete tasks.*

[SOW-426] *The Contractor SHALL ensure the Training documentation conforms to the standards outlined in the training Section of the SOW and SRS.*

[SOW-427] *The Contractor SHALL ensure the Training documentation (Including the E-Learning Material) is developed in accordance with the results of the TNA.*

[SOW-428] *The Contractor SHALL ensure the training materials for the IEG-C System-specific courses provide all the information required to conduct the courses and maintain the training materials.*

[SOW-429] *The Contractor SHALL ensure the materials follow an existing instructional methodology that links training objectives with course structure, instructional techniques, course content, and assessment tools.*

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- [SOW-430] *For the development of training material, the Contractor SHALL reuse existing COTS documentation and manuals to the maximum extent possible.*
- [SOW-431] *The Contractor SHALL ensure all course content is referenced to commercial or Contractor-developed documentation -- preferably user or technical manuals -- that describe the subject matter and are available on-site to students after course completion.*
- [SOW-432] *The Contractor SHALL ensure the hands-on exercises included in the Training Process incorporate all IEG-C System implementation activities at a site.*
- [SOW-433] *The Contractor SHALL ensure that the IEG-C System Training Materials are all provided in the UK English language. It may be assumed that all Purchasers personnel selected to attend the courses will meet the minimum Standardised Language Proficiency (SLP) of 3232 in English as specified in [STANAG 6001, 2014].*
- [SOW-434] *The Contractor SHALL include, in the Training presentation materials, all slides or other information to be presented by the instructor during the course.*
- [SOW-435] *The Contractor SHALL include, a Training Syllabus containing the following elements:*
- *Course title,*
 - *Course description,*
 - *Learning objectives, as identified in the TNA and confirmed in the Training Plan,*
 - *Entry profile,*
 - *Concepts, Functions and Features presented in the course,*
 - *Instructional methodologies to be employed in the delivery of the course,*
 - *In-class assignments or laboratories,*
 - *Evaluation tools,*
 - *Performance standards.*
- [SOW-436] *The Contractor SHALL develop and provide a Student Handbook for each course.*
- [SOW-437] *The Contractor SHALL develop and provide a Student Handbook that provides the student with necessary information on all lesson objectives and contents, guidance for all learning activities and cross-references to assist the students in achieving the course objectives.*
- [SOW-438] *The Contractor SHALL ensure that the Student Manuals take into account results from the DIF analysis and SHALL enable students to perform their major tasks.*
- [SOW-439] *The Contractor SHALL ensure the System Operations training provides all necessary information, description and operational tasks to enable the Purchaser operators to use and perform the Level 1 maintenance activities.*
- [SOW-440] *The Contractor SHALL ensure the Test Crew training provides all necessary information for the system specifications, testing environment, tools and test procedures for Purchaser test crew to be able to support the test activities. This training SHALL not exceed 4 hours in total.*
- [SOW-441] *The Contractor SHALL ensure the Transition Training provides all necessary information for on-site Purchaser personnel to understand the system and its*

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components, installation, connections and wirings, system components, preventive maintenance tasks, system shut-down and restart, disaster recovery, corrective maintenance tasks (e.g. troubleshooting, removal/replacement, software installation), and configuration system back-up procedures. This training SHALL aim to enable the on-site transition to operations for each site, and therefore it may have certain commonalities with the 'Systems Operations' and 'System Administration and Maintenance' training.

[SOW-442] *The Contractor SHALL ensure the System Administration and Maintenance Training provides as a minimum the following training on the capability (up to Level 2 and Level 3):*

- How to install, configure and maintain the capability, including COTS components.*
- How to maintain the Capability and how to use the logging and performance counters provided by the Capability. It includes as a minimum:*
- All the configuration settings for the Capability modules, services and components*
- How to configure the logging and uses of performance counters*
- Where to find the log files*
- The different categories of logging*
- The different performance counter categories*
- SMC procedures*
- How to troubleshoot the system, including actions to solve a full range of (potential) problems or provide workarounds.*
- How to manage database information, including database tables, triggers and stored procedures.*
- How perform back-up and restore procedures.*
- How to maintain the CMDB,*

[SOW-443] *The Contractor SHALL provide an Instructor's Guide for each training course. It SHALL contain all necessary information to prepare and conduct lessons and to evaluate students, including exercises, quizzes, and examinations and their corresponding answer sheets.*

[SOW-444] *The Contractor SHALL ensure the training materials also provide notes to instructors to assist in conducting the lecture or exercise. The Contractor SHALL provide the Presentation materials in Microsoft PowerPoint.*

[SOW-445] *The Contractor SHALL ensure the IEG-C capability Instructor Guide details the sequence of course instruction, providing references to the applicable training presentation materials, assignments and laboratories, evaluation tools and answer keys, Student Manual, and the Capability on-line help function. Within the Instructor Guide, the Contractor SHALL also include:*

- Materials for in-class assignments and laboratories.*
- Sample evaluation tools and answer keys.*
- Training System installation and configuration procedures.*
- The Contractor SHALL create and submit a summary of the recommended Training Materials, aids and equipment.*

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6.6.6. Training Assessment and Evaluation

- [SOW-446] *The Contractor SHALL propose an assessment and evaluation methodology to the Purchaser as part of the Training Plan.*
- [SOW-447] *The Contractor SHALL base the Training Assessment methodology on Sections 7-6 and 7-7 of [BiSC D-075-007, 2015] 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.*
- [SOW-448] *The Contractor SHALL ensure that each student is instructed at the end of each course or use of a Computer Based Training (CBT) to complete and return the course evaluation feedback form provided as part of the training course or E-Learning product.*
- [SOW-449] *The Contractor SHALL consolidate and forward student feedback to the Purchaser following each training course in the form of a Training Evaluation Report. The report SHALL also recommend changes and improvements to the training plan based on the consolidated student feedback.*
- [SOW-450] *In the report, the Contractor SHALL also address student attendance, problems encountered and actions taken to resolve the problems.*
- [SOW-451] *The Contractor SHALL revise/refine and reissue course material and CBT products to reflect the consolidated student feedback and proposed improvements in the training evaluation report.*
- [SOW-452] *The Contractor SHALL produce Training Certificates for each training session and student.*
- [SOW-453] *The Contractor SHALL deliver Training Certificates later than two weeks following the completion of training.*

6.7. Supply Support

6.7.1. System Inventory

- [SOW-454] *The Contractor SHALL provide the Purchaser's ILS POC with a System Inventory in electronic Microsoft Excel format at least 15 (fifteen) working days before the first delivery of equipment.*
- [SOW-455] *The Contractor SHALL ensure the System Inventory is site-specific and includes all items furnished under this Contract, as follows:*
- *All main equipment – i.e. all CIS items, both COTS and Developed, down to replaceable item level, hierarchically listed conform configuration item decomposition, including groups and assemblies; all installed hardware, such as equipment racks; all LRU interconnecting equipment when they are special-to-type (e.g. special-to-type cables);*
 - *All ancillary equipment – i.e. all secondary items not essential to the functioning of the system, but deemed essential to the operation of the system, such as an all-weather canopy or a tool box;*
 - *All support equipment – i.e. all tools, test equipment and PHS&T equipment;*
 - *All Purchaser Furnished Equipment (PFE);*

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- *All Purchaser and Contractor provided software;*
- *All spare parts, to include all spares, repair parts, and consumables, separated into technical and non-technical consumables;*
- *All documentation, such as manuals, handbooks and drawings; and*
- *All training materials.*

[SOW-456] *The Contractor SHALL use the inventory template provided the Purchaser to develop and submit the System Inventory. This template will be provided by the Purchaser after Contract Award.*

[SOW-457] *The Contractor SHALL provide the tempest specific part information additionally in the Inventory List for the tempested items.*

[SOW-458] *The Contractor SHALL note that the depth and content of the Inventory List will be subject to Purchaser Approval.*

6.7.2. Codification

[SOW-459] *On the basis that an adequate manufacturer's identification numbering system is in place, NATO codification (the request and assignment of NATO Stock Codes – NSN) are not be required. In all other cases, the Contractor SHALL note that NATO codification is required and SHALL support the NATO codification process in accordance with the requirements of AcodP-1 and the requirements of the STANAGs referenced and included in AcodP-1, i.e. STANAG 3150, STANAG 3151, STANAG 4177, STANAG 4199 and STANAG 4438.*

6.7.3. Labelling

[SOW-460] *The Contractor SHALL label all equipment in compliance with the Purchaser regulation and guidance, such that they contain at least the Contractor/OEM's name, identification, part number and serial number to ensure proper and quick identification of equipment down to the LRU level.*

[SOW-461] *The Contractor SHALL provide the details of the labelling approach in the CM Plan for Purchaser approval. The Contractor SHALL provide its labelling for the items that are configured and/or modified after procurement from the OEM. For these items, the Contractor SHALL assign a P/N for that specific configuration. The format and content of the labelling SHALL be provided to the Purchaser for*

[SOW-462] *The Contractor SHALL ensure that Labelling is accomplished in a manner that will not adversely affect the life and utility of the assembly or module. Whenever practicable, the Contractor SHALL ensure the label is located in such a manner as to allow it to be visible after installation.*

[SOW-463] *The Contractor SHALL ensure that Markings are as permanent as the normal life expectancy of the material on which it is applied and that legibility for identification purposes is maintained throughout each item's life expectancy.*

[SOW-464] *The Contractor SHALL ensure markings are capable of withstanding the same environmental tests required of the part and any other tests specified for the label itself. When possible, letters, numerals, and other characters SHALL be of such a size as to be clearly legible.*

[SOW-465] *The Contractor SHALL cause all labelling and marking to be in the English language.*

[SOW-466] *The Contractor SHALL ensure nameplates are attached to all major units of the system. Nameplates SHALL be in the English language with non-erasable letters/ numbers, clearly identifying the unit (unit designator); location code; as*

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well as the Contractor or OEM CAGE code, part number and serial number. These plates SHALL be properly attached in a prominent position on each major unit to enable reading and control with easy access when installed. For the items requiring special handling and/or lifting up with additional tools due to heavy weight or high volume (dimensions), special plates including the weight, dimensions and lifting points information SHALL be provided on the items. Also these items SHALL have the adequate provisioning points to enable such special handling and lifting conditions.

[SOW-467] *The Contractor SHALL ensure all delivered equipment labels contain a machine-readable code (e.g., barcode) compliant with [STANAG 4329] and [AAP-44(A)] and in accordance with the NATO coding scheme, which will be provided by the Purchaser at the request of the Contractor. In case NATO asset labels are provided by the Purchaser, the Contractor SHALL apply those labels in addition to the Contractor's labelling.*

[SOW-468] *The Contractor SHALL utilize these machine readable codes during the project to ensure that the following activities are carried out as efficiently as possible:*

- inventory checking;*
- codification, when required;*
- configuration auditing;*
- equipment PHS&T;*
- equipment delivery, placement and acceptance;*
- Maintenance.*

6.7.4. Initial Provisioning

[SOW-469] *The Contractor SHALL provide a single, fully detailed, site-specific and priced Recommended Spare parts List (RSPL) that SHALL detail comprehensively all spare parts, tools, test equipment, and consumables required to operate and maintain the system at all levels of support, and in accordance with the RAMT requirements specified in the Contract, no later than 8 weeks before PSA (EDC+20mo) meeting.*

[SOW-470] *The Contractor SHALL ensure the RSPL separately lists L1/2/3 (LRUs) items and L4 items (SRUs).*

[SOW-471] *The Contractor SHALL note that the RSPL will be used by the Purchaser to evaluate the support concept and initial provisioning of Contractor-provided spares.*

[SOW-472] *The Contractor SHALL ensure the RSPL includes the following items:*

- Spare LRUs;*
- Spare special-to-type LRU interconnecting equipment;*
- Spare ancillaries;*
- Support equipment, such as tools, test equipment and PHS&T equipment;*
- Repair parts;*
- Technical and non-technical consumables.*

[SOW-473] *The Contractor SHALL ensure the RSPL includes the following data elements:*

- Nomenclature;*
- Contractor/OEM CAGE code, part number and serial number;*

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- *Mean Time Between Failures (MTBF) – when applicable;*
- *Indication Repairable (ND) or Non-Repairable (XB);*
- *Turn Around Time (when repairable), lead time (new items);*
- *Population, by system, site and total;*
- *Recommended quantity;*
- *Indication SPOF or part of a redundant array;*
- *Unit price (including warranty and PHS&T) and minimum order quantity;*
- *Unit repair cost (for repairable items; including warranty and PHS&T);*

[SOW-474] *The Contractor SHALL provide a set of spares calculated with 98% confidence level (site level) and assumption of continuous operation for a year.*

[SOW-475] *The Contractor SHALL provide the spare part calculations as a part of the Support Case.*

[SOW-476] *The Contractor SHALL also provide the technical consumables (filters, batteries, etc.) for preventive maintenance that will be enough for approximately a year after FSA. The shelf life of these consumables SHALL be long enough to be usable until the end of first year from FSA.*

[SOW-477] *The Contractor SHALL deliver the set of the spares and consumables before PSA (EDC+20mo).*

[SOW-478] *The Contractor SHALL provide all tools and test equipment required to perform L1/2/3 maintenance, as identified in the RSPL.*

[SOW-479] *Procurement and replenishment of L1/2/3 spare parts, including PHS&T, SHALL be the responsibility of the Contractor as per the Contract until FSA. Procurement, provisioning and replenishment of technical and non-technical consumables SHALL also be the responsibility of the Contractor.*

6.7.5. Software Delivery

[SOW-480] *The Contractor SHALL provide a detailed Software Distribution List (SWDL), which SHALL detail comprehensively all Computer Software Configuration Items (CSCI) and associated software, firmware or feature/performance licenses provided under this Contract. The SWDL SHALL include, the following data elements:*

- 1) *CSCI identification number;*
- 2) *nomenclature;*
- 3) *version number;*
- 4) *license key (if applicable);*
- 5) *license renewal date (if applicable);*
- 6) *warranty expiration date;*
- 7) *date of distribution;*
- 8) *distribution location (geographically);*
- 9) *distribution target (server); and*
- 10) *Owner.*

[SOW-481] *The Contractor SHALL make sure that all licenses are originally registered with the Purchaser as end-user.*

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6.8. Packaging, Handling, Storage, Transportation (PHST)

6.8.1. Packaging

- [SOW-482] *The Contractor SHALL, for the purpose of transportation, package, crate, or otherwise prepare items in accordance with the best commercial practices for the types of supplies involved, giving due consideration to shipping and other hazards associated with the transportation of consignments overseas.*
- [SOW-483] *Any special packaging materials required for the shipment of items SHALL be provided by the Contractor at no extra cost to the Purchaser.*
- [SOW-484] *The packages, pallets and/or containers in which supplies are transported SHALL, in addition to normal mercantile marking, show on a separate nameplate the name of this project, contract number and shipping address.*
- [SOW-485] *In the case of dangerous goods and goods requiring export licenses, the Contractor SHALL ensure that all required forms and certificates are provided and that all regulations for such goods are followed.*
- [SOW-486] *For the purpose of transportation, all supplies SHALL be packaged to withstand the shipping hazards applicable to the chosen mode of transportation. Any special packaging materials required SHALL be provided by the Contractor and disposed of by the Contractor after unpacking, insofar as the packaging is not retained with the system (e.g. for storage of spares or return of failed equipment).*
- [SOW-487] *The Contractor SHALL provide a confirmation of delivery to the Purchaser's ILS POC within two weeks after each shipment. This confirmation SHALL summarize the supplies delivered, state the date of delivery, and provide a scan of the signature of the Purchaser POC on-site, receiving the supplies.*
- [SOW-488] *The Contractor SHALL be responsible of removal and disposal of all packaging material after installation in each site.*
- [SOW-489] *The Contractor SHALL produce and provide packing lists that accompany each shipment, which will include the following:*
- *The Purchaser's contract number*
 - *The NATO project number*
 - *Names and addresses of the Contractor and the Purchaser;*
 - *Names and addresses of the Carrier, Consignor and Consignee (if different from Contractor or Purchaser)*
 - *Final destination address and POC;*
 - *Method of shipment*
 - *For each item shipped: Contract Line Item Number (CLIN) number as per the SSS; nomenclature; part number; serial number; and quantity*
 - *For each box, pallet and container: box/pallet/container identification number and number of boxes/pallets/containers; weight; dimensions.*
- [SOW-490] *The Contractor SHALL ensure that two copies of the packing lists are fastened in a weather-proof, sealed envelope on the outside of each box, pallet and/or container, and one packing list put inside each container/box.*

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6.8.2. Handling and Storage

- [SOW-491] *The Contractor SHALL be responsible for all handling and storage of equipment, packages, boxes and containers during the project.*
- [SOW-492] *The Contractor SHALL also be responsible for organising and operating any handling equipment and storage facilities required.*
- [SOW-493] *The Contractor SHALL arrange all that is necessary to access the sites where equipment is handled or stored.*
- [SOW-494] *In the case of dangerous goods and goods requiring export licenses, the Contractor SHALL ensure that all required forms and certificates are provided and that all Host Nation regulations for such goods are followed. The Contractor SHALL provide a list of such equipment.*

6.8.3. Transportation

- [SOW-495] *The Contractor SHALL be responsible for transportation and delivery of all equipment furnished under this Contract from its site in a NATO nation to its respective implementation destination as outlined in Annex B1.*
- [SOW-496] *Ten (10) working days before each shipment of supplies, the Contractor SHALL provide the Purchaser with a Notice of Shipment comprising the following details:*
- *Shipment Date;*
 - *Purchaser Contract Number;*
 - *CLIN;*
 - *Consignor's and Consignee's name and address;*
 - *Number of Packages/Containers;*
 - *Gross weight;*
 - *Final/Partial Shipment;*
 - *Mode of Shipment (e.g., road...);*
 - *Number of 302 Forms used.*
- [SOW-497] *The Contractor SHALL be responsible for any insurance covering these shipments.*
- [SOW-498] *The Contractor SHALL also be responsible for transportation of repaired/ replacement items under warranty to the original location. Return of unserviceable equipment to Contractor facility for (warranty) repair/replacement is the responsibility of the Purchaser. However, if there are any special packaging requirements and materials required for the shipment, the Contractor SHALL be responsible providing the guidance and the special packaging material. Additionally, any export/import regulations and requirements SHALL be specified and directed by the Contractor.*
- [SOW-499] *At the Purchaser designated staging area, the Contractor SHALL unload the equipment and move the equipment to its final destination for installation. The Contractor may use any support equipment provided by the Purchaser, but remains responsible for requesting, organizing and using any support equipment required to offload and move equipment to its final destination. If such support equipment is not available on-site, then the Contractor SHALL be the ultimate responsible to arrange such equipment with the shipment.*

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6.8.3.1. All packages, boxes will be inspected visually by the Purchaser's POC at final destination to ensure that no damage has occurred during transport and that all packages, boxes and containers detailed in the packing list have been accounted for. The Purchaser will in no case open any package.

6.8.4. Customs

- [SOW-500] *The Contractor SHALL be responsible for customs clearance of all shipments into the destination countries. It is the Contractor's responsibility to take into account delays at customs. He SHALL therefore consider eventual delays and arrange for shipment in time. Under no circumstances can the Purchaser be held responsible for delays incurred, even when utilising Purchaser provided Customs Form 302.*
- [SOW-501] *Prior to a shipment by the Contractor, the Purchaser will upon request issue a Customs form 302, which in some cases may facilitate the duty free import/export of goods. The Contractor SHALL be responsible for requesting the issue of a form 302 at least 10 (ten) working days prior to shipment. The request for a Form 302 SHALL be included with the Notice of Shipment and accompanied by one (1) additional packing list. The request is normally processed by the Purchaser within three (3) working days. The requested 302 forms will be sent by courier. The original 302 forms SHALL accompany the shipment and therefore no fax or electronic copy will be used, nor provided to the Contractor.*
- [SOW-502] *If a country refuses to accept the Form 302 and requires the payment of customs duties, the Contractor SHALL pay these customs duties and the Purchaser SHALL reimburse the Contractor at actual cost against presentation of pertinent supporting documents. Should such an event occur, the Contractor SHALL immediately inform the Purchaser by the fastest means available and before paying, obtain from the Customs Officer a written statement establishing that his Country refuses to accept the Form 302.*
- [SOW-503] *The Contractor SHALL be responsible for managing and performing all activities that is necessary to obtain export licenses for the goods requiring such licenses.*
- [SOW-504] *The Contractor SHALL provide a detailed list of the equipment requiring export licenses. The Contractor SHALL provide the necessary procedures that needs to be applied for items to be relocated for repair or any other purposes.*

6.9. Initial Operational Support

- [SOW-505] *The Contractor SHALL perform all the maintenance and support activities (Level 2, 3, and Level 4) starting with activation of the Reference Environment until the successful completion of PSA (EDC+20mo) milestone.*
- [SOW-506] *The following criteria SHALL be met to achieve FSA:*
- *In case of a critical failure in Reference Environment effecting the continuity of the operation, the Contractor SHALL restore the system maximum within NBD. In case of a non-critical failure not effecting the operation, the Contractor SHALL fix the failure within 3 business days.*
- [SOW-507] *The Contractor SHALL apply the formal Change Management process for the fixes requiring the change of the approved baseline.*
- [SOW-508] *Starting from PSA (EDC+20mo) and until FSA (EDC+27mo) when all the site acceptance activities are completed; the Contractor SHALL be responsible for*

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the Level 2, Level 3 and Level 4 maintenance and support activities in each activated site within the scope of the Initial Operational Support.

- [SOW-509] *In case of a critical failure in the systems effecting the continuity of the operation, the Contractor SHALL restore the system maximum within 3 business days. In case of a non-critical failure not effecting the operation, the Contractor SHALL fix the failure within 10 business days.*
- [SOW-510] *The Contractor SHALL provide support that includes, but is not limited to, Level 2 maintenance that will focus on using Built-In Test Equipment (BITE), standard tools and test equipment, on-equipment, day-to-day corrective and preventive maintenance. This SHALL include replacement of LRU's, manual reconfiguration and adjustments, detailed baseline inspections and checkouts, fault identification and isolation, problem management, limited calibrations, and minor equipment repairs.*
- [SOW-511] *The Contractor SHALL provide support that includes, but is not limited to, the Level 3 maintenance and support will constitute the engineering level. It SHALL include in-depth testing, problem and modification analysis, release management, complex repairs and replacements, node and mission configuration(if applicable), calibration, scheduled servicing, overhaul and rebuild, implementation of major and/or critical changes, baseline restoration, post-maintenance review, supply support and PHS&T.*
- [SOW-512] *The Contractor SHALL provide support that includes the Level 4 maintenance that involves standard warranty type services for repair or replacement of the items.*
- [SOW-513] *If activated by the Purchaser, the Contractor SHALL extend the operational support period as options outlined in SSS.*

6.10. Warranty

- [SOW-514] *The Contractor SHALL warrant that all equipment and software furnished under this Contract and all installation work performed under this Contract conform to the requirements and is free of any defect in material, code or workmanship for a period starting at date of FSA to date of FSA plus one (1) year.*
- [SOW-515] *The Contractor SHALL support the system as part of the project implementation scope from the first site activation until FSA (EDC+27mo) milestone is successfully completed. During this period, the Contractor SHALL provide on-site and off-site maintenance and support services as required.*
- [SOW-516] *The Contractor SHALL fix/repair/replace all items received as per his internal procedures with the highest priority allocated. The Contractor SHALL provide the repaired/replacement item within maximum 20 business days after the Purchaser has provided the failure notification in written.*
- [SOW-517] *The Contractor SHALL acknowledge and propose a corrective action for the failed components within two business days after the initiation of the warranty request. In the case of a failure could not be identified to an LRU level and/or could not be isolated within 3 business day (starting with the warranty request) even with on-call assistance from the Contractor, the Contractor SHALL dispatch a field engineer to provide a solution on-site.*
- [SOW-518] *The Contractor SHALL provide a specific Customer POC for all warranty and support requests. The Contractor SHALL detail all the warranty and support requirements in its ISSP including the roles and responsibilities.*

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- [SOW-519] *The Contractor SHALL be responsible for the provision of any alternative or superseding items, should the original part be no longer available, ensuring compliance with the original design and System provided by this Contract. However, in such cases the Contractor SHALL propose the original alternative item for the Purchaser approval. The alternative item SHALL conform with all the specified quality requirements within the scope of the contract and standards.*
- [SOW-520] *The Contractor SHALL provide a Technical Assistance to the Purchaser or his representatives during the warranty period. Technical assistance information details SHALL be indicated in the ISSP.*
- [SOW-521] *The Technical Assistance SHALL provide on-call and/or on-site support in English for requests that correspond to information demands limited to the perimeter of delivered products, evolution proposals, problem reports, or any information needed by the Purchaser or its representatives, which are not included in the supplied technical documentation.*
- [SOW-522] *If the Contractor becomes aware at any time before acceptance by the Purchaser that a defect exists in any supplies, the Contractor SHALL coordinate with the Purchaser and promptly correct the defect.*
- [SOW-523] *Defect magnetic, solid state and electronic media storage devices (e.g., CD-ROM's, DVD's, Universal Serial Bus (USB) sticks, solid state storage drives, hard drives) SHALL remain NATO property, at no additional cost, and not be returned to the Contractor when being replaced.*
- [SOW-524] *The Contractor SHALL replace any such defect storage devices with new storage devices at no additional cost to the Purchaser.*
- [SOW-525] *The Contractor SHALL be responsible for the provision of any alternative or superseding items, should the original part be no longer available, ensuring compliance with the original design provided by this Contract.*
- [SOW-526] *During the warranty period, the Contractor SHALL be responsible for supplying all COTS hardware and software upgrades and updates.*
- [SOW-527] *The Contractor SHALL make the availability of COTS hardware and software upgrades and updates known to the Purchaser and, if proposed for introduction by the Contractor for whatever reason, including any corrective action for an identified fault, SHALL always be subject to Purchaser approval.*

6.10.1. The Contractor will not be responsible for the correction of defects in Purchaser furnished property, except for defects in installation, unless the Contractor performs, or is obligated to perform, any modifications or other work on such property.

6.10.2. As an option the Purchaser can request additional warranty under the same conditions on a yearly basis.

6.11. Disposal of Equipment

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6.11.1. It is the aim of this project to remove all legacy gateways. The deactivation and removal of legacy equipment, both in case of installation of new gateways to replace a prototype gateway or in the scope of WP4 of this SOW (for locations that are not receiving a new gateway) will be the responsibility of the Contractor.

6.11.2. The disposal of the aforementioned legacy equipment will be the responsibility of NATO, in compliance with applicable policy.

6.11.3. Removal activities will begin only after the Purchaser has authorized them, as some legacy IEG-C services may still be required to run concurrently with the new services.

[SOW-528] *The Contractor SHALL request formal authorization from the Purchaser to proceed with deactivation and removal of legacy equipment.*

[SOW-529] *The Contractor SHALL be responsible for the removal of the items from the installation facilities as required, and SHALL hand-over such devices to the Purchaser in local Purchaser warehouse.*

[SOW-530] *The Contractor SHALL work with local site personnel to ensure the controlled removal and disposal, unless otherwise specified by the Purchaser.*

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