SECTION 7: SYSTEM IMPLEMENTATION

7.1. General

7.1.1. Throughout the whole system implementation activities the Purchaser will retain all administrator privileges on existing systems (e.g., Enterprise Administrator, Domain Administrator) which will therefore not be granted to the Contractor.

7.1.2. The Purchaser reserves the right to suspend the Contractor's installation and/or or activation work for up to ten (10) working days to avoid interfering with or disrupting a critical operational event.

[SOW-531] *The Contractor SHALL ensure the overall implementation at the sites respects the achievement of milestones as described in SECTION 3.*

[SOW-532] *The Contractor SHALL execute implementation activities in several steps:*

- *The Contractor SHALL conduct complementary site surveys in addition to the ones conducted under pilot release – see 13.2*
- *The Contractor SHALL update and deliver the SIP – see 13.3*
- *The Contractor SHALL conduct site preparation activities – see 13.4*
- *The Contractor SHALL conduct site installation and activation activities – see 13.5.*

7.2. Site surveys

[SOW-533] *The Contractor SHALL conduct site surveys at all the sites related to the Site Activation and FSA milestones, and which are part of the contract (i.e., data centre sites, and additional options which have been activated under the contract; see SECTION 3).*

[SOW-534] *The Contractor SHALL follow the site survey process as described in SECTION 9: Site Surveys*

[SOW-535] *The Contractor SHALL adjust the activities and deliverables to the results of the site surveys.*

7.3. System Implementation Plan (SIP)

[SOW-536] *The Contractor SHALL propose, for Purchaser approval, the implementation sequence of sites implemented at PSA in the System Implementation Plan (SIP) (see ANNEX B).*

[SOW-537] *The Contractor SHALL produce and deliver a SIP that at least meet all contents requirements as laid out in section 15.11.*

7.3.1. The acceptance of the SIP 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-538] *The Contractor SHALL coordinate the installation and activation dates reflected in the SIP with the Purchaser and the Site POCs to accommodate site-specific requirements, exercises, holiday periods, and other considerations. Any such dates and any revision of these dates SHALL be coordinated with the Purchaser and the relevant sites at least four weeks before the start of the relevant activities.*

7.4. Preparations for Installation

[SOW-539] *The Contractor SHALL provide each site POC, with a copy to the Purchaser Project Manager, with a draft list of hardware and software to be shipped, and a list of Contractor's personnel together with a copy of each person's Personnel Security Clearance (PSC) for those who will be involved in site installation and activation work.*

[SOW-540] *The Contractor SHALL monitor the progress of any required Site facilities preparations, and the progress of any required provision of input by the Purchaser and the Site, to ensure timeliness and quality of the preparatory work required from the Purchaser.*

[SOW-541] *The Contractor SHALL ensure that anything that may delay installation is brought to the attention of the Purchaser Project Manager promptly.*

[SOW-542] *The Contractor SHALL prepare and conduct a Site Verification Survey no later than two months prior to installation activities at the site. The purpose of this Site Verification Survey is to verify that the information provided by the site is still valid, and to perform any necessary updates to the system implementation documentation. The Contractor may recommend to the Purchaser that certain Site Verification Survey(s) are not warranted, which the Purchaser may accept or reject.*

[SOW-543] *The Contractor SHALL issue the updated SIP immediately after the Site Verification Survey and no later than two weeks before the Site installation.*

7.5. Site Installation and Activation

[SOW-544] *The Contractor SHALL produce a Site Activation/ Acceptance Plan in coordination with the Purchaser.*

[SOW-545] *The Contractor SHALL perform site installation and activation at any site, which comprises the following activities:*

- *Perform site installation of any IEG-C elements (Hardware, Software), including establishment of network connectivity between all required components.*
- *Perform site activation.*
- *Execute all activities related to security accreditation.*
- *Execute Physical Configuration Audit (PCA).*
- *Deliver all documentation associated to site installation and activation.*

7.5.1. Site Installation

[SOW-546] *The Contractor SHALL coordinate the start date of the planned installation no later than three weeks before that start date.*

[SOW-547] *Throughout all Site installation activities the Contractor SHALL hold a daily meeting with the site POC to agree on the work to be conducted during the day.*

[SOW-548] *Although the Purchaser will provide the facilities in which the IEG-C will be installed and the external systems to which it will be interfaced, the Contractor SHALL be responsible for timely and complete delivery and installation of all relevant supplies.*

[SOW-549] *The Contractor SHALL ensure that the equipment to be installed in any of the relevant site facilities (as identified by the site during the site survey) has been*

tested and certified to operate at the "facility's zone level". The Contractor SHALL provide relevant evidence to the site before installing any IEG-C piece of equipment.

[SOW-550] *The Contractor SHALL unpack all IEG-C equipment at the installation location and dispose of packing materials as directed by the Purchaser's Site POC.*

[SOW-551] *The Contractor SHALL install all equipment in accordance with the applicable document indicated in [NCIA AI TECH 06.03.01, 2015].*

[SOW-552] *The Contractor SHALL connect all equipment to electrical power and communications interfaces provided by the Purchaser.*

[SOW-553] *The Contractor SHALL turn on all equipment and configure hardware and software settings to match the PBL and site infrastructure configuration.*

7.5.2. Site activation

7.5.2.1. The purpose of site activation is to ensure that all IEG-C components installed at that site are ready for operational use and meet SRS requirements, for both Technical Services and User Services.

[SOW-554] *The Contractor SHALL perform site activation activities locally at the site.*

[SOW-555] *The Contractor SHALL ensure that none of the site activation activities have any impact on the NATO Staff Users' desktop applications, except for some authorised potential and limited outages.*

7.5.2.2. Site Activation Tests

[SOW-556] *The Contractor SHALL conduct the site activation tests.*

7.5.2.2.1. The Purchaser reserves the right to observe the site activation tests and to have the Contractor perform additional tests in order to demonstrate that the system is meeting the contractual requirements.

7.5.2.2.2. The completion of Site Activation testing will be subject to the Purchaser's confirmation that all Site Activation tests at a site have been completed successfully.

[SOW-557] *For that purpose, The Contractor SHALL provide a Site Activation Test Report for each site.*

7.5.2.2.3. Site Activation tests on operational sites

[SOW-558] *The Contractor SHALL execute Site Activation tests on the operational sites that demonstrate that the equipment installed so far (i.e., both on the individual site and system-wide if other sites have already been installed) provides the Contractual functionality and performance level, including all interfaces with all internal and external system, including administration requirements, and is ready for operational use.*

[SOW-559] *The Contractor SHALL carry out the site activation tests for a maximum of one week at each site, exclusive of any preparation time.*

7.5.3. Local Security Accreditation activities

7.5.3.1. As part of the local security accreditation, some security documents need to be modified to align with the local security requirements and environment. Additionally, any security tests are to be performed on the local IEG-C component.

7.5.3.2. Security Operating Procedures (SecOPs)

[SOW-560] *For each of the sites where a component of the IEG-C system is to be installed and local management to be activated, the Contractor SHALL modify the approved generic SecOPs (see 16.1.3.8) to meet the requirements of the local site.*

[SOW-561] *The Contractor SHALL deliver and present the localised version of the IEG-C SecOPs to the local SAA for approval.*

[SOW-562] *The Contractor SHALL take into account any comments from the reviewers and Local SAA and SHALL update the document as many times as necessary in order to gain Local SAA approval of the IEG-C localised SecOPs for the site.*

7.5.3.3. Site Security Compliance Statement (SSCS)

[SOW-563] *For each site where a component of the IEG-C system is to be installed, the Contractor SHALL provide inputs to the local SSCS to meet the requirements of the local site.*

[SOW-564] *The Contractor SHALL deliver and present the proposed modifications of the SSCS to the local SAA for approval.*

[SOW-565] *The Contractor SHALL take into account any comments from the reviewers and Local SAA and SHALL update the proposal as many times as necessary in order to gain Local SAA approval of the IEG-C localised SSCS for the site.*

[SOW-566] *The Contractor SHALL support the local security staff in the completion of the SSCS.*

7.5.3.4. Security Test and verification Plan (STVP)

[SOW-567] *For each of the sites where a component of the IEG-C system is to be installed, the Contractor SHALL modify the approved generic STVP to meet the requirements of the local site.*

[SOW-568] *The Contractor SHALL deliver and present the localised version of the STVP to the local SAA for approval.*

[SOW-569] *The Contractor SHALL take into account any comments from the reviewers and Local SAA and SHALL update the document as many times as necessary in order to gain Local SAA approval of the IEG-C localised STVP for the site.*

[SOW-570] *The Contractor SHALL support the NCI Agency in the execution of the STVP.*

7.5.4. Physical Configuration Audit (PCA)

[SOW-571] *The Contractor SHALL schedule and perform the PCA with the Purchaser ILS POC.*

[SOW-572] *The Contractor SHALL co-ordinate the PCA with the Purchaser's ILS POC.*

[SOW-573] *The Contractor SHALL produce and deliver a PCA Report.*

[SOW-574] *The Contractor SHALL perform the corrective actions as outlined in the PCA Report.*

7.5.5. Documentation

[SOW-575] *The Contractor SHALL deliver to the sites all documentation that is required for system implementation and operation.*

[SOW-576] *The Contractor SHALL update the documentation delivered at the sites to accommodate any site-specific changes and/or configurations.*

[SOW-577] *Upon completion of site implementation work, the Contractor SHALL provide the Purchaser with a copy of the site installation and activation checklist and resolve any discrepancies identified.*

[SOW-578] *The Contractor SHALL keep the Documentation under configuration control, as per section 18.11.*

7.6. Service Implementation Period

7.6.1. The Implementation period is defined as the time duration from CAW until Contract FSA. The Contractor will implement and deliver the following predefined Support Functions during these Milestones.

Support Function	Start	End	Responsibility
IT-Operation	PSA	FSA	Initial IT-Operation will be provided by the Implementation Contractor, incl. transfer to the NCI Agency.
Customer Support	PSA	FSA	All Levels of Customer Support will be provided by the Implementation Contractor, incl. transfer to the NCI Agency.
Maintenance	PSA	FSA	All Levels of Maintenance will be provided by the Implementation Contractor, incl. Transfer of 1st, 2nd, and 3rd Level Maintenance to the NCI Agency.
SMC	PSA	FSA	Initial IT-Service Management will be provided by the Implementation Contractor incl. transfer to the NCI Agency.
Configuration Management	CAW	FSA	All Support Functions will be provided by the Implementation Contractor incl. transfer to NCI Agency.
Quality Assurance			
Logistics Support			
Training.			

Table 13: Support during Milestones

SECTION 8: TEST, VERIFICATION, VALIDATION (TVV)

8.1. Introduction

8.1.1. This section details the Test, Verification, Validation (TVV) processes and requirements to be applied and performed under this Contract, which are required for the verification and validation of the requirements set forth under this Contract by the Purchaser.

8.1.2. All deliverables supplied by the Contractor under this contract shall be verified and validated to ensure they meet the requirements of this contract. Both fitness-for-use and fitness-for-purpose will be assessed using a quality based approach.

8.1.3. The verification and validation approach will not only involve delivered equipment, but also interfaces and interoperability with existing NATO and/or national equipment, here considered as Purchaser Furnished Equipment (PFE).

8.1.4. The verification and validation of PFE is out of the scope of this document and the contract.

8.1.5. The IEG-C requires a set of TVV activities to verify its compliance with the Contractual requirements set forth in the SOW and in the SRS (Annex to the SOW).

8.2. TVV activities

[SOW-579] *The Contractor SHALL classify and handle all information items used during the verification and validation activities according to their security classification. Guidance is provided in this SOW, under the security section.*

[SOW-580] *The Contractor SHALL have the overall responsibility for meeting the TVV requirements and conducting all related activities. This includes the development of all TVV documentation required under this Contract, the conduct of all independent verification, validation and assurance events, and the evaluation and documentation of the results.*

[SOW-581] *All deliverables supplied by the Contractor under this contract SHALL be verified and validated to meet the requirements of this contract. All document-based deliverables SHALL be produced in a manner compliant with the templates provided by the Purchaser. In particular:*

- *The Contractor SHALL perform the verification activities within each Build Process;*
- *The Contractor SHALL perform verification to confirm that each element properly reflects the specified requirements, design, code, integration and documentation;*
- *The Contractor SHALL support Purchaser led Validation Activities to confirm that the solution is fit for purpose.*

[SOW-582] *The Contractor SHALL be responsible for the planning, execution and follow-up of all TVV events. The Purchaser will assist in preparations by reviewing and providing feedback on all Contractor produced configuration items. The Purchaser will also provide testing and engineering Subject Matter Expertise (SME) during all TVV events to witness and assist with these events.*

[SOW-583] *The Contractor SHALL demonstrate to the Purchaser that there is a testing process in place for the project, supported by Contractor Quality Assurance (QA).*

[SOW-584] *Where requested by the Purchaser, the Contractor SHALL provide test data to support all TVV activities.*

[SOW-585] *The Contractor SHALL strictly follow the TVV processes (described in the latest version of the TV&V Process Definition and Execution Document (PDED) provided by the purchaser). When Contractor would like to propose a modification, it SHALL be approved by the Purchaser.*

[SOW-586] *The Contractor SHALL ensure that rigorous testing, including regression testing when required, is performed at every stage of the Project lifecycle in order to identify and correct defects as early as possible and minimise impact on cost and schedule.*

[SOW-587] *All test, verification and validation material developed and used under this contract SHALL be delivered to the Purchaser.*

[SOW-588] *The Contractor SHALL provide an overall project Test Director for the phases defined in Table 14: List of TVV Phases, who will work closely with the Purchaser's assigned TVV Manager and NATO Quality Assurance Representative (NQAR). Table 14: defines the test phases considered. If deemed necessary, IEG-C project may split the test phases defined in Table 14: into multiple events.*

8.2.1. The Purchaser will provide subject matter experts (SME) during each test event, as well as TVV Test Engineers and an NQAR.

[SOW-589] *The Contractor SHALL use Key Performance Indicators (KPIs) to identify opportunities for quality improvement, provide solutions and update the plans, the achievement of defined objectives like coverage of risks, requirements, supported configurations, supported operational scenarios, etc.*

[SOW-590] *The Contractor SHALL have the overall responsibility for meeting the TVV requirements and conducting all related activities defined in Table. Each phase may have one or more events to complete the full scope.*

TVV Phases	Scope	Purchaser Involvement
Engineering Phase	Internal contractor activities executed during development phase of the system to ensure the system/software conforms to their design specifications.	**Review**: Test Reports for Unit, Integration and System tests
Qualification Phase	Activities executed to verify the design and manufacturing process, ensure the system meets necessary design requirements, and provide a baseline for subsequent acceptance tests. *Possible activities:* *TEMPEST Testing* *Electro-Magnetic Compatibility (EMC) Testing* *General Environmental Testing* *Water/Dust Ingress Testing*	**Review**: Event Test Plan, Test Cases/Scripts, Test Report, Test Data, Test Environment Baseline, Existing defects. **Participate**: Test Readiness Review (TRR), Test Execution, Event Review Meeting (ERM)

TVV Phases	Scope	Purchaser Involvement
	Operational Robustness Testing *Mechanical Environmental Testing* *Environmental Control Testing* *Biological & Chemical Testing* *Transportation Testing* *Physical Functional System Testing* *Product Safety Testing* *User Interface Testing* *Component Testing* *Interface Testing* *Security Testing* *Integration Testing (internal to the project deliverables)*	
Factory Acceptance Phase	To verify that production units comply with the requirement/design specifications and production can start. Confirm that all required engineering-level testing activities have been completed in accordance with the SOW. Determine if project deliverables are ready for independent verification, validation and acceptance	**Review**: Event Test Plan, Test Cases/Scripts, Test Report, Test Data, Test Environment Baseline, Existing defects, Dry Run results. **Participate**: Dry Run (Optional Purchaser participation), TRR, Test Execution, Event Review Meeting (ERM)
TVV Assessment Phase	Independent assessment performed with Purchaser and led by Contractor to determine whether or not a system satisfies user needs, functionality, requirements, and user workflow processes etc. before it gets into operation. To ensure verification of quality criteria defined in Figure 5: Product Quality Criteria for the following tests: - **System Integration Test (SIT**) – Requirements based testing, focused on verifying integration of the different components together and with any external interface as defined by the SOW - **User Acceptance Test (UAT)** – Scenario based testing, focused on validating the system as per user needs. - **Security Tests** – Tests focused on ensuring the security criteria are met. - **System Acceptance Test (SAT)** – Tests focused on ensuring compliance with the requirements outlined in the SOW.	**Review**: Event Test Plan, Security Test and Verification Plan (STVP), Test Cases/Scripts, Test Report, Test Data, Test Environment Baseline, Existing defects **Participate**: TRR, Test Execution, Event Review Meeting (ERM), User Reviews (including internal users)

TVV Phases	Scope	Purchaser Involvement
	- **RFC Evaluation** – Review by Agency Change Managers and execution of any additional evaluation as requested by Change Managers. Under normal circumstances, all required inputs are generated from TVV activities	
Site Acceptance Phase (SiAT)	To ensure that the specific site/node is installed properly per site/node installation plan and the service meets the requirements stated in the SRS. Site Acceptance Testing is also to ensure compatibility and integration of the product with the site environment. Migration related tests are also covered under this tests. This includes integration with PFE.	**Review**: Event Test Plan, Test Cases/Scripts, Test Report, Test Data, Test Environment Baseline, Existing defects **Participate**: TRR, Test Execution, Event Review Meeting (ERM)
Operational Test and Evaluation	To ensure that all the Operational Acceptance Criteria (OAC) such as performance and availability have been successfully implemented. Sites are successfully integrated and tested on the network level. Demonstrate that all components of the System/Application have been integrated (including other systems) to meet all OACs as well as all security requirements defined in the Security Accreditation Documentation Package. Ensure end to end delivered system works as expected and can interoperate with other Purchaser equipment	**Review**: Event Test Plan, Test Cases/Scripts, Test Report, Test Data, Test Environment Baseline, Existing defects **Participate**: TRR, Test Execution, Event Review Meeting (ERM)

Table 14: List of TVV Phases

8.2.2. The Purchaser reserves the right to monitor and inspect the Contractor's TVV activities to verify their compliance with the requirements set forth in this Contract.

[SOW-591] *The Contractor SHALL only proceed to the next formal TVV activity, after the successful completion of the previous TVV activity and after the agreement/approval by the Purchaser.*

8.3. Deliverables

[SOW-592] *The Contractor SHALL provide a System Test Documentation Package, following documentation templates provided by the Purchaser, that is comprised of the following documents in Table 15: Test Documentation:*

Work Product Name	First Draft	Sent to Review/Approve
The Master Test Plan (MTP)	*During Bid*	*4 weeks after contract award*

Work Product Name	First Draft	Sent to Review/Approve
Defect Reporting and Management Plan	*During Bid*	*4 weeks after contract award*
Event Test Plans for individual test events (ETP)	*During Bid (example)*	*4 weeks before TVV event*
The Security Test & Verification Plans (STVP)		*as required per the NSAB*
Security Implementation Verification Procedures (SIVP)		*4 weeks before TVV event*
Any submitted test Waivers together with supporting material		*4 weeks before TVV event*
The Test Cases/Scripts/Steps	*During Bid (example)*	*4 weeks before TVV event. First draft 4 weeks after contract award*
Status Reports		*Periodically (to be defined in the MTP)*
Test Completion Report		*1 week after TVV event*
System under-test Documentation		*2 weeks before TVV event*
The Requirements Traceability Matrix (RTM) updated with test-related information	*During Bid*	*First with MTP and update per test event*

Table 15: Test Documentation

[SOW-593] *If applicable, the Contractor SHALL develop and validate any Test Harnesses, simulators and stubs, including all script/code/data/tools required to execute the planned functional and non-functional tests in the Test Environment. The Test Harnesses for PFE will be provided by the Purchaser.*

[SOW-594] *The Contractor SHALL note that modification of inaccurate or inadequate TVV deliverables and any subsequent work arising as a result SHALL be carried out at the Contractor's expense.*

[SOW-595] *The Contractor SHALL deliver to the Purchaser all TVV materials developed and used under this contract.*

[SOW-596] *The Contractor SHALL utilise templates provided by the Purchaser as structure guides and for the content the Purchaser expects to be detailed. If the Contractor would like to propose a modification of the templates, the Contractor SHALL first obtain approval by the Purchaser.*

[SOW-597] *The contractor SHALL complete as many deliverable review cycles s required, until all deficiencies have been corrected.*

8.3.1. Master Test Plan (MTP)

[SOW-598] *The Contractor SHALL identify and describe in the Master Test Plan (MTP) which best practices and international standards will be applied and how.*

[SOW-599] *The Contractor SHALL produce a Master Test Plan (MTP) to address the plans for each TVV activities listed in this document. The Purchaser will monitor and inspect the Contractor's MTP activities to ensure compliance.*

[SOW-600] *The Contractor SHALL keep the MTP always up to date.*

[SOW-601] *The Contractor SHALL describe how the Quality Based Testing is addressed and implemented in the MTP. Figure 5: Product Quality Criteria is based on ISO 25010 and should be used as product quality criteria model.*

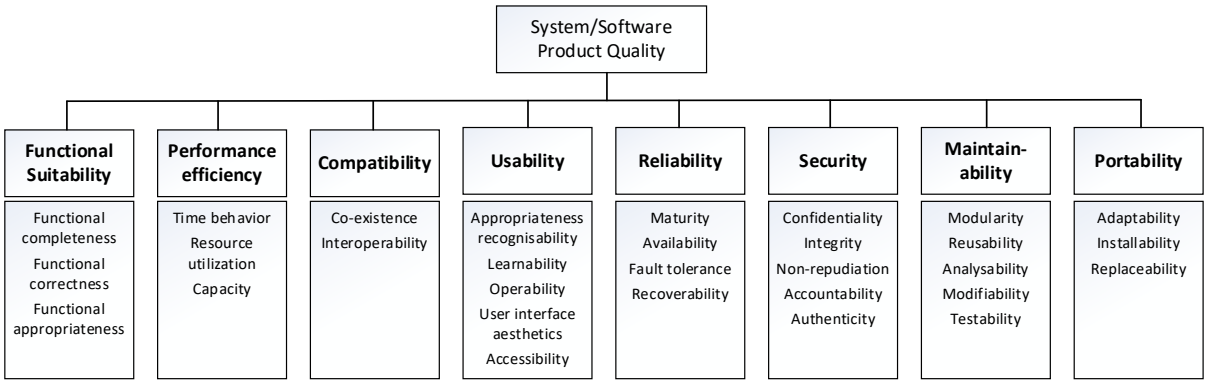


Figure 5: Product Quality Criteria

[SOW-602] *The Contractor SHALL describe all formal TVV activities in the MTP with a testing methodology and strategy that fit the development methodology chosen by the project.*

[SOW-603] *The Contractor SHALL propose a testing methodology that describes the method of achieving all the test phases, defined in Table 14, successfully.*

[SOW-604] *The Contractor SHALL describe in the MTP how the following objectives will be met:*

- *Compliance with the requirements of the Contract*
- *Verification that the design produces the capability required*
- *Compatibility among internal system components*
- *Compliance with the SRS requirements*
- *Compliance with external system interfaces and/or systems*
- *Confidence that system defects are detected early and tracked through to correction, including re-test and regression approach*
- *Compliance with Purchaser policy and guidance (i.e. security regulations, etc.)*
- *Operational readiness and suitability*
- *Product Quality Criteria (Figure 5: Product Quality Criteria)*

[SOW-605] *The Contractor SHALL describe the Contractor's test organization and its relationship with the Contractor's Project Management Office and Quality Assurance (QA) functions in the MTP.*

[SOW-606] *The Contractor SHALL describe in the MTP "Entry and "Exit" criteria for each of the formal TVV events. The Contractor SHALL seek approval of all criteria related to an event not later than the TRR of the event.*

[SOW-607] *The Contractor SHALL provide in the MTP the schedule, location and scope for all the events to be run, specifying to which phase they belong. When the contractor identifies that multiple events are required for a phase, this SHALL also be specified in the MTP.*

[SOW-608] *Together with the MTP, the Contractor SHALL provide a defect reporting and management process to be applied during the TVV activities in Table 14.*

[SOW-609] *The Contractor SHALL describe how defects/non-conformances encountered during TVV events will be reported, managed and remedied.*

[SOW-610] *The MTP SHALL include the Contractor's approach to Test Reviews including Test Readiness Reviews (TRR) and Event Review Meetings (ERM) for each TVV event.*

[SOW-611] *The Contractor SHALL provide Contractor's provisions and strategy for building/maintaining of the Reference Environment in the MTP.*

8.3.2. Test Cases and Test Procedures

[SOW-612] *The Contractor SHALL develop test and use cases to verify and validate all requirements in the SOW, requirements specifications (SRS) and final design. The test cases SHALL follow the template provided by the Purchaser.*

[SOW-613] *The Contractor developed Test Case/Procedures SHALL clearly describe all the test steps that meet or demonstrate Purchaser's requirements with an expected Test Result and pass/fail result.*

[SOW-614] *The Contractor SHALL develop test cases and steps for each of the contractual test activities following each type of quality criteria. The Contractor SHALL ensure full test coverage based on a risk analysis and submit them for the Purchaser's review and approval.*

[SOW-615] *The Contractor SHALL use test tools for development of Test Cases and procedures. Whatever Test tool is used by the Contractor, the output format SHALL fully be compatible, transferrable and usable with the Purchaser's tools.*

[SOW-616] *The Purchaser will review and provide comments to the Contractor delivered Test Cases, Test Procedures and Test Steps within 4 weeks of receipt. The Contractor SHALL allow a4 week review cycle by the Purchaser for subsequent versions.*

[SOW-617] *All the Contractor developed Test Cases, Test Procedures and Test Steps SHALL be approved by the Purchaser prior to their execution.*

[SOW-618] *If the Contractor produced Test Cases, Test Procedures and Test Steps are not approved by the Purchaser, the execution of relevant testing SHALL be adjusted or delayed accordingly until approved by the Purchaser.*

[SOW-619] *The Contractor must deliver to the purchaser the final version of the test cases and Event Test Plan available one (1) week prior to the TRR for a specific TVV event*

[SOW-620] *The Contractor SHALL incorporate into the relevant test cases any updates required from the execution of test cases during each phase for use during independent verification, validation and acceptance. If only certain sections are affected, then it SHALL be sufficient to up-date and re-issue those section plus cover sheet with amendment instructions. Should major changes in contents or page re-numbering be needed, then the complete section SHALL be re-issued by the Contractor. All changes SHALL be made with the agreement and approval of the Purchaser*

8.3.3. Event Test Plan (ETP)

[SOW-621] *The Contractor SHALL create an Event Test Plan (ETP) per each event detailing all the information required for that event. The ETP SHALL follow the template provided by the Purchaser.*

[SOW-622] *The Contractor SHALL describe in the event test plan what training (if any) will be provided prior to formal TVV events.*

[SOW-623] *The Contractor SHALL identify, in the ETP, which environment(s) to be used at each TVV event and the responsibilities for configuration control, operation and maintenance of the environment*

[SOW-624] *The Contractor SHALL ensure the ETP describes when an agreement is reached between the Contractor and the Purchaser on the defect categorization and defect priority of failures encountered, as well as a way forward (if either at the end of each day of a TVV event or at the Event Review Meeting). If agreement is not reached, the Contractor SHALL escalate disputed items to the Purchaser's and Contractors' Project Managers*

8.3.4. Test Reports

[SOW-625] *The Contractor SHALL record the results for each test called for in the Test Plan in a Test Log (also known as Test Execution Log).*

[SOW-626] *The Contractor SHALL ensure the test report follows the template provided by the Purchaser, including a cover sheet that clearly shows how many tests passed, failed, or were not run.*

[SOW-627] *The Contractor SHALL ensure the test report indicates the result of the test cases execution.*

[SOW-628] *Where the Purchaser or his representative has witnessed the testing, appropriate annotations SHALL be made on each page of the test results to ensure that the test report is a true record of test activities and results as witnessed by the Purchaser, and the whole test report SHALL be signed by the Contractor representative and by the Purchaser representative on completion of that testing.*

8.3.5. Requirement Traceability Matrix RTM

[SOW-629] *The Contractor SHALL produce and maintain the Requirement Traceability Matrix (RTM), which includes all functional and non-functional requirements (respecting Purchaser's provided requirement IDs), to track the TVV status of all requirements throughout the Contract execution (especially during the TVV activities).The RTM SHALL also trace the requirements to the design. It SHALL also define how the requirements will be validated or verified at each of the TVV activities:*

- *The verification method: Inspection, Analysis, Test or Demonstration*
- *Correspondent TVV phase(s) for each requirement*
- *Correspondent Test procedure*
- *Coverage Status*
- *Product release*
- *Identify if covered by COTS, or custom development*
- *Identify any Off-specifications associated with the requirement.*
- *Identify test(s) or test waiver(s) on the basis of which the requirement was demonstrated.*
- *Identify associated problem report for failed requirements*

[SOW-630] *The Purchaser will review and approve the proposed RTM.*

[SOW-631] *The Contractor SHALL maintain the RTM updated during the project lifecycle.*

[SOW-632] *The Contractor SHALL provide the Purchaser with updates (via the tools) to the RTM daily during the execution of an event, and following the conclusion of each event defined in Table 14: List of TVV Phases. A workflow for updating the RTM SHALL be proposed by the Contractor and approved by the Purchaser.*

[SOW-633] *The Contractor SHALL include in the RTM (and be able to differentiate from SRS requirements) the requirements derived from the gap analysis of the Operational Acceptance Criteria.*

8.3.6. STVP

[SOW-634] *The Contractor SHALL produce an STVP, to ensure that the Security testing, including verification of compliance with NATO CIS security regulations (in Annex C of the SOW) is applied. This is an integral part of the Independent Verification and Validation process.*

[SOW-635] *The STVP SHALL support the accreditation of the System Platform. This document SHALL be approved by Security Accreditation Authority (SAA) – Section 10.2.*

8.4. **Tools**

[SOW-636] *The Contractor SHALL generate and deliver automated test procedures/cases compatible with Purchaser test management and automation tools.*

[SOW-637] *The Contractor SHALL make use of automated testing and supporting testing tools (test management, requirement coverage, defect management, etc.) to the maximum applicable extent, for all system development, implementation, internal and formal tests. The process and proposed supportive tools SHALL be described in the Master Test Plan (MTP). In areas where the Purchaser already uses specific tools, the Contractor SHALL make use of the tools in use by the Purchaser*

[SOW-638] *The Contractor SHALL use the tools supporting requirements coverage, defect management and test management selected and hosted by the purchaser. For any internal work, the Contractor may use their own internal tools, but the tools used for the contractor's internal work SHALL be able to natively interface with the tools selected and hosted by the Purchaser in order to keep all TVV related data for the project in the purchaser tools.*

8.5. **TVV Events and results**

[SOW-639] *The Contractor SHALL conduct testing during the Project lifecycle compliant with the following requirements:*

[SOW-640] *The Contractor is responsible for conducting all testing during the Project lifecycle. The contractor SHALL provide evidence to the Purchaser of the results of these testing activities. The Contractor SHALL respond to any Purchaser clarification requests regarding test results or performance within two working days.*

[SOW-641] *The Contractor SHALL conduct all testing activities for any architectural changes.*

[SOW-642] *The Contractor SHALL support post go-live activities during the Operational Acceptance phase, to evaluate the IEG-C capability performance and establish benchmarks for future enhancements, including any changes made to fulfil the requirements.*

[SOW-643] *The Contractor SHALL provide status reports to the Purchaser regarding verification and validation activities during the planning/design and development phases, via the use of a dashboard report within the test management tool set and through meetings. The Contractor SHALL provide report(s) to the Purchaser following the completion of any TVV event. The Purchaser will approve the report and its findings within five business days.*

[SOW-644] *The Contractor SHALL report progress and result measurement and these SHALL be approved by the Purchaser based on KPIs.*

[SOW-645] *The Contractor SHALL record test results in the test management tool set. All results of all formal acceptance testing performed during a given day must be recorded in the test management tool. The Contractor SHALL provide these test results for any given day by the start of the next business day (0800 AM), but as a minimum not later than 24 hours following the execution of any test.*

8.5.1. Test Readiness Review (TRR)

[SOW-646] *The Contractor SHALL conduct a Test Readiness Review (TRR) meeting at least one week prior to the events defined in Table 14: List of TVV Phases. The TRR SHALL ensure that all entry criteria for the events have been met. Documentation that requires review by the Purchaser prior to a TRR, as defined in the Event Test Plan (ETP), SHALL be provided no less than 2 weeks prior to TRR.*

[SOW-647] *The Purchaser has the right to cancel the TRR and/or any formal test event if the evidence demonstrates that execution of the test event will not be effective.*

[SOW-648] *The Contractor SHALL demonstrate that all the internal tests and dry runs are successful with test reports and results delivered to the Purchaser at least 2 weeks prior to start of any Contractual test activities.*

8.5.2. Event Review Meeting (ERM)

[SOW-649] *The start and/or ending of any test session SHALL be subject to the Purchaser approval. In the event that critical issues are encountered which impact the process of the testing or if the other functions depend on the failed test cases, the Purchaser has the right to stop the testing for Contractor's investigation. The tests can only re-start if Purchaser agrees to continue testing from the point of failure or re-start testing from the beginning.*

[SOW-650] *The Contractor SHALL convene an Event Review Meeting (ERM) as defined in the ETP and MTP. The ERM SHALL ensure that the event results, defect categorization and a way forward to fixing the defects (if required) is agreed upon the Contractor and the Purchaser as well as any other items identified in the exit criteria defined and agreed for the event. If agreement is not reached, the disputed items SHALL be escalated to the Purchaser's and Contractors' Project Managers. The exit criteria presented in the ERM may as well be utilized as success criteria.*

8.5.3. TVV Event

[SOW-651] *An event starts with the Test Readiness Review (TRR) and finishes off with the Event Review Meeting (ERM).*

[SOW-652] *During formal TVV phases, a daily progress debrief SHALL be scheduled. Participation to the daily progress debrief will be agreed between Purchaser and Contractor. The aim of the debrief is to get a common understanding on what tests were run, which passed, which failed, and whatever defects were reported during the day.*

[SOW-653] *For each TVV event, the Contractor SHALL provide log/record of the event, including but not limited to individual test results, defects found, requirement coverage, test execution durations, deviations during execution and sign-off for each result by both the Contractor and Purchaser.*

[SOW-654] *The Contractor shall correct and re-test all failures with severity "Critical" or "Major".*

[SOW-655] *The Contractor shall record the agreed action plan for failures with severity "Moderate", "Minor" and "Cosmetic".*

[SOW-656] *The Contractor shall fix and demonstrate that the recorded issues or faults are fixed and working correctly. The next contractual test activity shall not start until all the findings are fixed to the Purchaser's satisfaction.*

[SOW-657] *At the end of the project, the Contractor SHALL provide the final version of all artefacts (regardless of format) created during the execution of all TVV activities.*

8.5.4. Reference environments

[SOW-658] *The Contractor SHALL obtain the approval of the Purchaser regarding the environments the formal events will take place on and in requesting the approval, indicate what support is required from the Purchaser to configure and prepare the environment. This includes any data from the Purchaser required for the test event. The Reference Environment Configuration SHALL be formally controlled using configuration management tools, and each baseline that will enter into a contractual event SHALL be delivered to the Purchaser for approval prior to TRR.*

[SOW-659] *The Contractor SHALL ensure that all test/reference environments are under proper configuration management, especially configuration control. The Configuration Management toolset and process SHALL be approved by the Purchaser.*

8.5.5. Waivers

[SOW-660] *The Contractor may request a Test Waiver if the Contractor has previously successfully completed qualification testing to national, or international standards for assemblies, subassemblies components or parts. The Purchaser, after review of test waivers and analysis of their impact, reserves the right to require test and certification of the modified equipment at no cost to the Purchaser. The Purchaser has the right to reject any test Waiver.*

[SOW-661] *In respect to a requested waiver, the Contractor SHALL certify that the test environment to be implemented is identical to that which was originally used for testing, or advise the Purchaser of design/construction changes which affect form, fit or function.*

[SOW-662] *The Contractor SHALL record and log all waiver requests along with their resolution submitted for the Purchaser's approval.*

8.5.6. Failed events

[SOW-663] *In the event of failed TVV event and the need to return to a site for re-testing; travel and per diem expenses of NATO personnel SHALL be borne by the Contractor*

8.6. **Test Defect Categorization**

[SOW-664] *The Contractor SHALL use the Purchasers' categorization nomenclature for all defects and non-compliances*

[SOW-665] *Should a failure be identified during a TVV event/activity, a defect SHALL be recorded in the Agency's' test management and defect management systems. Once the event has concluded, the defect SHALL be reviewed during the event review meeting to agree on the severity, priority and category. The event test report SHALL then report the disposition of all defects recorded during the event and the defect management system SHALL be updated accordingly. Classification SHALL follow Table 16: Definitions for Defect Categorization, Table 17: Classification of defects based on severity, Table 18: Priority Classes for Defect Classification and Table 19: Deficiency Categories .*

Attributes	Definition
Severity	The severity of a defect is the degree of impact that the failure has on the development or operation of a component, a system or a user function. The severity SHALL initially be proposed by the tester but SHALL officially be set in agreement with all the stakeholders. When agreement cannot be reached, the Purchaser's PM will set the severity.
Priority	The priority of a defect defines the order in which defects SHALL be resolved. The priority of the defect SHALL initially be proposed by the tester but SHALL officially be set in agreement with all the stakeholders. When agreement cannot be reached, the Purchase's PM will set the priority.
Category	The type of observation identified during the execution of a test case.

Table 16: Definitions for Defect Categorization

8.6.1. Severity

[SOW-666] *According to their severity, defects SHALL be classified as one of the following in Table 17: Classification of defects based on severity:*

Severity	Definition
Critical	The failure of testing of a requirement. The failure results in the termination of the complete system or one or more component of the system. The failure causes extensive corruption of data. The failed function is unusable and there is no acceptable alternative method to achieve the required results
Major	A significant failure that causes severely impaired functions but does not prevent operational processing. Applies to conditions under which the complete system or one or more component of the system are partially inoperative, but are still usable by the users. A work around may be available, but it may require manual intervention. Examples:

Severity	Definition
	* Absence of expected modules/ object or Unit * failure of business operational process that affects a large group of users * complete failure of a module
Moderate	The failure does not result in the termination and all functions are available but causes the system to produce incorrect, incomplete or inconsistent results. When resources are available and budgeted, should be resolved.
Minor	The failure does not result in termination and does not damage the functioning of the system. The desired results can be easily obtained by working around the failure
Cosmetic	The failure is related to the look and feel of the application, typos in a document or user interfaces (amongst others), and not part of the immediate usability or contractual requirements. The failure does not adversely affect the overall system operation.

Table 17: Classification of defects based on severity

8.6.2. Priority

[SOW-667] *According to their priority, defects SHALL be classified as one of the following in Table 18: Priority Classes for Defect Classification:*

Priority Class	Description
Urgent	The defect SHALL be resolved as soon as possible. Required to complete independent verification and validation activities.
Medium	The defect SHALL be resolved in the normal course of development activities. It can wait until a new build or version is created.
Low	The defect is an irritant which should be repaired, but repair can be deferred until after more serious defects have been fixed.

Table 18: Priority Classes for Defect Classification

8.6.3. Category

[SOW-668] *According to their category, deficiencies SHALL be classified as one of the following in Table 19: Deficiency Categories:*

Category	Description
Defect	An imperfection or deficiency in a work product where it does not meet its requirements or specifications. This category of defect could drive to the creation a Class II (Product Correction) Engineering Change Proposal (ECP).
Enhancement	This type of defect is used to record an Improvement to the product baseline. This category of defect would typically drive to the creation of a Class I (Product enhancement) ECP.
Document	This category is used to record deficiencies encountered in the system documentation (test cases, test procedures, RTM, test plan, manuals, design, procedures…).
Clarification	This category is used to record deficiencies encountered during the test execution, which must be clarified.
Waiver	This category is used to record when a waiver is required to address a specific observation or deficiency.

Table 19: Deficiency Categories

SECTION 9: SITE SURVEYS

9.1. Introduction

9.1.1. The purpose of the Site Survey is to gather all information of interest in view of the preparation, installation, configuration, on-site testing and support. This section outlines the requirements applicable for site surveys.

[SOW-669] *The Contractor SHALL respect requirements below for every site survey.*

[SOW-670] *For each site survey, the Contractor SHALL conduct site survey preparatory work, visit each site subject to site survey, survey relevant facilities, interview site personnel, and collect data to support project activities.*

[SOW-671] *The Contractor SHALL ensure coherence between site survey results and project documentation (e.g., System Design Documentation Package, SIP) at any time. The Contractor SHALL update project documentation accordingly.*

9.1.2. Any long-lead item purchases or other financial obligations made by the Contractor following site surveys will not be claimed unless they are reflected in the baseline agreed to by the Purchaser at or after the Design Review.

9.2. Site Survey Preparatory work

9.2.1. Site Survey Work Book (SSWB)

[SOW-672] *The Contractor SHALL prepare a SSWB of checklists, fill-in forms, installation sketches, contact information, installation specifications, and site data to be collected by the Contractor during the site survey, and any other documentation required to perform site surveys.*

[SOW-673] *The Contractor SHALL make the SSWB available for Purchaser review and comment before the first site survey, and SHALL maintain and update as necessary during the site survey process.*

[SOW-674] *Upon acceptance of the SSWB by the Purchaser, the Contractor SHALL distribute the SSWB to the site(s) for preparation of the Site Surveys. This approach will enable a better preparation by the sites.*

9.2.2. Agenda

[SOW-675] *The Contractor's site survey(s) and installation sequence and dates reflected in the Project Implementation Plan SHALL be co-ordinated by the Contractor with the Purchaser and the Site POC to accommodate site-specific requirements, exercises, holiday periods, and other considerations.*

9.2.3. Introductory briefing

[SOW-676] *The Contractor SHALL prepare and provide an Introductory Briefing as an introduction to the IEG-C project, which will not assume other than basic knowledge of the project by the site personnel, covering at least:*

- *An outline of the system requirements,*
- *System functionalities,*
- *The sites to be implemented,*
- *The project timelines,*
- *The goals and objectives and agenda of the Site Survey process,*

- *The notional implementation identified for the surveyed site, to be refined through the Site Surveys activities.*

9.3. Survey of the site facilities

[SOW-677] *At the beginning of the site survey the Contractor SHALL provide a presentation to the local site personnel on the objectives and conduct of the site visit in the context of the overall IEG-C project.*

[SOW-678] *During the Site Surveys activities the Contractor SHALL determine the necessary installation preparations and support arrangements and collect all system implementation-relevant information. This SHALL include:*

- *Identification of the IEG-C Administrators, CIS Security Administrators, Operators, and more generally all Points of Contact;*
- *Identification of existing business processes (for both physical access control and logical access control), and how those processes will integrate with IEG-C Capability.*
- *Identification of the system IEG-C will interface with, in accordance with the business processes and transition requirements from existing capabilities to the IEG-C Capability;*
- *Identification of the system that are not ready to be migrated to IEG-C;*
- *Analysis of the training needs (see also 11.7);*
- *Identification of any input (item of equipment, documentation, information) or work required from the Purchaser and from the Site with indication of suspense date;*
- *Identification of the facilities where the IEG-C will have to be installed, together with each facility's zone level (see [NCIA AI TECH 06.03.01, 2015]);*
- *Identification of any potential TEMPEST-related requirement for the IEG-C equipment(see [NCIA AI TECH 06.03.01, 2015]);*
- *List of all system CIs (nature and quantities) to be installed in the site*
- *Update of the user list (see ANNEX B)*
- *Identification of the tools, policies and procedures in use at Purchaser facilities, in order to determine the integration requirements with the ITSM tools.*

[SOW-679] *After the Site Survey the Contractor SHALL present to the Purchaser his site engineering and installation drawing(s) and identify actions and follow-on activities.*

9.4. Site specific-requirements

9.4.1. Notwithstanding the requirements related to storage and backup solutions, some Purchaser locations have site-specific equipment (e.g. specific brand names for servers), which may differ from the project baselines at a site, to reduce operations and maintenance costs or to use existing facilities in the most efficient manner.

[SOW-680] *The Contractor SHALL determine if site-specific equipment is required at a location as part of any Site Survey performed under this Contract.*

[SOW-681] *If site-specific equipment is required, the Contractor SHALL issue an Engineering Change Proposal (ECP).*

[SOW-682] *In the ECP, the Contractor SHALL identify any requirements of the IEG-C System Design Specification it believes will not be met due to differences between the site-specific equipment and the standard baseline.*

[SOW-683] *If these exceptions to the IEG- System Design Specification are accepted by the Purchaser and incorporated into the Contract as formal amendments, the Contractor is not required to demonstrate, as part of its Site Activation work, that the associated System Design Specification requirement has been met. In such a case, the Contractor SHALL update the System Design Specification to reflect site-specific situations.*

[SOW-684] *The Contractor SHALL identify all facilities support, including modifications or additions, required. After coordination with the Purchaser, this notification SHALL be in the form of a letter to the site POC, with a copy to the Purchaser, accompanied by engineering drawings, checklists, or any other supporting information. Facilities support issues that represent Medium or High risk items SHALL be reflected in the Risk Log.*

9.5. **Outcomes**

[SOW-685] *The Contractor SHALL produce and deliver a Site Survey Report for each site. detailing its findings from the site survey, identifying all required Purchaser and Contractor actions to prepare for, conduct, or support IEG-C installation and activation, and identifying the type of training courses required and the number of Purchaser staff to be trained for each course.*

[SOW-686] *The Contractor SHALL accurately and formally document the findings of the Site Survey and the preparatory work required from the Site.*

[SOW-687] *After the Site Survey the Contractor SHALL present to the Purchaser his site engineering and installation drawing(s) and identify actions and follow-on activities.*

[SOW-688] *The Contractor's Site Survey Reports SHALL be provided within one week after the respective Site Survey is completed.*

[SOW-689] *At minimum, the Site Survey Report SHALL include:*

Serial	Requirement
1	Installation & Activation: • Stakeholders communication • System installation requirements • Schedule of installation activities
2	Training requirements
3	Logistics • Available system location & and space • Technical infrastructure • Delivery details
4	Local Security Accreditation Authority documentation • Contact Details of security responsibilities • Interconnection details • Network diagrams
5	Register all findings that require modification of the site infrastructure or change of the agreed implementation scope. For each of the changes the Contractor SHALL produce a formal change proposal.
6	For each out of scope item that requires either technical support or procurement activity, the Contractor SHALL offer a proposal to the Purchaser with his recommended solution.
7	Site diagram that SHALL be used as the basis for the As Built Documentation and used in the installation of the site.

[SOW-690] *At the end of the site survey the Contractor SHALL provide an out brief on the outcome of the site survey and identify actions and follow-on activities.*

9.5.1. The Purchaser will provide the Contractor with the exact shipment addresses and NATO POC for subsequent equipment delivery.

SECTION 10: SECURITY ACCREDITATION

10.1. Introduction

10.1.1. The objective of security accreditation is to ensure that an adequate level of protection is achieved and maintained through the life cycle of the CIS. The IEG-C must achieve security accreditation for it to be granted the authority to go live. To achieve this, the system will need to go through a Security Accreditation process and obtain the approval from Security Accreditation Authorities to use **IEG-C** to interconnect NATO networks/security domains in scope of this contract.

[SOW-691] *The platform SHALL demonstrate compliance with the NATO Security Policy and supporting directives and IEG-C security accreditation document set by obtaining the security accreditation of interconnections via the IEG-C installations.*

[SOW-692] *The Contractor SHALL be responsible to follow, implement and conform to the Pre-Accreditation Activities, and the Accreditation Process as defined and documented in [AC/35-D/2005-REV3] and Security Accreditation Plan (SAP) for IEG-C in order to obtain the required security accreditation statement(s) for the interconnections via IEG-C during each phase of the IEG-C project.*

[SOW-693] *The Contractor SHALL be required to carry out and meet the terms of the Security Accreditation Authority to perform any Post-Accreditation activities, such as periodic re-assessments of the security risks and periodic inspections up to the time of handover of the IEG-C to the CIS Provider (CISP).*

[SOW-694] *The Contractor SHALL obtain Approval for Testing (AfT) and/or Interim Security Accreditation (ISA) which are necessary during the stages of the implementation, tests and trials of the IEG-C project. This does not diminish the requirement for the Contractor to obtain the full Security Accreditation statement for each interconnection via IEG-C.*

10.2. Security Accreditation Authority (SAA)

10.2.1. The overall Security Accreditation Authority (SAA) for the IEG-C is the NATO CIS Security Accreditation Board (NSAB). Local SAA's will be involved in accreditation of the interconnection via IEG-C. Their role will be to ensure that IEG-C is implemented in accordance with the NSAB-approved security accreditation package for IEG-C and ensure that any agreed local (site specific) configurations are agreed and implemented in accordance with the local security regulations (e.g. [ACO 070-005]).

10.2.2. Coordination with the SAAs will be conducted by the Purchaser. The Contractor may be invited to provide briefings for the meetings with the SAAs.

[SOW-695] *The Contractor SHALL take action to follow, carry out the necessary work and to implement the advice, instructions and changes given by the SAA and local SAA's for the IEG-C.*

10.3. Security Accreditation Documentation

10.3.1. The achievement of the IEG-C security accreditation will require a prescribed set of security documentation to be produced, using security accreditation documentation templates. The templates will be made available to the Contractor after the Contract Award.

[SOW-696] *The Contractor SHALL produce security accreditation documentation and/or provide inputs to documents in support of the 3.7 Acceptance of IEG-C security*

accreditation package , as detailed in Security Accreditation Plan (SAP) for IEG-C

CIS Description
Security Accreditation Plan (SAP)
Security Risk Assessment (SRA) Report
Generic System Interconnection Security Requirements Statement (SISRS)
Security Operating Procedures (SecOPs)
Security Test and Validation Plan (STVP)

Table 20: IEG-C Accreditation Package

Statement of Compliance with IEG-C accreditation package
Security Test and Verification Report (STVR)

Table 21: Documentation for specific interconnection

[SOW-697] *The Contractor SHALL produce all security accreditation documentation or inputs to documents using security document templates provided by the Purchaser. These will be provided after the Contract Award.*

10.3.2. The documentation to be developed to support the IEG-C security accreditation process is listed in Security Accreditation Plan (SAP) for IEG-C.

10.3.3. The documentation set includes:

a. CIS description;

b. Security Accreditation Plan (SAP);

c. Security Risk Assessment (SRA) Report;

d. Generic System Interconnection Security Requirement Statement (SISRS) for IEG-C

e. Security Operating Procedures (SecOPs) for IEG-C administrators;

f. Security Test and Verification Plan (STVP);

g. Security Test and Verification Report (STVR) template;

h. Site-specific documentation:

- *Compliance Statement for interconnection(s) via locally installed IEG-C*
- *Local STVP (if required by the Local SAA, to address site-specific requirements); and*
- *Test Report based on STVR template (mandated for each site).*

10.3.4. Security Accreditation Plan (SAP) has been developed by the Purchaser and approved by the SAA. This document will be made available to the Contractor after the Contract Award. The SAP will be maintained by the Purchaser during the project life-cycle. Any SAP update will be presented to the SAA for its approval. Further security accreditation activities will be dependent on the decisions of the NSAB regarding the SAP.

[SOW-698] *The Contractor SHALL be responsible to implement the activities described in the SAP as approved by the SAA.*

10.3.5. Initial System Description for the IEG-C (Section 1.2 System Description) has been developed by the Purchaser. This document will be made available to the Contractor after the Contract Award. The System Description is the first document related to security accreditation to be updated after the Contract Award. It will contain all relevant information taken from the System Design Documentation Package and adapted to the SAA needs.

[SOW-699] *The Contractor SHALL update the initial CIS description document based on the System Description in Section 1.2 provided by the Purchaser, including all relevant information taken from the System Design Documentation Package and adapted to the SAA needs.*

[SOW-700] *The Contractor SHALL address Purchaser comments (including SAA comments) to achieve CIS description endorsement by the SAA.*

[SOW-701] *The Contractor SHALL maintain the CIS description during the project.*

10.3.6. Security Risk Assessments (SRAs) report will be produced by the Contractor, using SRA report template [SRA template]. Based on the results of the SRAs, the Contractor SHALL identify areas of the IEG-C requiring safeguards and countermeasures to comply with NATO Security Policy and supporting directives and [NS Reference Baseline]. The decision on specific security mechanisms will be based on evidence and results produced by the Security Risk Assessment.

[SOW-702] *The Contractor SHALL develop the SRA in accordance with Guidelines for Security Risk Management of CIS (Ref. [AC/35-D/1017-REV3]).*

[SOW-703] *The Contractor SHALL use the NATO template [SRA template] to document the results of the SRA.*

[SOW-704] *The Contractor SHALL identify areas of the IEG-C requiring safeguards and countermeasures to comply with NATO Security Policy and supporting directives and [NS Reference Baseline]. The decision on specific security mechanisms will be based on evidence and results produced by the Security Risk Assessment.*

[SOW-705] *The Contractor SHALL consider any change to be within the technical and financial scope of this Contract whenever the implementation of security measures results in the modification of the design (without introducing additional components), other documentation requirements, and changes to configuration of components; no ECP SHALL be generated.*

[SOW-706] *The Contractor SHALL raise an ECP whenever the implementation of security measures results in a requirement for additional components to be procured for implementation that could not be reasonably foreseen beforehand.*

[SOW-707] *The Contractor SHALL address Purchaser comments (including SAA comments) to achieve SRA report approval by the SAA.*

[SOW-708] *The Contractor SHALL maintain the SRA report during the project.*

10.3.7. Generic System Interconnection Security Requirements Statement (SISRS) for IEG-C will be developed, as directed by the SAA, defining the security requirements for interconnection via the IEG-C. The generic SISRS for IEG-C shall be approved by the SAA. The SISRS template will be provided by the Purchaser after the Contract Award.

[SOW-709] *The Contractor SHALL produce a generic System Interconnection Security Requirement Statement (SISRS) for IEG-C to include the minimum requirements mandated by NATO Security Policy and supporting directives and security measures to counter the risks identified in the IEG-C SRA.*

[SOW-710] *The Contractor SHALL produce the SISRS template for IEG-C using and following the guidance provided by the Purchaser.*

[SOW-711] *The Contractor SHALL ensure that each security requirement in the SISRS have a unique identifier which is crossed referenced to the security mechanism (Ref. [NS Reference Baseline]) addressing the requirement.*

[SOW-712] *The Contractor SHALL describe in detail possible information exchange scenarios and relevant security mechanisms implemented.*

[SOW-713] *The Contractor SHALL address Purchaser comments (including SAA comments) to achieve generic SISRS approval by the SAA.*

[SOW-714] *The Contractor SHALL maintain the generic SISRS during the project.*

10.3.8. Security Operating Procedures (SecOPs) for Gateway Services Section will be adapted to include the centralized management of the IEG-C. Existing SecOPs for Gateway Services Section will be made available to the Contractor after the Contract Award.

[SOW-715] *The Contractor SHALL produce specific procedures for centralized management of IEG-C and include them in IEG-C-specific section of the Security Operating Procedures (SecOPs) for Gateway Services Section.*

[SOW-716] *The Contractor SHALL address Purchaser comments (including SAA comments) to part of the SecOPs related to IEG-C.*

10.3.9. Security Test and Verification Plan (STVP) defines a set of test procedures to be executed to prove that the security mechanisms designed into the IEG-C to enforce the security requirements identified in the IEG-C SISRS. The STVP for IEG-C will be developed by Contractor. The Security Test and Verification Plan template [STVP template] will be made available to the Contractor after the Contract Award.

[SOW-717] *The Contractor SHALL produce the Security Test & Verification Plan (STVP) for the IEG-C using the NATO template [STVP template], defining the set of test procedures to prove that the security mechanisms designed into the **IEG-C** enforce the security requirements identified in the **IEG-C** SISRS. Each test procedure SHALL have unique ID and refer to at least one requirements from IEG-C SISRS and at least one Security Mechanism (from [NS Reference Baseline]).*

[SOW-718] *The Contractor SHALL provide traceability matrix to ensure every security test to be cross referenced to the corresponding security requirement from SISRS as well as to the tested security mechanisms.*

[SOW-719] *The Contractor SHALL ensure all security mechanisms of the IEG-C to be planned for testing.*

[SOW-720] *The Contractor SHALL address Purchaser comments (including SAA comments) to achieve STVP approval by the SAA.*

[SOW-721] *The Contractor SHALL maintain the STVP during the project.*

[SOW-722] *Where necessary due to local security requirements, the Contractor SHALL develop local version of STVP to address local security requirements (e.g. from [AD 070-005]).*

10.3.10. Security Test and Verification Report provides results of all security tests specified in the STVP. Security Test and Verification Report will be generated by Contractor. The Security Test and Verification Report template [STVR template] will be made available to the Contractor after the Contract Award.

[SOW-723] *For each IEG-C site, the Contractor SHALL execute security testing in accordance with STVP (or its local version, where relevant) and in coordination with the Purchaser.*

[SOW-724] *For each IEG-C site the Contractor SHALL generate a Security Test and Verification Report, containing results of all security tests specified in the STVP, using the STVR template.*

[SOW-725] *The Contractor SHALL ensure security test identifiers are preserved in the Report as defined in the STVP or relevant local STVP.*

10.3.11. IEG-C Compliance Statement is required for each of system interconnected between security domains served by IEG-C. The Statement of Compliance template for IEG-C will be developed by the Purchaser on basis of generic SISRS for IEG-C will be made available to the Contractor after IEG-C SISRS approval by the SAA.

[SOW-726] *The Contractor SHALL complete Statement of Compliance for each interconnection via IEG-C. The Statement of Compliance SHALL address local security requirements, where applicable.*

10.4. **Security Documentation Review**

10.4.1. All documents for security accreditation will be subject to Purchaser and SAA review and approval.

10.4.2. The Contractor should expect a number of review rounds per document before it will be approved, which makes security accreditation a lengthy process. Each review round may last 3 (three) months.

[SOW-727] *The Contractor SHALL ensure draft versions of security documents are provided by the PDR (EDC+3MO) and final versions by the CDR (EDC+6MO).*

[SOW-728] *The Contractor SHALL ensure implementation plans are flexible to take account of the time required for accreditation.*

10.5. **Responsibilities**

10.5.1. Table below summarizes responsibilities related development of each document required for security accreditation process.

10.5.2. Column “Baseline/Guidance” lists available templates, relevant NATO Security Directives and Guidance, and similar documentation existing NATO CIS which can be used as an example or initial input.

[SOW-729] *The Contractor SHALL undertake the work identified in the column ‘Contractor Responsibility’ in Table 18: Security Accreditation Documentation and Contractor Responsibility below:*

Document	Baseline/Guidance	Contractor Responsibility (*The Contractor SHALL* :)	Purchaser Responsibility
Generic documentation			
SAP	The SAP needs to be updated to the latest approved SAP template	Inform Purchaser about any expected changes in schedule of accreditation-related activities	Update SAP, when necessary Coordination with the SAA
CIS description	[IEG-C description]	Update CIS description Address Purchaser and SAA comments Maintain CIS description during project duration Achieve CIS description endorsement	Provide initial IEG-C description and guidance to the Contractor Review CIS description provided by the Contractor Coordination with the SAA Provide SAA comments to the Contractor
SRA Report	[AC/35-D/1017] [SRA template]	Conduct SRA Develop SRA report Address Purchaser and SAA comments Maintain SRA report during project duration	Provide guidance to the Contractor Provide SRA Report Template Review SRA Report provided by the Contractor Coordination with the SAA Provide SAA comments to the Contractor

Document	Baseline/Guidance	Contractor Responsibility (*The Contractor SHALL* :)	Purchaser Responsibility
		Achieve SRA approval by the SAA	
Generic SISRS for IEG-C	[AC/35-D/0030-REV5] [AC/322-D/0048-REV3] [NS Reference Baseline] [SISRS template]	Develop generic SISRS for IEG-C Address Purchaser and SAA comments Maintain generic SISRS during project duration Achieve generic SISRS for IEG-C approval by the SAA	Provide template and guidance to the Contractor Review generic SISRS for IEG-C provided by the Contractor Coordination with the SAA Provide SAA comments to the Contractor
SecOPs	GSS SecOPs	Develop procedures for centralized management of the IEG-C. Address Purchaser and SAA comments to IEG-C part of the SecOPs	Provide BPS SecOPs and guidance to the Contractor Review SecOPs provided by the Contractor Coordination with the SAA Provide SAA comments to the Contractor
STVP for IEG-C	[STVP template] [NS Reference Baseline]	Develop STVP (The STVP shall refer to generic SISRS for IEG-C and include traceability matrix) Address Purchaser and SAA comments Maintain generic STVP during project duration Achieve STVP approval by the SAA	Provide template and guidance to the Contractor Review STVP provided by the Contractor Coordination with the SAA Provide SAA comments to the Contractor
STVR for IEG-C Template	[STVR Template] [STVP for IEG-C]	Develop STVR template Address Purchaser comments	Provide STVR template and guidance to the Contractor

Document	Baseline/Guidance	Contractor Responsibility (*The Contractor SHALL* :)	Purchaser Responsibility
			Review STVR for IEG-C template provided by the Contractor
Statement of Compliance – to be done for each site where IEG-C is installed	[generic SISRS for IEG-C] [Statement of Compliance Template]	Complete Statement of compliance for each interconnection via IEG-C Include local security requirements, where applicable Address Purchaser and local SAA comments Achieve Statement of Compliance approval by the local SAA	Provide Statement of Compliance template and guidance to the Contractor Review SISRS provided by the Contractor Coordination with the local SAA Provide local SAA comments to the Contractor
Local STVP	[STVP for IEG-C]	Develop local STVP for IEG-C, where applicable (include testing of local security requirements) Address Purchaser and local SAA comments Achieve local STVP approval by the local SAA	Provide guidance to the Contractor Review STVP provided by the Contractor Coordination with the local SAA Provide local SAA comments to the Contractor
STVR (test report)	[STVR for IEG-C] [Local STVP]	Execute testing in accordance with STVP (or its local version) in coordination with the Purchaser Complete STVR	Provide guidance to the Contractor Cooperate/supervise with the Contractor during the testing Coordination with the SAA

Table 22: Security Accreditation Documentation and Contractor Responsibility

SECTION 11: QUALITY ASSURANCE

11.1. Definitions

11.1.1. Quality Assurance (QA) is a process and set of procedures intended to ensure that a product or service, during its definition, design and development phases will meet specified requirements.

11.1.2. Quality Control (QC) is a process and set of procedures intended to ensure that a manufactured product or performed service adheres to a defined set of quality criteria and meets the requirements of the customer

11.1.3. Under this contract the QA process SHALL be intended as Quality assurance and Control Program. The term QA will include also the QC definition.

11.1.4. Certificate of Conformity (CoC) is a document, signed by the Supplier, which states that the product conforms with contractual requirements and regulations

11.1.5. The CoC, verifies the process quality-enabled items produced or shipped comply with test procedures and quality specifications prescribed by the customer. It presents data derived from quality management information.

11.2. Introduction

[SOW-730] *The Contractor SHALL establish, execute, document and maintain an effective Quality Assurance (QA) programme throughout the Contract's lifetime.*

[SOW-731] *The Contractor's QA effort SHALL apply to all services and all products (both management products and specialist products) to be provided by the Contractor under this contract (this includes all hardware and software – COTS as well as developed for this project – documentation and supplies that are designed, developed, acquired, maintained or used, including deliverable and non-deliverable items).*

[SOW-732] *The Contractor's QA effort SHALL ensure that procedures are developed, implemented and maintained to adequately control the design, development, production, purchasing, installation, inspection, testing, configuration management and customer support of all services and all products (both management products and specialist products), in accordance with the requirements of this Contract.*

11.3. Quality Assurance References

[SOW-733] *The Purchaser, in this contract, applies the NATO Standardisation Agreement, STANAG 4107 "Mutual Acceptance of Government Quality Assurance and usage of the Allied Quality Assurance Publications (AQAP)" (see 2.1.2) which the Contractor SHALL herewith accept and adhere to.*

11.4. Roles and Responsibilities

[SOW-734] *The Purchaser may delegate the Quality Assurance to the appropriate Government Quality Assurance Authority (GQAA) in accordance with STANAG 4107. The Purchaser, through its own Quality Assurance, however, will retain*

the overall supervisory and liaison authority concerning all Quality related matters, and, for this purpose, will use its own QA Personnel.

[SOW-735] *The term "NATO Quality Assurance Representative" (NQAR) SHALL apply to any of the Purchaser appointed Quality Assurance Representative, whether nominated by the GQAA or by Purchaser QA. During the entire contract implementation, the NQAR(s) within their own rights, defined in the contract applicable AQAPs, SHALL assure the Contractor's and Sub-Contractor's compliance with all Quality related contractual requirement.*

[SOW-736] *The term "Contractor Quality Assurance Representative" (CQAR) SHALL apply to any of the Contractor appointed Quality Assurance Representative. That person SHALL be designated as the Contractor's QA Representative and point of contact for interface with and resolution of quality matters raised by the NCI Agency or his delegated NQAR and identified in the Quality Assurance Plan.*

[SOW-737] *The Contractor SHALL be responsible for controlling product quality and for offering to the NQAR(s) for acceptance only those supplies and services which conform to contractual requirements and, when required, for maintaining and furnishing objective evidence of this conformance.*

[SOW-738] *The NQAR(s) is (are) responsible for determining that contractual requirements have been complied with, prior to the acceptance of the services.*

[SOW-739] *The Contractor SHALL give written notice to the NQAR(s) at least four weeks in advance that the services are being presented for inspection, testing and acceptance. Testing SHALL only be permitted by using Purchaser approved test procedures and plans.*

11.5. **Quality Management System (QMS)**

[SOW-740] *The Contractor SHALL establish, document and maintain a Quality Management System in accordance with the requirements of ISO 9001:2015.*

[SOW-741] *The Contractor's and Sub-Contractor's QMS relevant to performance under this contract SHALL be subject to continuous review and surveillance by the cognizant NQAR(s).*

[SOW-742] *The Contractor SHALL include in orders placed with his Sub-Contractor(s) and Supplier(s), the QMS requirements necessary to ensure the supplies and services covered by the Sub-contract(s) and/or Purchase Orders conform to the requirements of the prime contract. As required, STANAG 4107 SHALL be specified.*

[SOW-743] *The Contractor SHALL specify in each order placed with his sub-Contractor(s) and Supplier(s),the Purchaser's and his NQAR(s) rights of access to all premises where contractual work is performed, in order to carry out audits, inspections, tests and other functions as may be required by the NQAR(s).*

11.6. **The Quality Assurance Plan (QAP)**

[SOW-744] *The Contractor's QA effort SHALL be described in detail in a Quality Assurance Plan (QAP), which SHALL clearly indicate the QA activities, responsibilities, and checks for the Contractor and any Sub-Contractors.*

[SOW-745] *All versions of the QAP SHALL be configuration controlled and provided to the Purchaser for acceptance.*

[SOW-746] *The acceptance of the QAP 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-747] *The Contractor SHALL review his QA programme periodically and audit it for adequacy, compliance and effectiveness.*

[SOW-748] *The Contractor SHALL ensure that all contractual requirements, including NATO supplements, are included in internal audits.*

[SOW-749] *The Contractor SHALL inform the NQAR(s) of deficiencies identified during internal audit unless otherwise agreed between the NQAR and/or the Purchaser and the Contractor.*

[SOW-750] *The Contractor SHALL include a risk management section within the QAP including the risks connected to the subcontractors of the Contractor.*

[SOW-751] *The Contractor SHALL agree to provide all necessary assistance to the NQAR.*

[SOW-752] *The Contractor SHALL make his quality records, and those of his subcontractors, available for evaluation by the NQAR throughout the duration of the Contract.*

[SOW-753] *The Contractor SHALL use the review processes described in the Configuration Management Plan (CMP) to manage changes to the QAP.*

[SOW-754] *The Contractor SHALL update the document, as required, from the delivery date of the initial QAP through Final Operating Capability (FOC), under Configuration Management. The Contractor SHALL provide a copy of each new version of the QAP to the NQAR and the new version SHALL be approved by the Purchaser.*

11.7. **Defects and Corrective Actions**

[SOW-755] *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-756] *The Contractor SHALL implement a quality/product assurance risk log/action tracking system, which identifies all the major/minor non conformity raised during the life cycle of this Contract.*

[SOW-757] *The Contractor, through its Corrective Action System, SHALL track all reported and recorded problems and deficiencies until their closure and clearance.*

[SOW-758] *The Contractor SHALL notify the Purchaser of proposed action, resulting from Review Output that will affect compliance with contractual requirements.*

[SOW-759] *The Contractor SHALL demonstrate that all the non-conformities are solved and all defects are closed before the product acceptance.*

[SOW-760] *The Contractor SHALL issue and implement documented procedures which identify, control and segregate all non-conforming products. Documented procedures for the disposition of non-conforming product are subject to*

approval by the Purchaser when it can be shown that they do not provide the necessary controls.

[SOW-761] *The Contractor SHALL notify the Purchaser of non-conformities and corrective actions required, unless otherwise agreed with the Purchaser.*

[SOW-762] *When the Contractor establishes that a subcontractor or a Purchaser Furnished Equipment (PFE) product is unsuitable for its intended use, he SHALL immediately report to and coordinate with the Purchaser the remedial actions to be taken.*

[SOW-763] *The Contractor SHALL ensure that only acceptable products, intended for delivery, are released. The Purchaser reserve the right to reject non-conforming products.*

[SOW-764] *The Contractor SHALL document the Corrective Action System in the QAP.*

[SOW-765] *The Contractor SHALL describe the process used for defect management in the QAP.*

11.8. **Certificate of Conformity (CoC)**

11.8.1. The Contractor is solely responsible for the conformance to requirements, of products provided to the Purchaser.

[SOW-766] *The Contractor SHALL deliver all the CoCs for COTS software (including firmware) and hardware released by the COTS Vendors.*

11.8.2. The CoCs delivered by the Contractor will be part of the acceptance data package of the product.

[SOW-767] *The Contractor SHALL provide a CoC at release of product to the Purchaser unless otherwise instructed.*

11.9. **Support Tools**

[SOW-768] *The Contractor SHALL make all support tools available for demonstration to the NQAR, upon request.*

[SOW-769] *The Contractor SHALL also make available to the Purchaser for review upon request, associated records and documentation, including but not limited to, control, authorization for use, calibration, validation, qualification, as applicable, per respective contract requirement.*

SECTION 12: CONFIGURATION MANAGEMENT

12.1. General

12.1.1. The Configuration Management process will enable the baselining of CIs into the Functional Baseline (FBL), Allocated Baseline (ABL) and Product Baseline (PBL) as defined in this section of the SOW and the maintenance of these baselines throughout the duration of the contract.

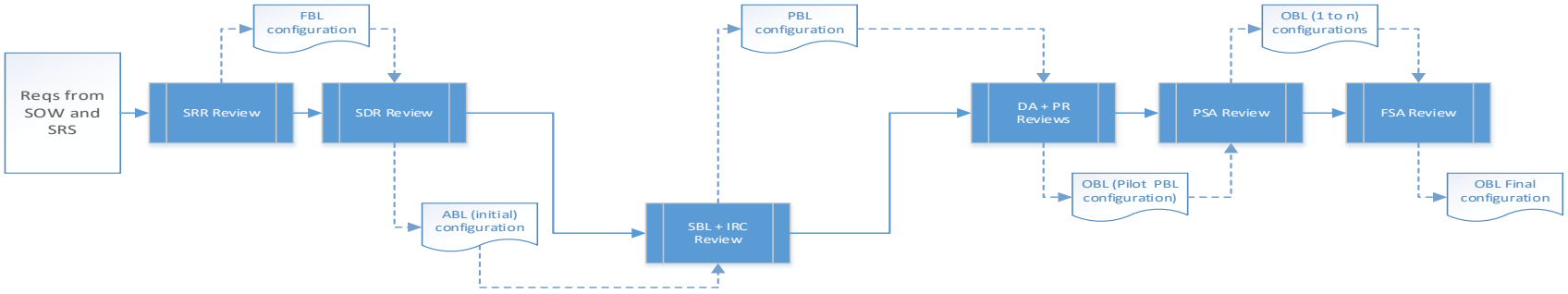
[SOW-770] *The Contractor SHALL implement a CM process as referred to in [STANAG 4427, 2014], [ACMP-2000, 2017], [ACMP 2009, 2017] and [ACMP-2100,2017] to carry out the Configuration Management functions as described in this SOW (configuration item identification, configuration control, configuration status accounting, and configuration audit and verification).*

[SOW-771] *The Contractor SHALL ensure that an effective Configuration Management organization is established to implement and manage the Configuration Management processes throughout the duration of this contract.*

[SOW-772] *The Contractor SHALL create and maintain four Configuration Baselines, as follows (see Figure 3). The Contractor shall create multiple instances of one type of the configuration baseline to adjust to the agile delivery approach, as required.*

- *Functional Baseline (FBL, or "as required"),*
- *Allocated Baseline (ABL, or "as designed"),*
- *Product Baseline (PBL, or "as built"),*
- *Operational Baseline (OBL, or "as delivered", or "as deployed").*

[SOW-773] *Under the CM program the Contractor SHALL maintain and update all project CIs as required by changes within the project or external to the project throughout the duration of the contract.*



1) SRR Review → FBL (as required)

2) SDR Review → ABL (as designed)

3) SBL Review(s) → PBL (as built)

4) DA+ PR Review(s) → OBL (as delivered) (Pilot Release)

5) PSA + FSA Reviews → OBL (as delivered) (Major/Final Release)

Product

Event

Legend:

SoW – Statement of Work
SRS – System Requirements Specification
SDR – System Requirements Review
FBL – Functional Baseline
ABL – Allocated Baseline
SBL – System Baseline Review
IRC – Internal Release Candidate
DA – Deployment Authorization
PR – Pilot Release Review
PBL – Product Baseline
PSA – Partial System Acceptance
OBL – Operational Baseline
FSA – Final System Acceptance

Figure 6: Configuration Baseline

12.2. **Baselines**

[SOW-774] *The Contractor SHALL ensure that all system configuration and baselines will be detailed in a System Version Definition Document (SVDD); see Section 15.7.*

12.2.1. Traceability

[SOW-775] *The Contractor SHALL ensure that there is full traceability through all baselines back to the functional baseline.*

[SOW-776] *The Contractor's developed baselines SHALL be encapsulated and maintained by the Contractor in a CM database (CMDB) established by the Contractor as specified under Configuration Management Tools.*

12.2.2. Functional Baseline (FBL)

12.2.2.1. The FBL is a set of documents that specifies the functional and non-functional requirements of a service or product and that is used as the approved basis for comparison.

[SOW-777] *The Contractor SHALL develop and derive the FBL from the IEG-C SRS and SHALL establish the FBL at the successful completion of the SRR (EDC+2MO) with the approved updated SRS.*

[SOW-778] *The Contractor SHALL maintain an up-to-date version of the Functional Baseline in the CMDB and ensure the relevant project documentation such as Requirements Traceability Matrix (RTM) is updated based on the approved FBL. The information SHALL be integrated into the NCI Agency DOORS database.*

12.2.3. Allocated Baseline (ABL)

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

[SOW-779] *The Contractor's developed design in the ABL SHALL meet the functional and non-functional requirements allocated in the FBL.*

[SOW-780] *The ABL set of documents and artefacts SHALL contain, but is not limited to, the following documents:*

- *System Design Specification*
- *Interface Control Document (ICD)*
- *The Test Specification*
- *Requirements Traceability Matrix*

[SOW-781] *The Contractor's initial ABL SHALL be established first at the successful completion of the PDR (EDC+3MO) and SHALL be finally accepted at the successful completion of CDR (EDC+6MO).*

[SOW-782] *The Contractor SHALL maintain and update the ABL configuration during the System Baseline Reviews (SBR).*

12.2.4. Product Baseline (PBL)

12.2.4.1. The PBL is a set of products and/or services, including supporting documents, which is used as the approved basis for comparison.

[SOW-783] *The Contractor SHALL ensure its PBL meets the functional and non-functional requirements allocated in the FBL and the design of the ABL.*

[SOW-784] *The Contractor SHALL ensure its PBL products are distinguished in documentation, software, hardware/equipment and services.*

[SOW-785] *The Contractor SHALL ensure the products of its PBL contain, but are not limited to, the following:*

- *Hardware components, including COTS,*
- *Software media, including COTS,*
- *Software license(s), including COTS.*

[SOW-786] *The Contractor SHALL ensure its PBL (supporting) documentation products contain, but are not limited to:*

- *As-built drawings,*
- *COTS O&M manuals,*
- *FBL documentation,*
- *ABL documentation,*
- *O&M manuals (custom),*
- *Inventory documentation (both for hardware and software products),*
- *Software Distribution list (SWDL),*
- *Training documentation,*
- *QA documentation,*
- *Security documentation,*
- *Configuration Management Database including the individual artefacts,*
- *Warranty documentation*
- *Requirements Traceability matrix.*

[SOW-787] *The Contractor SHALL include the SDS (including the RTM), the Test Plan, and any other documentation deemed appropriate by the Contractor, in accordance with provisions of IEEE 12207, to ensure requirements are reflected in the system during development and integration, can be demonstrated through a comprehensive set of tests, and can be delivered in the form of the Product Baseline.*

[SOW-788] *The IEG-C PBL SHALL be initially established before the testing events and SHALL be updated after the changes applied based on the outcomes of the testing events.*

[SOW-789] *The Contractor SHALL include in the PBL release package the following elements, as a minimum all items described in Table 19: Content for Product Baseline Release Package*

Serial	Requirement
1.	All required Hardware and Software CIs
2.	The source code of elements categorised as foreground knowledge, script, and configuration setting baseline, including the documentation for these items.
3.	The script and configuration setting baseline, including documentation for these items, for non-development software items (e.g., Microsoft Office).
4.	Release notes, which include a description of what is new or changed in each software module.
5.	List of open known problems and faults.
6.	The SRS and SDS versions against which the baseline has been developed.
7.	Interface Control Documents for all interfaces
8.	All design artefacts provided as part of the SDS, updated to reflect the PBL.
9.	Conversion programs and instructions.
10.	Plug-ins/add-ins, glue-code and interfaces.
11.	Parameter definitions.
12.	Initial data sets.
13.	On-line help files.
14.	Technical Documentation (i.e. operation and maintenance manuals)
15.	Training Documentation
16.	Test procedures and scripts for any automated tests, along with all source data for the manual and automated tests and including the documentation for these items.
17.	Test stub, along with test scenario and sample data to support the integration of IEG-C with other services.
18.	Copyright and license information.
19.	Instructions for system administration staff to follow to save the previously installed system baseline, to install the new baseline, and to recover the old baseline if the new baseline installation must be interrupted or aborted.
20.	Configuration files, and Installation scripts.
21.	Instructions on how to identify and report problems after acceptance.
22.	Instructions for the generation of new PBLs, distribution and installation of new software versions, and any test procedures and test cases necessary to verify the generated baseline before distribution.
23.	Additional documentation artefacts identified in the SRS.

Table 23: Content for Product Baseline Release Package

12.2.5. Operational Baseline (OBL)

[SOW-790] *The Contractor's developed OBL SHALL be initially established after successful completion of the PSA (EDC+20mo) and then finally established after successful completion of FSA. It reflects the "as-deployed" configuration of the system.*

[SOW-791] *The Contractor's OBL SHALL be established site-specific, as applicable.*

[SOW-792] *The Contractor's OBL SHALL contain, but is not limited to:*

- *All delivered software CI (i.e. CSCI, CSC, CSUs), including COTS;*
- *All delivered hardware CI (if any);*
- *All the Documentation that comprise the system and any subsequent releases;*

[SOW-793] *IEG-C Baselines SHALL be given a major release number and a minor release number comprising an X.X notation. The complete baseline identifier SHALL include the specific baseline identifier (i.e. FBL, ABL, PBL, and OBL), site identification (if applicable) and security domain difference (if applicable). Final numbering scheme for the baseline identification may be modified with Purchaser agreement, and it SHALL be proposed for Purchaser approval within the CM Plan.*

[SOW-794] *The Contractor SHALL update and re-release the PBL documentation outlined in Table 4, as required.*

12.3. **Configuration Management Plan (CMP)**

[SOW-795] *The Contractor SHALL provide a CMP tailored to the requirements of the proposed technical solution.*

[SOW-796] *The Contractor's CMP SHALL be structured as a living document subject to revisions and updates, as required.*

[SOW-797] *The Contractor SHALL place the plan under configuration control prior to its implementation and for the life of the Contract.*

12.3.1. The CMP is a Product Lifecycle document that will survive the project after FSA. As such, this documents are not to be submitted as part of the PMP, but will be part of the Technical Proposal.

[SOW-798] *In producing the CMP, the Contractor SHALL define the organisation and procedures used to configuration manage the functional and physical characteristics of CIs, including interfaces and configuration identification documents.*

[SOW-799] *The Contractor SHALL ensure that all required elements of CM are applied in such a manner as to provide a comprehensive CM process.*

[SOW-800] *The Contractor's CM Plan SHALL be compatible and consistent with all other plans, specifications, standards, documents and schedules.*

[SOW-801] *The Contractor SHALL propose in the CMP detailed configuration control procedures.*

[SOW-802] *All Contractor and Purchaser activities and milestones related to CM SHALL be identified and included in the PMS of the PMP.*

[SOW-803] *The Contractor SHALL establish and maintain product-based planning which SHALL include as a minimum:*

- *A product description of the final product of the project;*
- *A Project PBS;*
- *Product Descriptions of each product;*
- *A PFD.*

[SOW-804] *The Contractor's CM Plan SHALL address all disciplines within this Section and SHALL as a minimum include, but not be limited to the following Sections:*

- *Introduction;*
- *Organisation;*
- *Configuration Identification and Documentation;*
- *Configuration Control;*
- *Configuration Status Accounting;*
- *Configuration Audits;*
- *Configuration Management Database (CMDB);*
- *Configuration Management tools/Interface management.*

12.4. **Configuration Item Identification and Documentation**

[SOW-805] *The Contractor SHALL divide the products and specialist products into Configuration Items (CIs).*

[SOW-806] *The Contractor's CI structure SHALL show the relationships between the lower level Baselines and CIs.*

[SOW-807] *The Contractor SHALL propose appropriate CIs in the CM Plan including an explanation of the rational and criteria used in the selection process, based on the criteria for selection of CIs as detailed in [ACMP 2009, 2017].*

[SOW-808] *The Contractor's CIs SHALL be chosen in a way to assure visibility and ease of management throughout the development effort and the support to the OBL after acceptance.*

[SOW-809] *All Contractor's COTS, adapted, and developed software SHALL be designated as CIs.*

[SOW-810] *Where Contractor's COTS can be installed in a modular fashion, the description of the CI SHALL unambiguously identify the complete list of installed components.*

[SOW-811] *The Contractor SHALL designate as CIs all hardware elements (if any) down to the maintenance significant item level.*

12.4.1. Additional guidance about CI selection can be found in [ACMP 2009, 2017] and in [STANAG 4427, 2014].

12.4.2. The Purchaser reserves the right to modify the CI structure and attributes.

[SOW-812] *The Contractor SHALL ensure the level of granularity for the CI selection reaches at a minimum:*

- *Line Replaceable Units (LRUs) - Hardware CIs,;*
- *Software Assets and/or Firmware/Software CIs;*
- *All Maintenance Significant Items (MSI) lower than LRU level;*
- *Documentation delivered under this Contract - Documentation CIs;*

[SOW-813] *The Hardware CI attributes SHALL include, but is not limited to, the MDS information,(Optional);*

[SOW-814] *The Software CI attributes SHALL include, but is not limited to, the [ACMP 2009, 2017] definitions;*

[SOW-815] *Any Documentation CI that is not linked to a Software CI or Hardware CI (optional) SHALL include, but is not limited to, the Contract SSS attributes.*

12.5. **Configuration Control**

[SOW-816] *The Contractor SHALL be responsible for issuing in a timely manner all approved changes and revisions to the functional, development and PBL documents included in the Contract. This includes changes originated both by the Contractor and the Purchaser.*

[SOW-817] *Where a change affects more than one document, or affects documents previously approved and delivered, the Contractor SHALL ensure that the change is properly reflected in all baseline documents affected by that change.*

[SOW-818] *The Contractor SHALL appropriately reflect all design changes in the technical documentation by the issue of appropriate changes or revisions.*

[SOW-819] *The Contractor SHALL provide all such changes/revisions to the Purchaser.*

[SOW-820] *The Contractor SHALL be fully responsible for the Configuration Control of all baselines and CIs in accordance with [ACMP 2009, 2017] and [ACMP-2000, 2017].*

[SOW-821] *The Contractor SHALL define the responsibilities and procedures used within the Contractor's organization for configuration control of established CI, and for processing changes to these CI.*

[SOW-822] *The Contractor SHALL define the Configuration Baseline Change procedures and SHALL submit Notice of Revision or Request for Deviations (RFD) and Request for Waivers (RFW) when required and approved by the Purchaser.*

[SOW-823] *The Contractor SHALL provide read-only access to the Purchaser to audit and control its productions environments and configuration management tools (for software, documentation and hardware, if applicable).*

12.6. **Engineering Change Proposals (ECP)**

[SOW-824] *The Contractor SHALL process changes to the his developed baselined CIs as either Class I or Class II ECPs as defined in [ACMP 2009, 2017] and the change request requirements specified.*

[SOW-825] *The Contractor SHALL use the configuration control procedures specified in the CM Plan for the preparation, submission for approval implementation and handling of ECPs to baselined CIs.*

[SOW-826] *When submitting ECPs, the Contractor SHALL assign a priority rating of Emergency, Urgent or Routine Extensions to the target times for processing.*

[SOW-827] *Changes to baseline CIs SHALL be processed as either Class I or Class II ECPs as defined in [ACMP 2009, 2017].*

[SOW-828] *Class I ECPs SHALL have to be mutually agreed upon by the Contractor and Purchaser.*

[SOW-829] *Prior to implementation, all Class II ECPs SHALL be submitted by the Contractor to the Purchaser for review and classification concurrence.*

[SOW-830] *If the Purchaser's representative does not concur in the classification, Class I ECP procedures SHALL be applied by the Contractor and the ECP and then formally submitted to the Purchaser for approval or rejection.*

[SOW-831] *Extensions to the target times for processing Class I ECPs SHALL be mutually agreed upon by the Contractor and Purchaser.*

[SOW-832] *The Contractor SHALL not implement Class I ECPs before Purchaser approval.*

[SOW-833] *The Contractor SHALL reflect in the technical documentation all design changes appropriately by the issue of appropriate documentation revisions.*

[SOW-834] *The Contractor SHALL provide all supporting documentation and information to detail the impact of the change in design, specification, maintenance and support, documentation, cost, schedule, and security, as requested by the Purchaser.*

[SOW-835] *The Contractor SHALL propose in the CM Plan an ECP format based on the requirements in [ACMP 2009, 2017].*

[SOW-836] *The Contractor SHALL include in an ECP as a minimum, the following information:*

- *Reference Number;*
- *Requirement affected (using the outline numbering of the core SOW, or of Annex A);*
- *Nature of change;*
- *Rationale for the change;*
- *Impact of change;*
- *Description of how the change will be reflected in the delivered system's cost, schedule, and/or performance. This description SHALL include any trade-offs that SHALL be considered;*
- *Status;*

- *Priority.*

[SOW-837] *After the completion of Deployment Authorization (DA at EDC+20mo), the Contractor SHALL provide the ECP's for proposed changes which will also require the new approval for the DA. For that purpose, the Contractor SHALL provide all the information necessary and support the Purchaser Project Manager by any means to obtain the Deployment Authorization based on the proposed change and new baseline.*

12.7. **Requests for Change (RFC)**

12.7.1. The achievement of the Deployment Authorization (DA) milestone is subject to the Purchaser approval. This process will be triggered with a Request for Change (RFC) by the NATO assigned PM. The last Purchaser approved baseline for the RFC process will be used. The RFC will be submitted to the Purchaser's Change Advisory Board (CAB) for screening. The CAB will decide if further or other tests are required. If all the RFC required final documents are submitted and the production baseline is successfully tested by the Purchaser's internal test activities, the CAB may grant the approval to be deployed on NATO Operational targeted Networks. As part of this process the new baseline is incorporated into the relevant Approved Fielded Products List (AFPLs).

[SOW-838] *The Contractor SHALL comply and support Purchaser's internal Change Management Process in order to obtain the Deployment Authorization Approval through the Change Advisory Board (CAB).*

[SOW-839] *The Contractor SHALL support the Purchaser in preparing the Request For Change (RFC) to meet the requirements of the Purchaser's Change Evaluation process.*

[SOW-840] *The Contractor SHALL provide all necessary documentation and information for the successful completion of the Deployment Authorization.*

[SOW-841] *The contractor SHALL assist the Purchaser with the installation and configuration the system/application in accordance with the Contractor provided Installation and Configuration Manual(s).*

[SOW-842] *The Contractor SHALL conduct a Functional Configuration Audit (FCA) and deliver the associated FCA report*

[SOW-843] *After the successful testing of SIT/SAT/UAT and Security tests, the Contractor, through the NATO assigned PM, SHALL submit the baseline to the Purchaser IT Change Management process by submitting the RFC.*

[SOW-844] *The NATO assigned PM SHALL seek the authorization of deployment on the relevant targeted NATO networks. The Contractor SHALL provide the required final RFC documents (i.e. ECP and supporting documentation) described in SOW 12.6.*

[SOW-845] *The RFC SHALL be submitted to Purchaser's Change Advisory Board (CAB) for screening. The CAB SHALL decide if further or other tests are required. The latest Purchaser approved baseline for the RFC process SHALL be used.*

[SOW-846] *If the Contractor is produced a new build or baseline version the Contractor SHALL follow Purchaser's internal Change Management process and test activities as deemed necessary by the CAB.*

[SOW-847] *The Contractor SHALL note that system implementation activities in operational environment will not start until the DA milestone is approved by the Purchaser.*

[SOW-848] *The Contractor SHALL provide and update all related baseline documentation and traceability to reflect the modifications triggered by the change.*

12.7.2. The Purchaser will verify the Installation and Configuration Manual(s) and other delivered Documents as deemed necessary as part of the CAB approval process

12.7.3. The Purchaser has a right to perform any other tests as deemed necessary

12.7.4. The installation of new baseline will be performed by the Purchaser unless requested by the Purchaser to be installed by the Contractor and witnessed by the Purchaser.

[SOW-849] *The Contractor, if requested by the Purchaser SHALL install the new baseline or other instances of new baselines for Security and other Purchaser related tests.*

12.7.5. Release Package

12.7.5.1. A Release Package is a planned release of a product or product edition. The content of a Release Package is defined by the features and associated Requests for Change (RFC) that it implements.

[SOW-850] *The Contractor SHALL supply the documents in Final form listed in Table 20 - System Submission Requirements Matrix (SSRM) for inclusion in the Purchaser Release Package for the RFC.*

		MAJOR / MINOR RELEASES	PATCH RELEASES
COMMON	A&T Portfolio	✓	✗
	Funding availability	✓	✓
	System Media	✓	✓
	Release information (Release Notes / Product Guide / Version Description document)	✓	✓
	Installation Instructions	✓	✓
	User Manual[6]	✓	✗

[6] User Manual is required for systems that have a human interface.

	Administration Manual[7]	✓	✗
	Security Settings[8]	✓	✗
	Support Plan	✓	✗
	Deployment Plan	✓	✓
	Design Description[9]	✓	✗
ADDITIONAL REQUIREMENTS FOR NOTS	Requirement Traceability Matrix	✓	✗
	Functional Test Report	✓	✗
	User Acceptance Test Report[10]	✓	✗
ADDITIONAL REQUIREMENTS FOR NEW SOFTWARE	CONOPS	✓	✗

Table 24: System Submission Requirements Matrix (SSRM)

12.8. **Requests for Deviation (RFD) and Request for Waver (RFW)**

[SOW-851] *If required, the Contractor SHALL prepare, handle, and submit for Purchaser's approval, RFDs and RFWs as defined in [ACMP 2009, 2017].*

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[7] Administration Manual is only required if the deployment and maintenance of the release necessitates special administration operations.

[3] Security Settings are required when the target environment needs to be configured in accordance with Cyber Security requirements.

[4] Interface Design and Architecture Descriptions are required when the system interoperates with other systems.

[10] In case of Interim Approval request or customer feedback on UAT is available via other records or communication, User Acceptance Test (UAT) Report is not required upon submission.

[SOW-852] *The Contractor SHALL propose in the CM Plan a RFD and RFW format based on the requirements in [ACMP 2009, 2017].*

[SOW-853] *The Contractor SHALL be aware that permanent departures from a baseline SHALL be accomplished by ECP action rather than by RFD/RFW.*

12.9. **Configuration Status Accounting (CSA)**

[SOW-854] *The Contractor SHALL be fully responsible for the CSA for all CIs in accordance with [ACMP 2009, 2017].*

[SOW-855] *Contractor SHALL prepare and deliver the CSA reports for each milestone and as requested by the Purchaser.*

[SOW-856] *The Contractor SHALL propose the format of the CSA report in the CM Plan for Purchaser's approval.*

[SOW-857] *The Contractor SHALL deliver CSA reports to the Purchaser both as part of management and specialist products in this contract and also as standalone documents at the Purchaser's request.*

[SOW-858] *At the end of the Contract, the Contractor SHALL deliver a set of final CSA reports for each CI or set of CI's in both hard copy and in electronic media.*

12.10. **Configuration Verification and Audits**

[SOW-859] *Upon request from the Purchaser, the Contractor SHALL support configuration audits to demonstrate that the actual status of all CIs matches the authorised state of CIs as registered in the CSA reports according to [ACMP 2009, 2017].*

[SOW-860] *The Contractor SHALL support the FCA and PCA by providing the required Baseline Documentation and answering questions from the Purchaser's Auditor.*

[SOW-861] *The Contractor SHALL draft a Configuration Audit Report for the FCA and PCA that summarises the results for the Purchaser's approval.*

[SOW-862] *The Contractor SHALL solve any deficiencies found during the Configuration Management Audits within the agreed timeframe and update the baseline accordingly.*

[SOW-863] *The Contractor SHALL provide the initial version of his ABL and PBL to the Purchaser for acceptance.*

12.10.1. Upon Purchaser Acceptance, ABL and PBL will be placed under the control of the CCB.

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

[SOW-864] *The Contractor SHALL keep the contents of the ABL and PBL under Configuration Control to reflect the progress of the project activities.*

12.11. **Configuration Management Database and Software Versioning Tool**

12.11.1. Configuration Management Database (CMDB)

[SOW-865] *The Contractor SHALL create and maintain a CMDB that persists the CIs attributes, (inter-) relationships, and Configuration Baselines.*

[SOW-866] *The Contractor SHALL create or use a COTS software to maintain the CMDB that persists the Configuration Items (CIs) attributes, (inter-) relationships and Configuration Baselines.*

[SOW-867] *The Contractor SHALL ensure that the Configuration Baselines and CIs are persistently stored, maintained and managed in the CMDB.*

[SOW-868] *The Contractor SHALL keep the CMDB consistent and updated. The Contractor SHALL keep the CMDB consistent and updated.*

[SOW-869] *The Contractor, through the CMDB, SHALL provide the ability to easily trace higher and subordinate CIs using CI identifiers or other CI attributes.*

[SOW-870] *The Contractor's CMDB SHALL be compliant with the Purchaser's IT Service Management (ITSM) Tools.*

12.11.2. Software Versioning Tool

[SOW-871] *The Contractor SHALL use a software source code version control program for any custom software development.*

[SOW-872] *Subject to approval of the Purchaser under the Technology Substitution clause, the Contractor SHALL establish and maintain the baselines referred to above using the latest commercial version of the version control/Configuration Management automated tool.*

[SOW-873] *The Contractor, through his provided version control/Configuration Management automated tool, SHALL include the capabilities for baselines management, source control versioning, configuration item identification, change request management, deficiency reporting management, and configuration status accounting.*

[SOW-874] *The Contractor SHALL provide the Purchaser read-only access to the version control/Configuration Management automated tool.*

[SOW-875] *The Contractor SHALL provide the ability for the Purchaser to access (read-only) the source code of the baseline via the version control/Configuration Management automated tool.*

[SOW-876] *The Contractor SHALL provide the version control/Configuration Management automated tool as part of the IEG-C Reference System to enable life-cycle Configuration Management.*

[SOW-877] *At the end of the contract, the Contractor SHALL transfer the current CMDB database to the Purchaser.*

12.12. **Configuration Identification and Documentation**

12.12.1. Configuration Identification

[SOW-878] *The Contractor SHALL establish a Configuration Identification System.*

[SOW-879] *The Contractor's, through his Configuration Identification System, SHALL identify all documents necessary to provide a full technical description of the*

characteristics of the Hardware and Software CIs that require control at the time each baseline is established.

[SOW-880] *The Contractor, through his Configuration Identification System, SHALL include the relevant deliverables in the contract.*

[SOW-881] *The Contractor SHALL provide a CI structure in a tree structure with the PBL being the top level CI.*

12.12.2. Documentation

[SOW-882] *The Contractor SHALL include detailed proposals for the documents that will comprise the above baselines in the CM Plan for approval by the Purchaser.*

[SOW-883] *At the end of the contract, the Contractor SHALL deliver the baseline documentation in a format which complies with SOW 11.6.12.*

[SOW-884] *As part of the CMDB, as specified under Configuration Management Tools, the Contractor SHALL transfer a copy of the current version of all baselines to the Purchaser at contract completion.*

[SOW-885] *The Contractor SHALL propose the documentation identification and version control system right after the Kick-off Meeting, before the release of the project documentation, for Purchaser approval. The identification SHALL include the project number, the document name and the version of the document. The versioning of the documentation SHALL be applied in a manner that major versions will be applied before each milestone or official delivery, and minor versions will be applied within the review cycles.*