AIR TRAFFIC AND NAVIGATION SERVICES CO. LTD

REPUBLIC OF SOUTH AFRICA

REQUEST FOR PROPOSALS:

ATNS/TPQ/RFP28/2025/2026/3D Aerodrome Simulator

3D AERODROME – TOWER SIMULATORS AND 3D DESKTOP (MINI) SIMULATORS PROJECT

The supply, delivery, commissioning, and support of a 3D aerodrome simulator and 3D mini simulators

VOLUME 4

LOGISTICS SUPPORT REQUIREMENTS

JANUARY 2026

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ABBREVIATIONS

API	Application Program Interface
ASBU	Aviation System Block Upgrade
ATA	ATNS Training Academy
ATNS	Air Traffic and Navigation Services State Owned Company Limited
ATNS HO	Air Traffic and Navigation Services State Owned Company Limited Head Office
ATS	Air Traffic Services
ATSU	Air Traffic Services Unit
CDRL	Contract Data Requirement List
CMP	Configuration Management Plan
CSCI	Computer Software Configuration Item
COTS	Commercial Off-The Shelf
FAOR	Johannesburg Control Centre
FAT	Factory Acceptance Test
FMECA	Failure Mode Effects and Criticality Analysis
FRC	Fault Reporting Centre
ICAO	International Civil Aviation Organization
ICD	Interface Control Document
LRU	Line Replacement Unit
LS	Logistics Support
LSA	Logistics Support Analysis
LSAR	Logistics Support Analysis Report
LSIP	Logistics Support Implementation Plan
LSP	Logistics Support Plan
MDT	Mean Down Time
MMS	Maintenance Management System
MTBF	Mean Time Between Failures
MTTR	Mean Time To Repair
OEM	Original Equipment Manufacturer
PBU	Period of Beneficial Use
PHS&T	Packaging, Handling, Storage and Transportation
RAM/RMA	Reliability, Availability and Maintainability
RCMS	Remote Control and Monitoring System
SARPS	Standards and Recommended Practices
SAT	Site Acceptance Test
SLA	Service Level Agreement
SME	Subject Matter Expect
SP	Spares Plan
TAT	Turn Around Time

TEP	Test Equipment Plan
TP	Training Plan

GLOSSARY OF TERMS

Availability
The measure of a hardware or software system, subsystem or equipment operational time represented by a ratio of total actual functional time over the total time it is required or expected to function. The availability will be measured and expressed as a percentage.

MTBF
A measure of the reliability of repairable hardware or software system, subsystem or equipment items, represented by the number of functional life units measured in hours, during which all hardware or software system, subsystem or equipment perform within their specified limits in a given period of time.

MTTR
A measure of the maintainability of repairable hardware or software system, subsystem or equipment items, represented by the average (mean) time measured in hours to repair or restore a failed component of a hardware or software system, subsystem or equipment.

Reliability
It is the ability of a hardware or software system, subsystem or equipment to consistently perform according to its specifications over a specified period of time. Reliability is determined by the measure of how often an item fails in a given period of time expressed in terms of (MTBF).

PBU
PBU is the equivalent of a guarantee and warranty period where support validation takes place. During this period, the system is maintained as per the LSP, under the responsibility of the supplier and where there will be concurrent running of both the warranty and the verification of Phase 1 and 2 deliverables.

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1 INTRODUCTION

This document defines the basic and minimum logistics support requirements for the supply, installation, commissioning, operational acceptance and maintenance of the systems that will be implemented for all the sites where the 3D aerodrome and 3D mini simulator systems will be installed. It furthermore describes the Logistics Support (LS) System that is required for the total support of the 3D aerodrome and the 3D mini simulator systems during project phase, as well as post implementation during the utilization of the system till the end of economic life of the equipment. With already existing and complementary infrastructure assets in place, ATNS aims to have a maintenance model that will ensure seamless integration to the existing processes and procedures for maintenance. The new system maintenance philosophy should be aligned to the ATNS maintenance and support concept outlined in **Section** 2, as well as the requirements set out in **Sections** 5 - 11.

The term “system” in this document refers to the simulator (3D aerodrome and 3D mini simulators).

1.1 Overview of the Logistics Support implementation phases

The Logistics Support implementation will run over a course of four (4) phases, that is, development phase 1A (Submission of Tender); development phase 1B (Contract Baseline); implementation phase 2 (Project Roll-Out); evaluation phase 3 (PBU) and the application phase 4 (System Lifespan).

In responding to this tender, Bidders are required to deliver all the draft documents/plans listed in **Table 1** under the “SUBMISSION OF TENDER” column (Phase 1A – Development).

Each phase deliverables will result in the achievement of the following milestones:

Phase 1A – Short-listing

Phase 1B – Contract award

Phase 2 – Site Acceptance Test

Phase 3 - Final System/Operational Acceptance

Phase 4 – Decommissioning

1.2 LS implementation phases

Table 1 - LS implementation phases

SUBMISSION OF TENDER	CONTRACT BASELINE	PROJECT ROLL-OUT	PBU	SYSTEM LIFESPAN
PHASE 1A - DEVELOPMENT	PHASE 1B – DEVELOPMENT	PHASE 2 – IMPLEMENTATION	PHASE 3 - EVALUATION	PHASE 4 - APPLICATION
• LSIP - Draft • LSAR - Draft • LSP - Draft • RAMP - Draft • Training Plan – Draft • Spares Plan– Draft • Test Equipment Plan – Draft • Documentation Plan • PHS&T Plan – Draft • CMP – Draft • TOTAL LRU REPAIR COSTS – Draft • ICD Document - Draft • Support Contract - Draft • Transition Plan – Draft • FMECA - Draft	• Review and Issue before Contract award • LSAR – Issue1 • LSP – Issue 1 • RAMP - Issue 1 • Training Plan – Issue 1 • Spares Plan– Issue 1 • Test Equipment Plan – Issue 1 • Documentation Plan - Issue 1 • PHS&T Plan – Issue 1 • CMP – Issue 1 • TOTAL LRU REPAIR COSTS – Issue 1 • ICD/API Document-Issue 1 • Support Contract • Transition Plan – Issue 1 • FMECA – Issue 1 • All Software License Certificates	• Provision of Training Courses • Delivery of Documentation • Delivery of Spares • Issuing of As-built documents • Delivery of Test Equipment • Delivery of all Software License Certificates	• RAM Verification • Spares Verification • PHS&T Verification • Documentation Acceptance • CMP Verification • LSP Update • Evaluation of Training Effectiveness • As–Built Documents Verification	• System Utilization, Maintenance and Support till end of Economic Life

2 ATNS MAINTENANCE AND SUPPORT CONCEPT

The ATNS maintenance is segmented into two regions that comprise of Northern and Southern Regions, where Northern region covers maintenance centres such as O.R. Tambo (Johannesburg), King Shaka (Durban) and Bram Fischer (Bloemfontein) and Southern region covering Cape Town, Chief Dawid Stuurman (Port Elizabeth), George and King Phalo (East London). The ATNS support concept's aim is to ensure that ATNS can achieve performance objectives as contracted with its customers. To achieve the performance objectives, the ATNS maintenance and support concept is based on a three-tiered support model comprising of Operator, Intermediate and Depot level support, as demonstrated in Figure 1.

2.1 Support concept structure

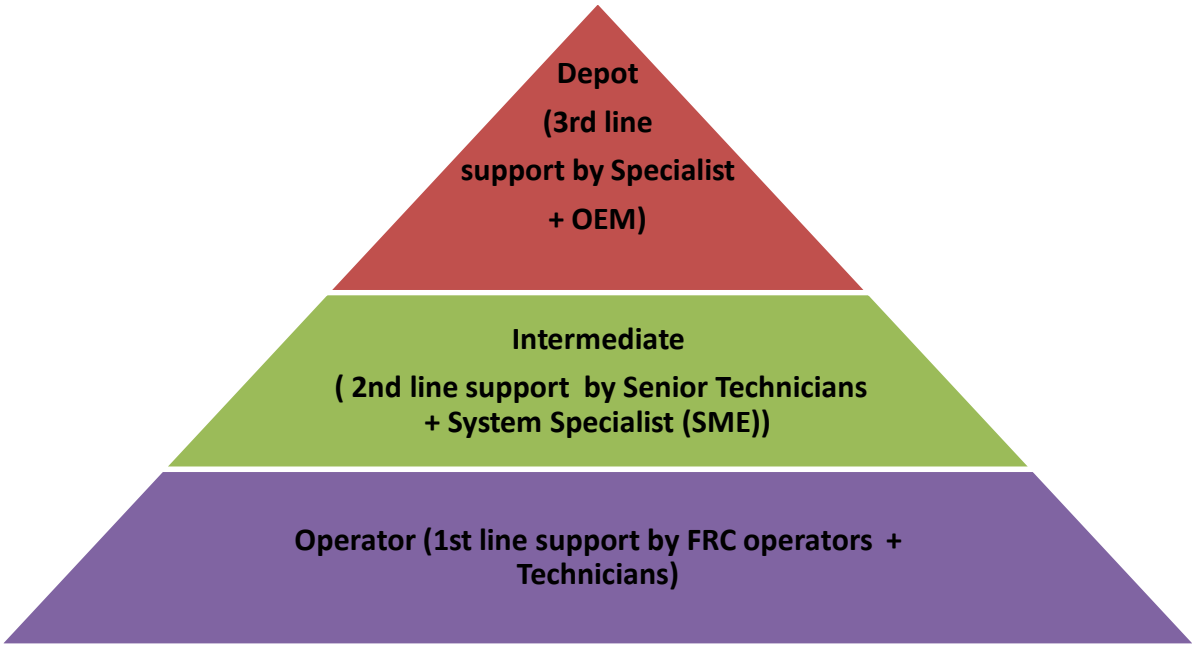


Figure 1 – Support Structure

2.2 Operator (O) Level support

The operator level support is typically the 1st line maintenance in the support concept structure. The activities in the O level are carried out by ATNS technical personnel. These activities include first-line monitoring through the Fault Reporting Centre. Equipment fault diagnosis and restoration of service, by reconfiguration, is mainly done by means of Remote-Control Monitoring Systems (situated in Supervisor Positions), from the assigned maintenance Centre.

2.3 Intermediate or (I) Level maintenance

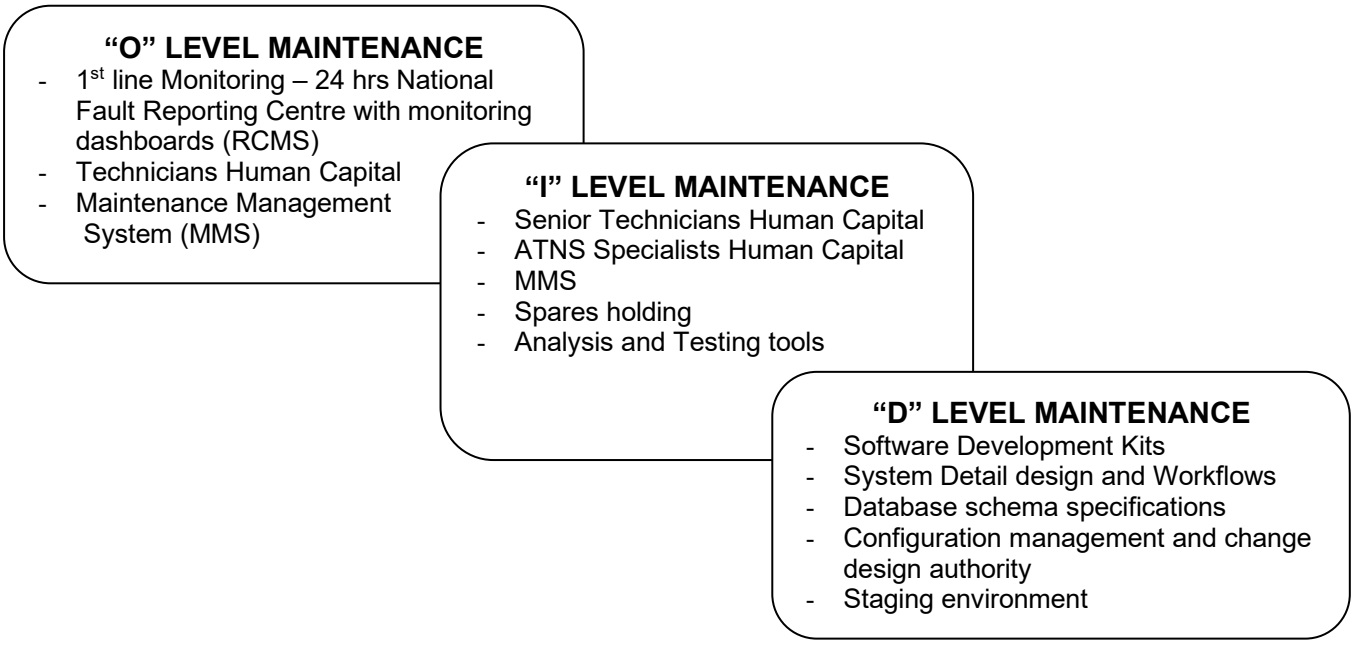
The Intermediate level support is the typical 2nd line support within the support concept structure. The "I" level activities are carried out by ATNS technical staff located at both the different sites and the respective maintenance centres/workshops. The scope of work done during 2nd line maintenance includes corrective and (routine) preventative maintenance for software applications, databases (down to CSCI level) and hardware = (module/LRU levels) where applicable. This level of maintenance includes maintenance to the buildings at the site as well as the site itself, such as, roads, grass cutting, fencing, antennae, power and communications from the point of supply.

2.4 Depot or (D) Level maintenance

This maintenance level is typically the 3rd line support within the structure, where "D" level maintenance covers all software and hardware failure investigations, advanced troubleshooting and provision of workarounds, rectifications and enhancements. At hardware level, this would typically be component level maintenance. Hardware faulty modules are normally returned to the Supplier/Contractor or their Agents for repair / exchange under a maintenance and support contract. This applies primarily to relatively newer/modern systems.

2.5 Support Resources

In order for ATNS to be able to fulfill the maintenance performance objectives and to effectively operate within the framework of the support concept, typical high-level support resources are demonstrated in the Figure below necessary for the fulfillment of the O, I and D level maintenance activities but not limited to:



For "O" level maintenance activities, the support resources used, but not limited to, include the 24-hour manned Fault Reporting Centre. This serves as the first interface wherein operational

clients report faults, on system issues, as well as enables dispatching of technicians on duty. ATNS also has a computerized maintenance management system that has the entire ATNS asset components loaded on it, for ensuring that all system performance issues are remedied and addressed according to a set out SLA. ATNS has spares stores at each maintenance center for the technical systems. A set of analysis and testing tools are located primarily at the local centers based on the complement of systems that reside in that station.

The “D” level support is predominantly concerned with managing maintenance and support issues that have been escalated from O and I maintenance levels. A set of advanced skills by subject matter experts is required for the fulfillment of “D” level operational requirements using resources such as source codes, advanced troubleshooting, change management plus advanced application and database skills, in order to become change control design authority for software centric systems.

In the past ATNS acquired skills in hardware “D” level support at component level, however with the evolution of technologies to software-based systems, it has become ATNS strategic imperative to up-skill its human capital to be able to conduct “D” level support also for software systems. It is the objective of ATNS to build a partnership model with the successful bidder on the up skilling of ATNS staff to conduct software “D” level support, thus providing a level of self-sufficiency and independence. In line with this philosophy, ATNS will undertake the following:

- Software failure investigation and detailed fault finding;
- Software Configuration for the System; and
- Software version release integration and commissioning
- Adherence to relevant ICAO Safety Standards including ICAO Annexure 11 Chapter 3 and ICAO Doc 4444 Chapter 7, as well as ATNS Safety Standards
- Software Data Capture [e.g. log files] that will assist with the software fault analysis and software correction.

3 GENERAL INSTRUCTIONS TO BIDDERS

The Bidder shall submit all responses, diagrams, documentation and drawings according to the GENERAL INFORMATION AND INSTRUCTIONS TO BIDDER'S document and in the English language.

To assist Bidders only, each paragraph or article has been appended throughout with the letters "(M)", "(D)", "(O)" or "(I)", to indicate whether the requirement is **M**andatory, **D**esirable, **O**ptional or for **I**nformation only.

ALL RESPONSES TO THE REQUIREMENTS IN THIS DOCUMENT SHALL BE PROVIDED AS FOLLOWS:

BIDDERS SHALL RESPOND IN FULL TO EACH ITEM IN THE FORMAT PROVIDED AND REFERENCES (CHAPTER, SECTION, PAGE NUMBER, PARAGRAPH NUMBER) TO DOCUMENTS AND RELEVANT INFORMATION SUPPORTING THE RESPONSES SHALL BE INDICATED IN THE SPACE PROVIDED. THIS INFORMATION WILL BE THE **ONLY RESPONSE USED FOR THE EVALUATION AND ASSESSMENT**.

Responses, provided in the space allowed, that are not clear or inadequate or lack thereof shall be interpreted as **"Not Compliant"** even though the compliance column is declared as "Comply" and/or the Bidder's offer meets the requirement. Bidders shall ensure that each response correctly addresses the requirement stated. Responses not addressing the requirement of the specific paragraph shall be interpreted as **"Not Compliant"**.

Bidders shall declare compliance to each and every paragraph of this document, based on the paragraph classification, in the response block provided opposite the column labelled "Compliance". Bids will be evaluated as follows:

C:	fully compliant	=	2 points:
PC:	partly compliant	=	1 point;
NC:	not compliant	=	0 points.
Noted:	Noted and accepted (applicable to paragraphs marked as "I", not containing requirements)		

Bidders shall, for paragraphs declared "PC" or "NC", include a statement as to the nature of the variation and may supply additional supporting information in the space provided to demonstrate how the proposal may still meet the needs of ATNS.

Paragraphs marked "(M)", indicates that the requirement is mandatory and Bidders that do not comply with the requirement **shall** be disqualified for further evaluation.

Paragraphs marked "(D)", indicates that the requirement is desirable, and the Bidder is expected to declare their level of compliance, provide a formal response and reference supporting documents.

Paragraphs marked "(I)", indicates that the requirement is for information, however the Bidder is still expected to respond and provide information if requested. Any information gathered herein may form part of the contractual terms.

Paragraphs marked "(O)", indicates that the requirement is optional, and the Bidder may decide how to respond.

4 BIDDER/CONTRACTOR OBLIGATIONS

The Bidder shall provide a compliance statement to each specification to confirm that, if the Bidder is appointed as the Contractor, all requirements and obligations stated in this specification shall be complied with. (I)

COMPLIANCE (C/PC/NC/Noted)	
[THE BIDDER MAY INSERT A RESPONSE WHERE APPLICABLE]	

5 PHASE 1: DEVELOPMENT PHASE

During this first phase, the overall support programme and all the support elements shall be developed and documented. (I)

COMPLIANCE (C/PC/NC/Noted)	
[THE BIDDER MAY INSERT A RESPONSE WHERE APPLICABLE]	

5.1 System Performance Requirements

A. The Bidder shall provide a complete/turnkey system (including all its auxiliary equipment, that is, audio boxes, flight strip printers, footswitches, network switches, headsets, computer peripherals, displays, consoles etc.) with a system availability of 99.98% (1.75 hours total downtime), at each site, per year, during Monday – Friday; 07H00 – 19H00 basis, over the system lifespan. (D)

COMPLIANCE (C/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. The Bidder shall provide a turnkey system with a maximum of four (4) critical failures, at each site, per year, over the system lifespan. (D)

COMPLIANCE (C/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

C. The above reliability and availability figures shall exclude system downtimes due to routine preventive hardware and software maintenance. (D)

COMPLIANCE (C/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

D. In addressing all the failures of the system, the failure classifications, associated severities and correction times shall be determined using Table 4 and Table 5 respectively (in Section 10). The Bidder shall manage each of the failure classifications in order to achieve the required System performance figures above. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6 SUPPORT CONCEPT

6.1 Maintenance and Support Concept

To achieve the system performance requirements stated in both Sections 5.1 (above) and 6.4 (below), ATNS uses a maintenance and support concept that is based on a three-level approach (explained in section 2 above). The Bidder shall provide both a draft LSP document and Maintenance proposal, demonstrating how the requirements of the ATNS maintenance and support concept will be satisfied. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.2 Logistics Support Implementation Plan (LSIP)

The Bidder shall deliver a Logistics Support Implementation Plan that indicates the project schedule for all the logistics support deliverables/activities, to be implemented during phases 1, 2 and 3, as listed in **Table 1** (Section 1). All the Logistics Support deliverables shall be included in the Project Schedule/Gantt chart. These activities shall be clearly shown in both the overall Project Schedule and Work Breakdown Structure. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.3 Logistics Support Plan (LSP)

The Bidder shall deliver a Logistics Support Plan describing the support and maintenance processes that will be implemented during the ongoing maintenance of the system, throughout its lifecycle. The support and maintenance processes used during phase 3 will strictly follow this LSP, to verify the effectiveness of this plan during the PBU.

The following sections should form part of the LSP:

- RAM, Training, Spare Parts, Test Equipment, Documentation, PHS&T and Maintenance Planning (Concept, type and level) (D)

COMPLIANCE (C/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.4 Reliability, Availability and Maintainability Plan (RAMP)

A. The Bidder shall deliver a Reliability, Availability, and Maintainability Plan, describing the RAM model to be used and how the RAM studies are to be conducted. The plan shall define the verification process and the classification and definition of failures, as well as the remedial action to be taken should deviations be found. RAM Programme shall be initiated during Phase 1 and maintained throughout the life cycle of the equipment. (D)

Tasks: System Models (*Block diagrams of equipment & LRUs plus their MTBF, MTTR and MDT);* RAM Prediction; RAM Analysis and RAM Verification

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. The Bidder shall define and conduct a RAM Plan aimed at improving the supportability of the system. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

C. The Bidder shall define and conduct a RAM program/plan aimed at achieving the guaranteed and actual Reliability, Availability and Maintainability of the complete system. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

D. The RAM model shall be applicable to:

- All Hardware and Cabling
- All System Software
- Application Software
- Proprietary Software
- 3rd Party Software
- System Communication Infrastructure
- Firmware

The Bidder shall indicate which components are covered in his RAM model. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

E. The Bidder shall define under which conditions their system RAM studies are achievable. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

F. The Bidder shall provide the system-wide Reliability Block Diagrams (RBDs) for the complete system, with their relevant statistical figures, demonstration of availability calculations, and the results of their predictions, as part of their tender. The reliability predictions shall be based on actual MTBFs. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

G. The Bidder shall provide a RAM Report containing all Reliability and Availability calculations of all equipment, sub-systems and the total defined system. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

H. The Bidder shall include a RAM evaluation as part of all design reviews. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

The Bidder shall submit a Failure Modes Effects and Criticality Analysis (FMECA) or FMEA report, as per the suggested structure, but not limited to, in the

I. **Table 2** below. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

Table 2 - FMECA

Action	Output Summary
Step 1: Identify, Define and List the Possible Hardware and Software Functional Failures	List of identified possible System functional failures
Step 2: Identify and List the Potential Effects of each of the Hardware and Software Failures	List of System and subsystem Effect(s)
Step 3: Assess and rate each effect according to the criticality and consequences of its impact	Criticality assignment for each effect FMECA Table
Step 4: Assign a Probability or likelihood to each Failure Mode	Probability or likelihood assignment for each failure
Step 5: Identify and document any concerns or possible vulnerable areas of the analysis	Documented assumptions, concerns and vulnerable areas of the analysis model
Step 6 Determine the impact of failures on the cost, schedule, and/or technical performance independently or simultaneously	List of impact of failures
Step 7 Prioritize the failure modes by ranking them from the highest priority to the lowest based on the probability of occurrences and their impacts	A prioritized list of failure modes Updated and prioritized table
Step 8: Identify Corrective Actions to Eliminate or Reduce the High Probability Failure Modes	List of actions to eliminate failure modes; or documented workarounds Measures to reduce probability of failure or their impacts; Software/hardware modification to include fault protection.

6.5 Training Plan (TP) (Including provision of training)

A. Based on the ATNS support concept (Section 2), the Bidder shall prepare a Training Plan to document the training of ATNS Operator and Technical personnel. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER MAY INSERT A RESPONSE WHERE APPLICABLE]	

B. On the training plan, the Bidder shall detail the full training material and syllabi to be covered and the *"how, where and when"* of all the training courses. Training shall be provided to both the Technical Maintenance Personnel and System Operators. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

C. The training plans shall include the duration of the training courses and method of delivery. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

D. On the Training Plan, the Bidder shall stipulate minimum requirements for all the respective training courses. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.5.1 Operator Training

A. The Bidder shall provide a minimum of six (6) Operator Training courses, that is, both the Basic and Advanced Airspace Development, both the Basic and Advanced Exercise Creation and both the Basic and Advanced Pseudo Pilot courses. The Bidder shall recommend any other proposed operator training, in addition to these six courses. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. Below are the site names and student quantities to receive the minimum of six operator training courses. (D)

	Course Name	ATA	FACT	FAPE	FABL	FALE	FAOR	ST HELENA	FALA	*TOTAL*
1	BASIC - Airspace Development	8	8	6	6	6	8	6	6	***54***
2	ADVANCED/Train-The-Trainer - Airspace Development	8	8	6	6	6	8	**6**	6	***54***
3	BASIC - Exercise Creation	8	8	6	6	6	8	**6**	6	***54***
4	ADVANCED/Train-The-Trainer - Exercise Creation	8	8	6	6	6	8	**6**	6	***54***
5	BASIC - Pseudo Pilots	20	15	8	8	8	15	8	8	***90***
6	ADVANCED/Train-The-Trainer - Pseudo Pilots	20	15	8	8	8	15	**8**	8	***90***

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

C. Both the basic and advanced Airspace Development Training Courses shall cover the following (addressing varying levels of complexity), as a minimum: (D)

1. Ability to simulate:
   - All significant geographical formations and all man-made structures within the relevant airspace.
   - All flight procedures.
   - All taxiway routes.
   - All published IFR/VFR approaches.
   - Missed Approaches procedures inclusive of standard and non-standard.
   - Airfield layout including general aviation areas and all aprons, runways, taxiways and all hangars.
   - Apron pushbacks and power-outs.
   - Airfield vehicle movements for all tasks that they perform:
     - runway/taxiway inspections.
     - removal of FOD.
     - wildlife control.
     - emergency response.
     - aircraft towing.
     - aircraft escort.
   - VFR circuits i.e., all Downwinds, Base legs, Crosswinds, Final Approaches.

- Weather.
- Runway changes.
- Airfield equipment i.e., windsocks, VOR, Antennas, etc.
- Airport buildings.

2. Must be able to amend and recreate any real-world changes to any structures and formations in and around the airfield.
3. Navigation equipment/buildings. (VOR, NDB, Satellite Navigation, ILS equipment)
4. Ability to create database backups.
5. RPAS operations.
6. Pilot positions need to indicate all airspace boundaries and navigational entities used by ATC and Pilots. (ATZ, CTR, TMA, VFR routes, VFR entry/exit points, RPAS operations, navigational points i.e., roads, buildings, geographical entities)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

D. Both the basic and advanced Exercise Creation Training Courses shall cover the following (addressing varying levels of complexity), as a minimum: (D)

1. Creating, modifying and saving exercises.
2. Traffic generation – applying livery to local and international flights.
3. All aircraft must have a version with no livery (White aircraft).
4. Robust database of aircraft types.
5. Traffic control – missed approaches, turns, circuits, climb, descend, take-off, landing, missed approach, taxi, stopping aircraft, vehicle operation, tugs, aircraft under tow, landing deep (after the touchdown zone).
6. Helicopter operations
   - Overflights
   - Training (Autorotation, Hover checks, air taxi, holding)
7. Exercise back-up procedures.
8. Database management.
9. Create weather scenarios.
10. Create runway changes.
11. Create emergencies.
12. All vehicle operations.
13. Taxi paths for all aircraft that are departing, arriving or repositioning.
14. Create scheduled flights, overflights, training flights (VFR and IFR).
15. VFR traffic (fixed and rotary wing) routing according to established.
16. VFR entry/exit points.
17. VFR traffic must be able to route as instructed by ATC or as per published VFR routes.
18. Printed FPS.
19. Creation of driver sheets.

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

E. Both the basic and advanced Pseudo Pilot Training Courses shall cover the following (addressing varying levels of complexity), as a minimum: (D)

System familiarization –

1. simulator architecture and capabilities such as starting up, logging in, system status monitoring.
2. Lighting options (day/night/LVO).
3. Weather simulation (rain/ thunderstorms, reduced visibility).
4. Voice communication systems (intercom, radio).
5. Understanding the control panels, pause functions, edit functions, replay functions.
6. Role allocation – tower, ground, CLD.
7. Configuration management.
8. Basic troubleshooting.
9. Operation of pilot workstations – take-off, landing, missed approach, taxi, stopping aircraft, helicopter operations, vehicle operation, tugs, aircraft under tow.
10. Operation of radios and intercom system.
11. Managing aircraft profiles.
12. Managing databases (aircraft types/models, livery).
13. Interposition messaging.
14. Exercise playback.
15. Exercise creation.
16. FPS printing.
17. Piloting.

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.5.2 Technical Maintenance Training

A. The Bidder shall develop a comprehensive Technical Maintenance Training (both Basic and Advanced), based on the ATNS Support Concept (Section 2). In addition to the Bidder's recommended training courses, the Bidder shall provide/cover, but not limited to, the following modules as part of the syllabus: (D)

- System Architecture Training
- System Software Training
- Application Software Training
- Data and communication Model
- Database Management
- System configuration
- Initial setting up of the complete system (Hardware & Software)
- Backup and Recovery of Simulator Software and positions
- Troubleshooting and failure correction.

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. Below are the site names and student quantities to receive the minimum of three (3) Technical Maintenance training courses. The Bidder shall recommend any other proposed additional technical maintenance training, in addition to these three courses. (D)

	Course Name	**ATA**	**FACT**	**FAPE**	**FABL**	**FALE**	**FAOR**	**ST HELENA**	**FALA**	***TOTAL***
1	Basic Technical Maintenance Training	7	13	13	13	13	13	*(Included under ATA)*	*(Included under ATA)*	***72***
2	Train-The-Trainer/Advanced Technical Maintenance Training	7	13	13	13	13	13	*(Included under ATA)*	*(Included under ATA)*	***72***
3	Installation Shadowing Technical Training	7	13	13	13	13	13	*(Included under ATA)*	*(Included under ATA)*	***72***

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

C. At the above-mentioned eight sites, the Bidder shall provide a basic technical maintenance training course. This course shall satisfactorily address both the O and I maintenance levels (as indicated in Section 2). (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

D. As per 6.5.2 B, at the eight sites, the Bidder shall provide an advanced Technical Maintenance Training (comprehensive Train-The-Trainer) Course [D-level maintenance]. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

E. Installation Shadowing Technical Training – The Bidder shall provide a formal installation shadowing technical training course, during the system installation. The Bidder shall explain how installation shadowing technical training will be facilitated for this project. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.5.3 Software and Firmware Training

Training provided to technical personnel (as per 6.5.2 above), shall be at a level that they will be able to perform any setup function and all changes independent of the Supplier's assistance. Application Software and System Software training shall be provided to the level required for normal operation of the system and its upgrades during the maintenance and support phase. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.5.4 Hardware Training

Training provided to technical personnel (as per 6.5.2 above), shall address the full system architecture to the level of "O"; "I" & "D" Maintenance and shall include training, where required, for Packaging, Handling, Storage and Transportation. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.5.5 Training Requirements

A. In addition to all the training requirements, the Bidder shall also provide as an option an E-Learning training platform, to ensure effective and comprehensive training of all existing and future system Operators and Technicians. The pricing shall be indicated on sheet "G6 Options" on the pricing schedule. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. All the Advanced Training/Train-The-Trainer Courses shall be offered at the appropriate levels of complexity that will enable the trainees to provide future advanced (Train-The-Trainer) courses within ATNS. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

C. All Bidder proposed training courses shall contain theoretical and practical training, plus, provide formal competency assessments as accredited by the OEM. The Bidder shall provide all training attendees with formal training certification. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.5.6 General

A. The Bidder shall ensure that the medium of instruction, for all training courses, shall be English. The Contractor's instructor(s) shall present all the training courses in fluent comprehensible English. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. The Bidder shall provide course syllabi with Lesson Plans, Training Aids and materials stipulating the objectives, level, methodology and duration of each training. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

C. The Contractor shall provide all training aids and materials, including those for all the assessments. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

D. The Bidder shall plan for all training to take place at the eight different sites indicated above. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

E. The Contractor shall complete all relevant training before the SAT. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.6 Spares Plan (SP)

A. The Bidder shall deliver a Spares Plan detailing both the list of spare parts and consumables proposed, including their associated quantities and actual MTBF figures, for the turnkey system. The Bidder shall consider the maximum 60-day individual LRU Repair TAT requirement for all LRU's (locally and overseas sourced). (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. The Bidder shall submit a spare parts list that shall ensure that the required system performance (Sections 5.1 & 6.4) for the full simulator systems are guaranteed for 10 years. The spare parts list shall be cognisant of the number of simulators located at each of the sites. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

C. The Bidder shall provide a Spare Parts list that shall distinguish between locally and overseas sourced components/equipment. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

D. The Bidder shall provide a Spares Plan that shall identify all recommended spare parts and their respective quantities, to be stored at each site. The spares for FALA will be stored at FAOR and the spares for St Helena will be stored at the ATA. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

E. Should the PBU indicate that the Bidder's recommended spare parts and consumables are deficient, the Bidder confirms that, as a contractor, they shall supply additional new spare parts and consumables at their own cost. The system/project shall be kept in PBU until all identified deficient spare parts and consumables are delivered by the Contractor. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.7 Test Equipment Plan (TEP)

A. The Bidder shall submit a Test Equipment Plan that details the requirement, distribution and the maintenance/support of all specialised tools and test equipment, proposed for the system. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. The Bidder shall ensure that the Test Equipment Plan shall include details on the type of specialised Tools and Test Equipment; its Maintenance and Support, plus, the allocations to the different Maintenance Levels. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

C. The Bidder shall detail the calibration requirements of all their proposed Test Equipment. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL/ INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

D. The Test Equipment Plan that shall include any Built-In Test Equipment (BITE) and any other Diagnostic Software modules. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

E. The Bidder shall detail how they validate the sufficiency, capacities and quantities of their proposed Test Equipment during the PBU. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.8 Documentation Plan (DP)

A. The Bidder shall deliver a Documentation Plan defining all applicable documentation, to be delivered. The delivery of all documentation shall be completed prior to the commencement of Phase three. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. The Bidder shall provide the following documents as a minimum. (D)

- System Documentation (System Installation and Maintenance).
- Operator Documentation (Operator Handbooks).
- Hardware Maintenance (Equipment maintenance LRU replacement) documentation.
- Software and Firmware Documentation (Basic Software and Firmware, Operating system, utilities).
- Training Documentation (As per the Training Plan).

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

C. The Bidder shall provide copies of equipment, software and/or firmware technical documentation to ATNS HO and all the sites. The documentation will be in a format and quality acceptable to ATNS. All documentation shall be provided in both hardcopy and in electronic medium. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

D. The Bidder shall, prior to the commencement of the PBU, ensure that all documentation reflects the true configuration of the As-Built systems, the serial numbers of all the system LRUs must be recorded on the As-Built documents. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

E. The Bidder shall supply full documentation for the installation, connection and configuration of all hardware and software modules, and cabling for the As-build installation. As-built document shall consist (but not limited to) the following: (D)

- Training Documentation
- Equipment Specification/ Data Sheets
- Device and system verification sign-off sheets
- OEM and COTS Documentation [to be provided on all relevant equipment]
- Site configuration
- Software and Firmware configuration
- Design drawings
- Equipment Power consumptions schedules
- Cable schedule
- List of cables and markings
- Interface(s) documentation with drawings (ICD and API)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

F. The Bidder shall verify all documentation during the presentation of Technical Courses, and that such documentation shall be validated during the PBU. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

G. The Bidder shall document any changes / upgrades necessary during the PBU. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.9 Package Handling Storage and Transport Plan (PHS&TP)

A. The Bidder shall deliver a Package Handling Storage and Transport Plan that addresses the requirements for resources, processes, procedures, design, considerations, and methods to ensure that all system, equipment, and support items are preserved, packaged, handled, stored and transported properly during both the implementation and support phases of the project. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. All Packaging material shall be recyclable. The PHS&T Plan shall further address electrostatic discharge, preservation (optimal temperature & humidity levels) and UV light/heat exposure related challenges. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.10 Configuration Management Plan (CMP)

A. The Bidder shall deliver a Configuration Management Plan to identify the configuration and control actions and procedures necessary for the configuration management of the equipment, documentation, logistics resources plus Software and/or Firmware for the system during phases 1, 2 and 3. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. The CMP shall provide a formal standard procedure for addressing all engineering changes and support system changes that may be required. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

C. The CMP shall make provision for procedures to ensure that, at the end of the PBU, the backup software and/or firmware at each site, contain all the upgrades and patches implemented during the PBU. This activity or procedure is the responsibility of the Contractor and shall take the form of a configuration audit performed by the Contractor. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

D. The Bidder shall remain responsible for the system configuration management until decommissioning. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

E. Any hardware, Software and/or Firmware changes to the repaired components shall be recorded by the Bidder and ATNS shall be formally advised of the new configuration status. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

F. Towards the end of the PBU, the Bidder shall conduct an audit of the total configuration status of all system Hardware, Software and/or Firmware, inclusive of all documentation and maintenance/support plans. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.11 Total LRU Repair Costs (over the System Lifespan)

A. The Bidder shall provide the total LRU repair costs, over the complete system lifespan, using the guide on **Table 3** below. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. The Bidder shall submit a complete breakdown of all the LRU's of the system. The following information, but not limited to the list, should be contained with respect to each LRU in the list. (D)

a. The total numbers of each LRU installed
b. Each LRU MTBF figure (based on actual data)
c. Is the LRU repairable?
d. Number of possible LRU repairs during the system lifespan
e. Maximum Individual LRU Repair Cost
f. Total Repair Cost, per LRU, over system lifespan
g. Total Cost of Hardware Repairs over system lifespan

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

Table 3 – Total LRU Repair Cost Over 10 Years

Description	MTBF (Hours)	Site 1	Site 2	Site 3	Total Number Installed	Repairable (Yes/No)	Number of Possible repairs per lifespan (Based on MTBF)	Maximum Repair Cost (as at tender)	Total Repair cost (over the system lifespan) – [e.g., multiply columns H & I]
LRU 1									
LRU 2									
LRU 3									
LRU4									
TOTAL COST - HARDWARE REPAIRS OVER 10 YEARS									

6.12 System Lifespan

The required system lifecycle shall be 10 years. The Bidder shall indicate proven processes and interventions to ensure that indeed the system shall satisfy the required 10-year lifespan, whilst ensuring consistent satisfaction of the system's performance requirements (Sections 5.1 & 6.4). (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.13 Software Licenses

The Bidder shall indicate what software licenses shall be required for the system, including indicating which ones shall be issued once-off and which ones are renewable. All licenses shall be issued under the ATNS name. All software license certificates shall be delivered to ATNS before the SAT. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

6.14 Interface Control Document (ICD) and Application Program Interface (API)

The Bidder shall provide APIs and ICDs for all components of the proposed system, as per international best practices, showing all the required information. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

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7 PHASE 2: IMPLEMENTATION PHASE

The provision of the deliverables mentioned below must be provided in this phase. (I)

- Provision of Training Courses
- Delivery of all Documentation
- Delivery of Spare Parts
- Issuing of As-built documents
- Delivery of Test Equipment
- Delivery of all Software Licenses

COMPLIANCE (C/PC/NC)	
[THE BIDDER MAY INSERT A RESPONSE WHERE APPLICABLE]	

8 PHASE 3 - VALIDATION PHASE

8.1 PBU

A. The Bidder shall adhere to the complete Project PBU, which occurs during the period between the successful SAT of all systems in the project and the Final Acceptance of the entire project. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. The Bidder confirms that, during the PBU, they shall concurrently execute both the warranty and the verification of Phase 1 and 2 deliverables. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

C. The warranty shall cover all the Turnkey system repairs, and replacements of hardware including the software and firmware corrections and/or modifications. The warranty shall also cover the correction of any other system errors not detected during FAT & SAT. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

D. The Bidder shall ensure that all the Phase 1 and 2 deliverables are provided, to ATNS' satisfaction, that is, before the start of the PBU. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

E. During the PBU, the ATNS technical personnel maintain the system in accordance with Phases 1 and 2 deliverables, however, the delivered system remains the responsibility of the Contractor. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

F. All the Phase 1 and 2 deliverables shall be validated by both ATNS and the Contractor to determine whether the support system is proving effective. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

G. During the PBU, any identified deficiencies in the Phase 1 and 2 deliverables, shall be corrected at the Contractor's cost. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

H. The Bidder shall confirm that the PBU shall end when all the requirements mentioned in Phase 3 (Validation Phase) are satisfied, as determined by ATNS. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

I. The PBU, for the whole project, shall run for a minimum period 12 months. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

J. As per the related clause in Volume 1B, the PBU shall be extended, should any of the installed systems not meet the stipulated performance criteria. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

K. The system shall remain in PBU until all the PBU deliverables are supplied/performed and outstanding failures are closed. (D)

COMPLIANCE (C/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

8.2 PBU Verification

A. System Performance Verification

Regular equipment failure monthly and quarterly reports shall be provided. These reports shall be based on actual system performance (RAM figures achieved). The Contractor shall initiate remedial action where deficiencies are identified. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. Spares Verification

The list of spare parts, as proposed by the Bidder, is verified during this phase. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

C. Test Equipment Verification

The list of proposed specialized Test Equipment, as proposed by the Tenderer, is verified during this phase. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

D. PHS&T Verification

The Packaging, Handling, Storage and Transport of all spares and support material is verified during this phase, with special attention being paid to addressing electrostatic discharge, preservation (optimal temperature & humidity levels), UV light exposure, etc. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

E. Evaluation of Training effectiveness

The training received will be verified during the PBU period, if is found that the training given was not adequate, the Contractor shall retrain the personnel at its cost. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

F. Documentation Acceptance

Final acceptance of all support documentation takes place at the end of this phase. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

G. Configuration - Validation and Acceptance

Towards the end of PBU, prior to the final acceptance of the system, the Contractor shall audit the total configuration of the turnkey solution and provide a detailed configuration report. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

8.3 Updates

A. At the end of this validation period, the effectiveness and applicability of the Logistic Support Plan, which was used as a basis for the support of the System, during beneficial use, is reviewed and updated as necessary, by the Contractor. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

9 PHASE 4: APPLICATION PHASE

The duration of this phase is the economic life of the system, which is considered to be 10 years. This phase commences with the acceptance of all the elements of the Logistics Support Plan, validated during beneficial use, and the transfer of maintenance management responsibility to ATNS. (I)

COMPLIANCE (C/PC/NC)	
[THE BIDDER MAY INSERT A RESPONSE WHERE APPLICABLE]	

9.1 Application of Logistics Support Plan

The LSP compiled, updated and verified during phases 1, 2 and 3, is now used as the standard control document for the on-going support of the system. (I)

COMPLIANCE (C/PC/NC)	
[THE BIDDER MAY INSERT A RESPONSE WHERE APPLICABLE]	

10 SYSTEM FAILURE DEFINITION AND RELATED CORRECTION SERVICE LEVELS

A. The Bidder shall adhere to the failure priority/severity levels indicated on Table 4 below: (D)

Table 4 –Severity Levels

Priority Level	Description
Critical (S1)	Emergency with the highest priority, indicating severe and acute operational problems where the availability of the service or essential functionality is severely impaired. Critical impact on business such as, but not limited to: • Total outage of primary equipment • Equipment failure or significant reduction in traffic handling capacity • Prevented access to the equipment due to system failure • Severe impairment of system administration • Loss of access to recovery operations • Failure of an important feature (upgrade from Minor service) • Loss of major functionality such as inability to add needed/required services, loss of access to the equipment, inability to perform equipment backups (upgrade from Major) • Failure of redundant equipment (Upgrade from Major) • When 3 Major problems have occurred and are pending resolution, the priority level should be escalated to Critical • Priority factor of 7 for critical incidents shall apply for the purpose of calculating penalties
Major (S2)	The availability of the service is considerably restricted. Major impact or potential major impact on business such as, but not limited to:- • One server non operational • Problem threatens to escalate to Critical priority • Prevents collection of data required for the equipment. This can typically include extraction of data/statistics • Acute technical problem of primary equipment • Loss of diagnostic functionality • Significant degradation of access for recovery operations on peripherals • Significant degradation of equipment alarms, critical, major or trouble reporting • More than 1 (internal to ATNS) operational/technical position experiencing a similar SW or HW related problem. A single external client service failure due to any CSCI or any other system SW or HW failure as a result of any system related SW bug, upgrade, modification, configuration, interference, system design or baseline of the system performed/supplied by the vendor/supplier. • Priority factor of 3.5 for major incidents shall apply for the purpose of calculating penalties.
Minor (S3)	Queries and problems that are related to non-acute operational problems and important technical queries. Medium impact on the business such as, but not limited to: • Failure of non-critical warnings and alerts • Any problem deemed less significant than the ones above • Any item, including documentation that can generate procedural problems.

	• General queries. Minor impact on business such as:- • General documentation problems • Input / Output message format problems • No impact on customers or any other systems integrating to the network • Priority factor of 1.4 for minor incidents shall apply for the purpose of calculating penalties.

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. The Bidder shall adhere to the failure response times and restoration times indicated on Table 5 below: (D)

Table 5 - Service Levels (Fault restoration and resolution response times)

Priority Level	**Service cover period**	**Time to acknowledge and respond (per incident/failure)**	**Time to restore**	**Software Patch (Interim solution)**	**Software Permanent Solution time**
Critical (S1)	12 hours/day x 5 days/week x 365 days/year	20 minutes	< Total of 1.75 Hours per year. (Maximum 4 failures per year. **(a)**	1 day after submission of OEM requirements. **(b)**	6 Month, from the date of successful Patch **(c)**
Major (S2)	12 hours/day x 5 days/week x 365 days/year	1 Hour	< Total of 4 Hours per year. **(d)**	3 days **(e)**	6 Months **(f)**
Minor (S3)	Business hours (08:00 to 16:30pm, Monday to Friday) r	2 Hours.	< Total of 2 days per year. **(g)**	2 Months **(h)**	6 Months **(i)**

Notes:

- The calculation of the Response Times listed above shall only start when the Contractor/OEM has received all the required information it has requested from ATNS. The Contractor shall not be penalized for delays caused by ATNS. (I)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

11 MAINTENANCE AND SUPPORT CONTRACT REQUIREMENTS

A. **MAINTENANCE AND SUPPORT CONTRACT**: The Bidder shall provide a 10-year Maintenance and Support (Contract) proposal, as per the ATNS Support Concept (Section 2). The Maintenance and Support Phase proposal shall form part of the Volume 1B contract which will be signed by the parties and shall commence at the Final Acceptance of the entire project. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

B. **EXPLICIT INDICATION OF EXCLUSIONS**: Listed below, as requirements, are minimum maintenance and support services which are needed, therefore, the Bidder shall detail all their proposed maintenance support services in their bid. The Bidder shall explicitly emphasise the excluded maintenance support services, if any, plus the rationale for their exclusion. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

C. **SUPPORT CONTRACT PRICES**: The Bidder shall provide detailed prices of the Maintenance and Support contract proposal only in Volume 1C. During each year, the Maintenance and Support contract shall cater for quarterly invoicing in arrears, in line with Point Q (Penalties) below. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

D. **SYSTEM PERFORMANCE GUARANTEED**: The Bidder shall propose a Maintenance and Support Contract that shall guarantee that the specified System Performance Requirements, as mentioned in section 5.1 are achieved, for the complete system lifespan. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

E. **COMPREHENSIVE MAINTENANCE AND SUPPORT PROPOSAL**: The Bidder's Maintenance and Support proposal shall cater for the complete turnkey 3D Tower Simulator System. The proposal shall provide unlimited and comprehensive hardware and software (preventive and corrective) maintenance, covering the whole system, over its 10-year period. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

F. **UNLIMITED HARDWARE/LRU REPAIRS AND ASSOCIATED EXPENSES**: Where relevant, the unlimited/comprehensive hardware/LRU repairs/replacements (including all the associated costs in both directions), shall include all the following costs, that is, Shipping/Freight charges; Insurance Charges; Clearance fees; VAT charges; Customs Duties; Handling fees; and Administrative fees. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

G. **COMPREHENSIVE SOFTWARE MAINTENANCE & SUPPORT**: The exhaustive software maintenance and support proposal, shall cover all the following as a minimum; *System Software* (Utility Software, Programming Language Translators, Firmware, Operating System and Device Drivers); Application Software; Proprietary Software; Third-party Software and Database Management. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

H. **LATEST SOFTWARE VERSION RELEASES**: The Bidder shall ensure that the entire 3D Tower Simulator System shall always be equipped with the latest versions of all System Software, Application Software, Proprietary Software and third-party software, throughout its expected lifespan (10 years). (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

I. **REGULATORY SYSTEM ENHANCEMENTS**: Within the maintenance and support proposal, the Bidder shall supply ATNS with an Adaptive Maintenance, entailing the modification of the system in order to ensure that it complies with all future ICAO *Global Air Navigation Plan* (GANP) - *Aviation System Block Upgrades* (ASBU) and *Standards And Recommended Practices* (SARPS), to keep the system usable in a changing or changed environment. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

J. **RESPONSE TIMES**: For all Hardware and Software failure corrections, the Maintenance and Support Contract shall adhere to the maximum response times (Service Level Agreement) indicated in table 5 (Section 10 B above). (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

K. **LRU REPAIR TURN AROUND TIME (TAT)**: The Bidder shall confirm that, as a Contractor, they shall return each repaired LRU/hardware component, to the ATNS FAOR Central Store, within 60 calendar days of collection of the faulty one. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

L. **MID-LIFE UPGRADE OF COTS COMPUTER/IT HARDWARE**: To enable efficient IT hardware functionality over the of 10 years, the Bidder's Maintenance & Support proposal shall include the COTS IT Hardware Mid-life Upgrade. This upgrade shall cover completely all its associated activities (supply, delivery, installation, configuration, testing, and commissioning) plus the corresponding costs. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

M. **OBSOLESCENCE MANAGEMENT**: The Bidder shall provide a formal, documented Obsolescence Management Plan (OMP) that details their strategy and processes for managing obsolescence throughout the entire lifecycle of the delivered system/products, in alignment with standards such as **IEC 62402:2019**. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

N. **FAILURE CORRECTION REPORT**: The Bidder confirms that they shall provide ATNS with a failure correction report, within 30 days of each fault/failure/Error/Bug correction. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

O. **RESOURCE PROVISION**: In the event of emergencies, the Bidder shall make available, within 60 hours after ATNS request, a relevant and highly skilled technical personnel (who shall correct all reported urgent failures) to the specific ATNS site concerned. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

P. **QUARTERLY SYSTEM PERFORMANCE & LRU TAT REPORTS**: The Bidder shall ensure that the Maintenance and Support Contract caters for quarterly system performance reports plus LRU repair TAT reports. The Contractor shall ensure that Service Review Meetings shall be convened every 3 months, for the duration of the maintenance support contract. (D)

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

Q. **PENALTIES**: The Bidder confirms that should they contravene the LRU REPAIR TAT (**Section *11.J.*** above) and/or Service Levels (**Section *10.B.*** above), ATNS shall impose penalties as indicated below. (D)

HARDWARE MAINTENANCE PENALTIES

If the individual LRU Repair TAT(s) contravene/exceed 60 calendar days, the total number of days exceeded (for all LRUs in contravention of the 60 calendar days target) shall be calculated. This calculation shall be for a measurement period of three (3) months (a quarter of a year). The Contractor's quarterly hardware support charges shall be reduced by an amount equal to Phw, as per the following formula:

Phw = (Σm/TAT) X 0.1 X Quarterly Payment
Where,

Phw = Penalty due to hardware [Currency on the invoice]
m = Total Repair Time for each LRU that exceeds the TAT (e.g., if TAT = 68 days, then m = 8)
TAT = 60 days
0.1 = constant
Quarterly Payment = Amount payable in a three-month period

SOFTWARE MAINTENANCE PENALTIES

In the event of the Contractor not satisfying the Service Levels (**Section *10.B.*** above), the Contractor shall be liable for penalties.

The penalty (if applicable) shall be calculated per quarter. The Contractor's quarterly software support charges shall be reduced by an amount equal to Psw, as per the following formula:

Psw = [({ Σ(a) + Σ(b) + Σ(c) + Σ(d) + Σ(e) + Σ(f) + Σ(g) + Σ(h) + Σ(i) }/ 2191.5) X Priority Factor X Quarterly Payment]

Where,
Psw = Penalty due to software [Currency on the invoice]
Σ = Sum of each of the Service Levels per quarter

(a) to (i) =The Service Levels [Hours] as defined in table 5 under section 10 B.
2191.5 = Total hours in three months/quarter/91.31 days
Quarterly Payment = Amount payable in a three-month period

The calculation for software penalties (Psw) is only applicable for cases where any of the Service Levels are exceeded. Each exceedance by either one Minute or Hour or Day or Month shall be equally deemed to be one (1) unit.

TOTAL PENALTY
P = Psw + Phw
Where P is equal to the total penalty per quarter.

COMPLIANCE (C/PC/NC)	
[THE BIDDER SHALL INSERT FULL RESPONSE FOR EVALUATION HERE]	
[THE BIDDER SHALL INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]	

---------- END OF VOLUME 4----------