

AIR TRAFFIC AND NAVIGATION SERVICES COMPANY SOC. LTD



REQUEST FOR PROPOSAL: ATNS/RFP06/06/2026/27/TPG_CNS PLANNING TOOL

APPOINTMENT OF A SERVICE PROVIDER FOR THE SUPPLY, DELIVERY, INSTALLATION AND COMMISSIONING AND 10 YEAR SUPPORT OF A COMMUNICATIONS, NAVIGATION AND SURVEILLANCE (CNS) PLANNING TOOL

Volume 1A Appendix B

TECHNICAL SPECIFICATIONS, PROJECT MANAGEMENT AND LOGISTIC SUPPORT

September 2026

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TABLE OF CONTENTS

1	GENERAL INSTRUCTIONS TO BIDDERS	4
2	INTRODUCTION	4
2.1	Background.....	4
2.2	Scope of Work	4
3	CNS PLANNING TOOL FUNCTIONS	5
3.1	General Requirements.....	5
3.2	CNS Planning Tool Capability	5
3.3	Simulation Requirements.....	5
3.4	Simulation Analysis.....	7
3.5	Network Analysis	7
3.6	Obstacle Analysis	7
3.7	Geographical Data	8
3.8	CNS Planning Tool Configuration.....	9
3.9	CNS Planning Tool Database.....	9
3.10	CNS Planning Tool Interaction	10
3.11	CNS Planning Tool Output	11
4	CNS PLANNING TOOL IMPLEMENTATION.....	11
4.1	CNS Planning Tool Deployment and Software.....	11
4.2	Data Integrity	12
5	NON-FUNCTIONAL.....	12
5.1	Dependencies	12
5.2	Scalability	13
6	IT REQUIREMENTS.....	13
6.1	Hosting and Deployment Model	13
6.2	Virtualisation and Hypervisor Support	13
6.3	Supplier-Hosted (Cloud) Requirements.....	13
6.4	Operating System and Platform Compatibility.....	13
6.5	Endpoint and Platform Security	14
6.6	Cloud Security (Supplier-Hosted)	14
6.7	Identity and Access Management	14
6.8	Backup, Recovery, and Availability	14
6.9	Vendor Responsibilities (IT Scope)	14
7	PROJECT MANAGEMENT AND SYSTEM ENGINEERING	15
7.1	Project Management Requirements	15
7.2	Systems Engineering Requirements	15
8	ENVIRONMENTAL AND SUSTAINABILITY REQUIREMENTS	15
9	LOGISTIC SUPPORT REQUIREMENTS	15

9.1	Reliability	15
9.2	Logistic	16
9.3	Warranty	16
9.4	Documentation	16
9.5	Training	16
9.6	Track Record	16
9.7	CNS Planning Tool Performance	17

ABBREVIATIONS AND ACRONYMS

ADS-B	Auto Dependent Surveillance-Broadcast
AGL	Above Ground Level
ANSP	Air Navigation Service Provider
ASCII	American Standard Code for Information Interchange
ASL	Above Sea Level
ATNS	Air Traffic and Navigation Services Company SOC Ltd
CNS	Communications, Navigation and Surveillance
COTS	Commercial Off The Shelf
CSV	Comma Separated Values
CVOR	Conventional VHF Omnidirectional Range
DAT	Digital Audio Tape
DEM	Digital Elevation Model
DME	Distance Measuring Equipment
DVOR	Doppler VHF Omnidirectional Range
DTM	Digital Terrain Model
EMC	Electromagnetic Compatibility
EMI	Electromagnetic Interference
GBAS	Ground Based Augmentation System
GSM	Global System for Mobile Communications
GUI	Graphical User Interface
HF	High Frequency
ILS	Instrument Landing System
KML	Keyhole Markup Language
KMZ	Keyhole Markup language Zipped
PDF	Portable Document Format
PSR	Primary Surveillance Radar
RF	Radio Frequency
SOF	South African Obstacle File
SQL	Structured Query Language

SSR	Secondary Surveillance Radar
VHF	Very High Frequency
WAM	Wide Area Multilateration
WGS84	World Geodetic System 1984
XML	Extensible Markup Language

CNS PLANNING TOOL REPLACEMENT SPECIFICATIONS

1 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.

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

BIDDERS SHALL RESPOND IN FULL TO EACH ITEM AND REFERENCES (CHAPTER, SECTION, PAGE NUMBER, PARAGRAPH NUMBER) TO DOCUMENTS AND RELEVANT INFORMATION SUPPORTING THE RESPONSES SHALL BE INDICATED.

Responses that are not clear or inadequate, or the lack thereof shall be interpreted as **“Not Compliant”**. 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”**.

2 INTRODUCTION

2.1 Background

Air Traffic and Navigation Services SOC Ltd (ATNS) procured and acquired a CNS (Communications, Navigation and Surveillance) planning tool in the 2009/2010 financial year.

2.2 Scope of Work

The scope of the project is to supply and install a CNS planning tool for the purpose of simulating the signal coverage and performance of communication, navigation and surveillance infrastructure within the aviation sphere as a replacement for the existing planning system. The tool should furthermore be able to analyse and calculate the interference from external obstacles on the CNS facilities.

The scope of the project further includes but is not limited to:

1. Hardware deployment,
2. The training of ATNS staff; and
3. Support and maintenance of the system throughout its 10-year lifecycle.

3 CNS PLANNING TOOL FUNCTIONS

3.1 General Requirements

- A. The default language for operating the software shall be English.
- B. The supplier of the CNS planning tool shall be required to provide proof of the accuracy of the simulations by providing actual coverage measurements compared to the simulated coverages prediction.
- C. The preference will be for the CNS planning tool to be commercially off the shelf (COTS); however, it is not a mandatory requirement.
- D. The CNS planning tool shall cater for a light or transportable version to allow resources to perform coverage and performance calculations out of the office environment and on a standard office laptop.
- E. The Bidder is required to submit and present the capability of the simulation tool through a demonstration video. The purpose of the demonstration video is to show on a high level the functionality and capability of the planning tool.

3.2 CNS Planning Tool Capability

- A. The CNS planning tool shall be capable of performing the following, at a minimum:
 - i. Reports generation for analysed networks and systems or technologies.
 - ii. CNS facilities configuration
 - iii. CNS database management
 - iv. Coverage analysis for CNS facilities
 - v. CNS network analysis
 - vi. Obstacle evaluation
 - vii. Electromagnetic Interference (EMI) and Electromagnetic Compatibility (EMC)
 - viii. Signal multipath prediction
 - ix. Wind farm impact evaluation

3.3 Simulation Requirements

- A. The CNS planning tool shall simulate the coverage and predict the performance of radio frequency (RF) facilities.
- B. The CNS planning tool shall simulate the coverage and performance of the CNS facilities based on the parameters and antenna patterns as defined by ICAO, SACAA, ITU and the system original equipment manufacturer. The tool will allow ATNS to modify these system settings and parameters.
- C. The CNS planning tool shall be capable of simulating the coverage and performance of ATNS CNS facilities including:
 - a. Communication
 - Very High Frequency (VHF) communication

- High Frequency (HF) communications
 - b. Navigation
 - Instrument Landing System (ILS)
 - Conventional VHF Omnidirectional Range (CVOR)
 - Doppler VHF Omnidirectional Range (DVOR)
 - Distance Measuring Equipment (DME)
 - VHF Direction Finder (VDF)
 - c. Surveillance
 - Primary Surveillance Radar (PSR)
 - Secondary Surveillance Radar (SSR)
 - Multilateration/Wide Area Multilateration (WAM)
 - Auto Dependent Surveillance-Broadcast (ADS-B)
 - d. Other
 - Microwave links
 - Mobile technology (e.g. Global System for Mobile Communications (GSM) etc.)
- D. It will be advantageous if the CNS planning tool can also simulate the coverage and performance of the following technologies:
- GNSS (Global Navigation Satellite System)
 - GBAS (Ground Based Augmentation System)
 - SBAS (Space Based Augmentation System)
 - Space Based ADS-B
 - SATCOM
 - Passive radar systems
- E. The CNS planning tool shall cater for the coverage and performance calculation of facilities within the South African and the African continent.
- F. The CNS planning tool shall be capable of simulating the coverage and performance of the full ATNS network.
- G. The CNS planning tool shall cater for coverage and performance calculations based on a single facility, multiple facilities and total network selection.
- H. The CNS planning tool shall cater for different resolution and accuracy options in the coverage and performance calculations to allow for initial, interim and final analysis scenarios.
- I. The software shall provide the capability to highlight and visualise areas or regions where RF signals overlap as a result of a predicted coverage for a particular setup of base stations.
- J. The CNS planning tool shall be capable of performing RF signal coverage predictions for a facility at various altitudes or flight levels.
- K. The CNS planning tool shall cater for the required elevation or altitude reference to be selectable as either Above Sea Level (ASL) or Above Ground Level (AGL).

- L. The effect of obstacles or obstructions on the radiated RF signal from a facility shall be indicated on the RF signal coverage maps. This will assist in distinguishing areas of good RF signal coverage from those of bad RF signal coverage.

3.4 Simulation Analysis

- A. The CNS planning tool shall provide the capability to define a coverage area that a facility or facilities are required to cover.
- B. The CNS planning tool shall provide the capability to compare the defined coverage area and the calculated or predicted coverage area.
- C. The CNS planning tool shall provide the capability to measure the distance from the facility to any point on the facility's radiated RF signal coverage (as calculated or predicted).
- D. The CNS planning tool shall provide the ground elevation profile from the facility to any point on the facility's radiated RF signal coverage (as calculated or predicted).
- E. The CNS planning tool shall offer the capability to save and print RF signal coverage maps as an image or portable document format (PDF).
- F. The CNS planning tool shall offer the capability for coverage maps to be exported to Keyhole Markup Language (KML) / Keyhole Markup language Zipped (KMZ) files.

3.5 Network Analysis

- A. The CNS planning tool shall provide the capability to perform network analysis.
- B. The CNS planning tool shall provide the capability to plan and design a network within the aviation disciplines of:
 - Communication;
 - Navigation and;
 - Surveillance.
- C. The CNS planning tool shall measure and display the potential accuracy of a designed network.
- D. The CNS planning tool shall provide the capability to generate a network coverage diagram for a designed network.
- E. The CNS planning tool shall be capable of identifying redundancy inherent to a designed network.
- F. The CNS planning tool shall cater for frequency interference calculations, network planning and optimization.

3.6 Obstacle Analysis

- A. The CNS planning tool shall cater for obstacles to be created in specified geographical locations.
- B. The CNS planning tool shall provide the capability to define obstacles. Definition of obstacles means that a user will be able to set properties of developments or potential sources of

obstruction (like buildings, masts, plantation, wind farms, etc.). Defined obstacles shall be distinguishable from CNS facilities and other software objects.

- C. The obstacles shall include but not limited to:
- Wind turbines
 - Solar installations
 - Buildings,
 - Towers / masts
 - Power lines
 - Etc.
- D. The CNS planning tool shall allow for the analysis and calculation of the interference of the obstacles created on the ATNS CNS infrastructure, the impact on RF signal coverage and system performance.
- E. The CNS planning tool shall provide the capability to perform EMI and EMC analysis.
- F. The CNS planning tool shall provide the capability to perform multipath impact analysis.
- G. The CNS planning tool shall be capable of performing wind-farm impact assessment and obstacle evaluations for single and multiple wind turbine installations.
- H. The CNS planning tool shall incorporate the concepts of reflection, refraction, diffraction and climatic interference when performing obstacles analysis.

3.7 Geographical Data

- A. The CNS planning tool shall incorporate the latest geographical data (maps) for South African and the African continent, including Madagascar and all island territories.
- B. The geographical data shall cater for a resolution of at least 1m for South Africa and at least 25m for the other territories.
- C. The CNS planning tool and the support and maintenance contract should cater for regular (3 to 5 year) updates of the geographical data (maps).
- D. The geographical data shall be used for the simulation and analysis function as well as for visualization purposes and should therefore present different types of map information (e.g. terrain, satellite, hybrid etc.).
- E. The CNS planning tool should allow for the accessibility of individual countries' geographical data.
- F. The geographical data shall be easily accessible and should not require special programming skills to load the data into the CNS planning tool environment.
- G. The CNS planning tool shall, as a minimum, utilize the World Geodetic System 1984 (WGS84) coordinate system as reference for mapping purposes.
- H. The CNS planning tool shall support the import of Digital Terrain Model (DTM) files (.dtm) and GeoTIFF files (.tif), enabling the integration of South African National Geospatial Information datasets for use in terrain modelling and coverage analysis.
- I. The CNS planning tool shall be capable of importing and integrating the South African Obstacle File (SOF), provided in CSV format (.csv), to support obstacle-aware modelling

and analysis. The tool shall be able to ingest the obstacle data, interpret geographic coordinates and elevation attributes, and incorporate the information into coverage simulations, terrain analysis, and CNS planning functions.

3.8 CNS Planning Tool Configuration

- A. The CNS planning tool shall provide the capability to configure a facility.
- B. The CNS planning tool shall allow facilities to be moved and duplicated.
- C. A user shall be provided with an option to delete or erase a facility.
- D. Parameters of facilities shall include, as a minimum the following:
 - i. Geographical location
 - ii. RF
 - iii. Radiation power
 - iv. Antenna type, gain, polarity and radiation pattern
 - v. Modulation type
 - vi. Site elevation above ground
 - vii. Facility name and identification
- E. The CNS planning tool shall provide the capability to configure a facility as being operational (active) or non-operational (non-active).
- F. The CNS planning tool shall provide the capability to identify a facility through an identification code and/or name and associated icon.
 - a. This identification code and/or name and Icon shall be visible on the visualization environment of the CNS planning tool.
 - b. The user shall be given the option to display the identification code and/or name.

3.9 CNS Planning Tool Database

- A. The CNS planning tool shall be capable of storing all the CNS facilities and associated parameters and settings.
- B. The CNS planning tool shall be capable of storing all the obstacles defined and associated parameters and settings.
- C. The CNS planning tool shall cater for the import and export of the facilities/equipment database to and from Microsoft Excel, SQL database, KML/KMZ files and XML files.
- D. The CNS planning tool shall cater for the saving of the coverage and performance outcome for future reference or presentation.
- E. The CNS planning tool shall include a GIS toolkit and cater for cartographic data from various sources.
- F. Cartographic data, digital elevation models, geographical data and any other map data required to calculate and predict the signal propagation in space, shall be provided with the planning tool.
 - a. The data shall be to a resolution (see paragraph 3.7 B) applicable to the location to perform an accurate simulation.

- G. It shall be possible for a user to create a project with associated facilities.
- H. It shall be possible for the user to save the project.
- I. A created database shall be compatible with Microsoft excel, Structured Query Language (SQL) and Extensible Markup Language (XML). This means that the CNS planning tool shall be able to import and export data from and to a Microsoft excel file, SQL database and XML file.
- G. The CNS planning tool shall cater for a database that will accommodate at least the following:
 - i. Various technologies
 - ii. CNS facilities and their parameters or settings
 - iii. Various antennas and their radiation patterns
 - iv. Various obstacles
 - v. Coverage maps
 - vi. User profiles and associated user profile data
- H. The CNS planning tool shall provide the capability to create, save and delete a facilities database.
- I. The CNS planning tool shall include the option to password protect or encrypt any database or sensitive data elements (e.g., passwords).

3.10 CNS Planning Tool Interaction

- A. The CNS planning tool shall incorporate an interactive graphical user interface (GUI). This means that it shall allow a user to make selections, change parameters and have access to various components of the CNS planning tool.
- B. The CNS planning tool shall offer options for a user to modify system settings and parameters of various CNS planning tool components.
- C. The CNS planning tool shall allow a user to customize the GUI (visualization environment) and any other CNS planning tool customizable objects as per their preference.
- D. The CNS planning tool shall cater for standard facility manipulation in terms of creation, deletion, moving, duplication etc.
- E. Predicted or calculated RF signal coverage shall be presented graphically on a map.
- F. The CNS planning tool shall report on
 - i. Coverage results conducted for CNS facilities
 - ii. Analysis made for a designed network and an optimised network
 - iii. Impact of obstacles (defined or natural) on CNS facilities.
 - iv. All measurements and calculations performed.
- G. The CNS planning tool shall present an error message on any inconsistent or invalid parameters detected.
- H. The CNS planning tool shall present an error message on any faults, errors and bugs that are inherent to the CNS planning tool or the CNS planning tool's prediction model.

- I. The CNS planning tool shall be capable of importing and exporting the following file formats, at minimum:
 - i. Digital Audio Tape (DAT)
 - ii. Text
 - iii. Comma Separated Values (CSV) and/or Microsoft excel format
 - iv. Image files
 - v. American Standard Code for Information Interchange (ASCII)
 - vi. KML/KMZ format.
- J. The CNS planning tool shall cater for the conversion between various file types or formats that is being supported and shall ensure that the integrity of data is maintained during the conversions.
- K. The CNS planning tool shall provide the capability to save and discard modifications made to parameters, designs and other software objects.
- L. The CNS planning tool shall provide an option to undo modifications to defaults or original states/settings.
- M. The CNS planning tool shall provide short cuts to frequently used functions. The CNS planning tool should provide the capability for users to set up their own shortcuts.

3.11 CNS Planning Tool Output

- A. The CNS planning tool shall display and present the calculated signal strength of the radiated RF signal in space as per the coverage prediction of the facility or network of facilities.
- B. The coverage and performance simulation outcome shall be presented graphically and include the signal strength in space. It is preferable that the tool provide three-dimensional viewing capabilities to allow spatial analysis of coverage and performance.
- C. The CNS planning tool shall cater for the generation of reports and the export to a text file and Portable Document Format (PDF).
- D. The CNS planning tool shall cater for the export of the coverage and performance outcome as an image or PDF to be imported in other reports.
- E. The CNS planning tool shall cater for the export of the facility and/or network coverage (signal in space coverage) to KML/KMZ files.

4 CNS PLANNING TOOL IMPLEMENTATION

4.1 CNS Planning Tool Deployment and Software

- A. The CNS planning tool implementation and deployment shall cater for a minimum of six multiple, concurrent users.
- B. The CNS planning tool shall be deployed at ATNS premises in a server environment with VM firmware.
- C. The CNS planning tool shall cater for the option of deployment in a cloud-based environment.

- D. The CNS planning tool shall have a Human Machine Interface (HMI) that is intuitive to guide the user in operating the system.
- E. The CNS planning tool shall be deployed with all required licences.
- F. The deployment shall cater for at least six workstations. Four at the ATNS head office, one at the OR Tambo operational complex and one at the Cape Town operational complex.
- G. The cost of deployment of one workstation at each of seven (7) additional locations (Bloemfontein, Kimberley, Upington, George, East London, Port Elizabeth and La Mercy operational complex) shall be included as an option. This shall include all required hardware, software and licenses, and the associated support and maintenance services.
- H. The workstation performance and specifications shall not be a limiting factor to the overall CNS planning tool system performance.
- I. The CNS planning tool shall allow multiple users to perform simulations simultaneously.
- J. The CNS planning tool software shall be provided with a formal OEM Software Assurance commitment for a minimum period of ten (10) years from the date of system acceptance. This assurance shall guarantee the continued maintainability, security and operational support of the software, including the management of defects, security vulnerabilities, and compatibility with supported platforms throughout the assurance period.

4.2 Data Integrity

- A. The CNS planning tool shall incorporate a diagnostic function that checks for errors, faults and flaws in data and the CNS planning tool software itself.
- B. The CNS planning tool shall incorporate a data recovery function that will ensure that in the event of a forced shut-down or unforeseen interruption, the CNS planning tool shall be capable of restoring the previous session of a user.
- C. The CNS planning tool shall be capable of managing, tracking and reporting changes or modifications.
- D. A user shall be alerted of any software or data anomalies, warnings and faults.
- E. The CNS planning tool shall provide the capability to detect and, visibly and audibly give awareness to a user of any wrongly specified parameters or invalid parameters.

5 NON-FUNCTIONAL

5.1 Dependencies

- A. All dependencies of the CNS planning tool that enables the software to be operational or functional shall be provided. As a minimum the following shall be provided:
 - i. The minimum amount of operating system memory required by the CNS planning tool;
 - ii. Processing power (Central Processing Unit) required;
 - iii. The CNS planning tool's hard drive space needed;
 - iv. Compatible operating system; and
 - v. Other dependencies (e.g. virtual server, applications/utilities and internet connection).

5.2 Scalability

- A. The successful supplier shall advise on the scalability of the CNS planning tool. Scalability as stated means the expansion or improvement of CNS planning tool functionalities.

6 IT REQUIREMENTS

6.1 Hosting and Deployment Model

- A. The CNS Planning Tool shall support deployment in either an on-premises environment or a cloud-based (supplier-hosted) environment.
- B. The CNS Planning Tool shall support deployment in both production and non-production environments.

6.2 Virtualisation and Hypervisor Support

- A. The CNS Planning Tool shall support deployment on virtualised infrastructure.
- B. The CNS Planning Tool shall be fully compatible with VMware hypervisor platforms.
- C. The CNS Planning Tool shall be fully compatible with Huawei DCS hypervisor platforms.
- D. The bidder shall provide documented confirmation of hypervisor compatibility and support.

6.3 Supplier-Hosted (Cloud) Requirements

- A. The CNS Planning Tool supplier shall be responsible for the complete hosting stack, including compute, storage, networking, and virtualisation layers.
- B. The CNS Planning Tool supplier shall ensure the hosting environment meets enterprise-grade availability, performance, and security standards.
- C. The CNS Planning Tool supplier shall clearly specify data residency, including the physical hosting location of ATNS data.

6.4 Operating System and Platform Compatibility

- A. The CNS Planning Tool shall support enterprise-grade operating systems suitable for both on-prem and cloud deployments.
- B. The CNS Planning Tool shall specify supported operating systems, versions, and patch requirements.
- C. The CNS Planning Tool shall support deployment as virtual machines on supported hypervisors.
- D. The successful service provider should ensure that the CNS Planning Tool software is always up to date with the latest patches.

6.5 Endpoint and Platform Security

- A. The CNS Planning Tool shall be fully compatible with SentinelOne Endpoint Protection.
- B. The CNS Planning Tool shall not disable or interfere with SentinelOne agents or policies.
- C. The CNS Planning Tool shall support secure system hardening aligned to enterprise IT security standards.

6.6 Cloud Security (Supplier-Hosted)

- A. Where supplier-hosted, the CNS Planning Tool shall include cloud security controls as part of the service offering.
- B. The CNS Planning Tool supplier shall provide network security, including firewalling and traffic control.
- C. The CNS Planning Tool supplier shall implement encryption of data at rest and in transit.
- D. The CNS Planning Tool supplier shall provide security monitoring, logging, and incident response capabilities.

6.7 Identity and Access Management

- A. The CNS Planning Tool shall support role-based access control (RBAC).
- B. The CNS Planning Tool shall support integration with Active Directory and/or LDAP.
- C. The CNS Planning Tool shall provide audit logging of authentication, access, and administrative actions.

6.8 Backup, Recovery, and Availability

- A. The CNS Planning Tool shall support backup and restore mechanisms.
- B. Where cloud-hosted, backups shall be managed by the supplier in accordance with agreed retention periods.
- C. The CNS Planning Tool shall support defined RPO and RTO requirements.
- D. The CNS Planning Tool shall support high availability configurations, where applicable.

6.9 Vendor Responsibilities (IT Scope)

- A. The CNS Planning Tool supplier shall provide deployment, hosting, and architecture documentation.
- B. The CNS Planning Tool supplier shall provide hypervisor compatibility confirmation for VMware and Huawei DCS.
- C. The CNS Planning Tool supplier shall provide support and maintenance SLAs covering platform and hosting layers.
- D. The CNS Planning Tool supplier shall support ATNS during security reviews and audits.

7 PROJECT MANAGEMENT AND SYSTEM ENGINEERING

7.1 Project Management Requirements

- A. A schedule detailing all project activities, articulating the supplier's understanding of the project scope and deliverables, shall be provided.
- B. The successful supplier shall be responsible for management of the project schedule, project risk and project quality, as well as all project related communications.
- C. The Project Management Plan should address at least the following deliverables.
 - Project Management
 - Project Delivery Schedule and Scope Management
 - Resource Management
 - Risk Management
 - Quality Management
 - Communications Management
 - Installation, Transitioning and Commissioning

7.2 Systems Engineering Requirements

- A. Systems engineering should include the testing and acceptance criteria.

8 ENVIRONMENTAL AND SUSTAINABILITY REQUIREMENTS

- A. The environmental requirements should address at least waste handling and disposal of hardware.

9 LOGISTIC SUPPORT REQUIREMENTS

- A. The logistic support should address at least the following deliverables.
 - Maintenance and software support contract
 - Training
 - Documentation
 - Warrantee and Period of Beneficial Use (PBU)

9.1 Reliability

- A. The CNS planning tool confidence level shall be > 98%. This sets the boundary for the margin of error for the comparison of the CNS planning tool's prediction model results with the real world.
- B. The CNS planning tool shall perform the functions stated herein without experiencing failure or crashing. However, should a failure occur the CNS planning tool shall be capable of capturing and reporting the cause of such failure.

9.2 Logistic

- A. Full details on the software licensing structure and implementation shall be provided.
- B. The successful supplier shall indicate the downtime for upgrading or incorporating new or improved functions into the CNS planning tool.
- C. The successful supplier shall also advise on the turnaround time for implementation of bug fixes and upgrades.
- D. ATNS will negotiate a support contract with the successful supplier. Thus, the successful supplier shall provide a quote for a support contract for consideration by ATNS.
- E. To enable efficient CNS planning tool hardware functionality over a period of 10 years, the Bidder's support proposal shall include a COTS hardware upgrade or replacement component. This upgrade or replacement shall comprehensively cover all associated activities and corresponding costs, including planning, acquisition, supply, delivery, decommissioning of the existing hardware, installation of the new hardware and integration of existing software, configuration, testing, transition, and commissioning of the equipment.

9.3 Warranty

- A. A full warranty of one year to account for any software defects, faults, errors or bugs shall be provided.
- B. The warranty period shall commence after an acceptance of the CNS planning tool by ATNS.

9.4 Documentation

- A. All documentation (including training manuals) that will assist in advancing the understanding and knowledge of the CNS planning tool shall be provided by the supplier.

9.5 Training

- A. Training in the maintenance, support and operation of the CNS planning tool shall be provided for a minimum of 12 ATNS personnel.
- B. The deliverables shall include all documentation necessary for the maintenance, support and operation of the CNS planning tool.
- C. A support and maintenance contract to cover enhancements, upgrades and bug fixes is required.
- D. Training shall be provided, at ATNS head office, to users of the CNS planning tool. The supplier shall advise on training packages that can be offered.

9.6 Track Record

- A. The CNS planning tool shall be as far as possible COTS. This means that the CNS planning tool required will not have to be developed, however, it shall be already operational and in

use by Air Navigation Service Providers (ANSPs) and Telecommunications Service Providers.

- B. The supplier is required to provide their CNS planning tool's user footprint. The user footprint or reference shall be provided in the form of client name and contact details.

9.7 CNS Planning Tool Performance

- A. The CNS planning tool's response time to commands, clicks and selections shall not be more than 2 seconds.