AIR TRAFFIC AND NAVIGATION SERVICES SOC LTD

APPOINTMENT OF A SERVICE PROVIDER TO PROVIDE TECHNICALLY DETAILED PROPOSAL ON A WIDE AREA NETWORK (WAN) FOR THE IMPLEMENTATION OF WIDE AREA MULTILATERATION (WAM) SURVEILLANCE TECHNOLOGY WAM2 NETWORK DESIGN SOLUTION SECTOR 2&3

REQUEST FOR PROPOSAL: ATNS/ENG/RFP011/2024/25/WAM NETWORK THABAZIMBI

May 2024

VOLUME 2, 3 and 4

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The participants shall bear all costs incurred by him/her in connection with the preparation and submission of his information and supporting documents. ATNS will in no case be responsible for payment to the participants for these costs.

TABLE OF CONTENTS

1 Introduction

1.1 Company Background

The Air Traffic and Navigation Services (ATNS) Company of South Africa is the sole provider of air traffic management, communication, surveillance, navigation, training and associated services within South Africa. ATNS manages 10% of the world's airspace.

Standing strong with over 1200 employees, ATNS strives to continuously provide safe airspace, orderly, expeditious and efficient management of Air Traffic Management services. The company operates at 21 aerodromes within the country, including OR Tambo, Cape Town and King Shaka International Airports. The airspace over which ATNS exercises jurisdiction covers continental Southern Africa (Two FIRs) and adjoining oceanic areas (Oceanic FIR). Beyond the coastal borders of the country this airspace extends westwards (into the Atlantic Ocean) to 10°W longitude, eastwards (into the Indian Ocean) to 75°E longitude, and southwards along these meridians of longitude to the South Pole (excluding the Mauritius FIR which extends to 45°S) as depicted in figure 1 below.

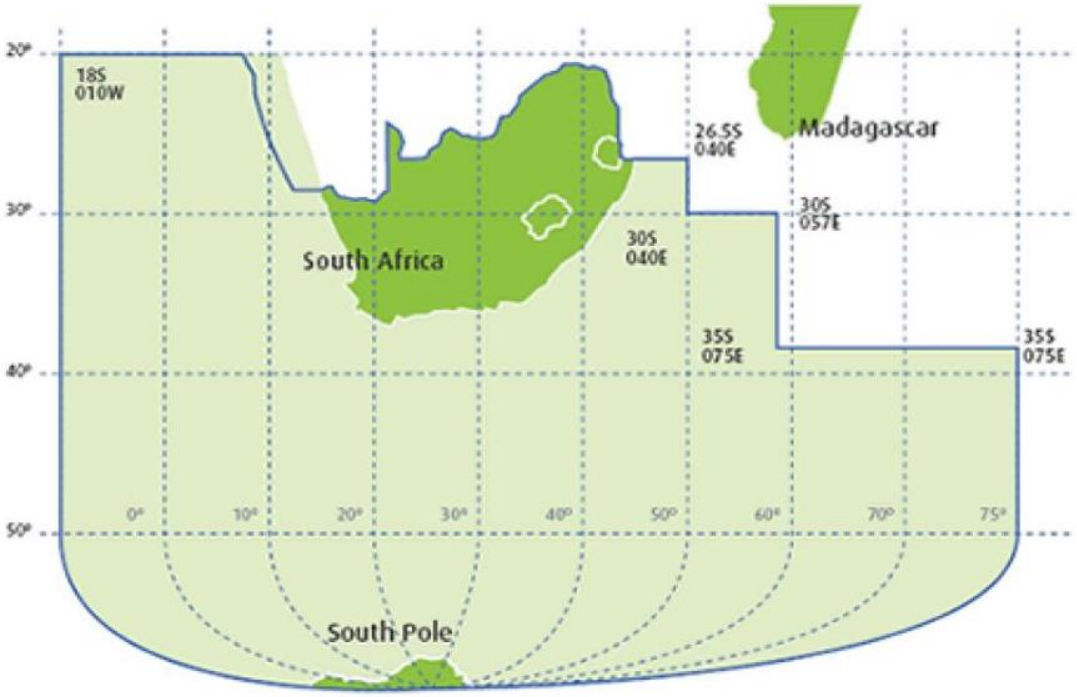

Figure 1 - Presentation of Airspace over which South African ATNS exercises jurisdiction

In the rest of the African Continent, ATNS provides amongst others the Aeronautical Satellite Communication (VSAT) networks. This service interconnects more than 33 states in Africa and The Middle East. Other services include ATS and technical training, WGS 84 surveys, airspace design, AIP documentation, billing and consultancy services.

1.2 NATIONAL WAM EXPANSION PROJECT BACKGROUND

Wide Area Multilateration (WAM) is a cooperative aircraft surveillance technology based on the same time difference of arrival principal that is used on an airport surface multi- lateration (MLAT) system. WAM is a technique where several ground receiving stations listen to signals transmitted from an aircraft; the aircraft's location is mathematically calculated -- typically in two dimensions, with the aircraft providing its altitude. Aircraft position, altitude and other data are ultimately transmitted, through an Air Traffic Control automation system, to screens viewed by air traffic controllers for separation of aircraft. The WAM system ,can be interfaced to terminal or en-route automation systems. Figure 2 below demonstrates the operation of the WAM system.

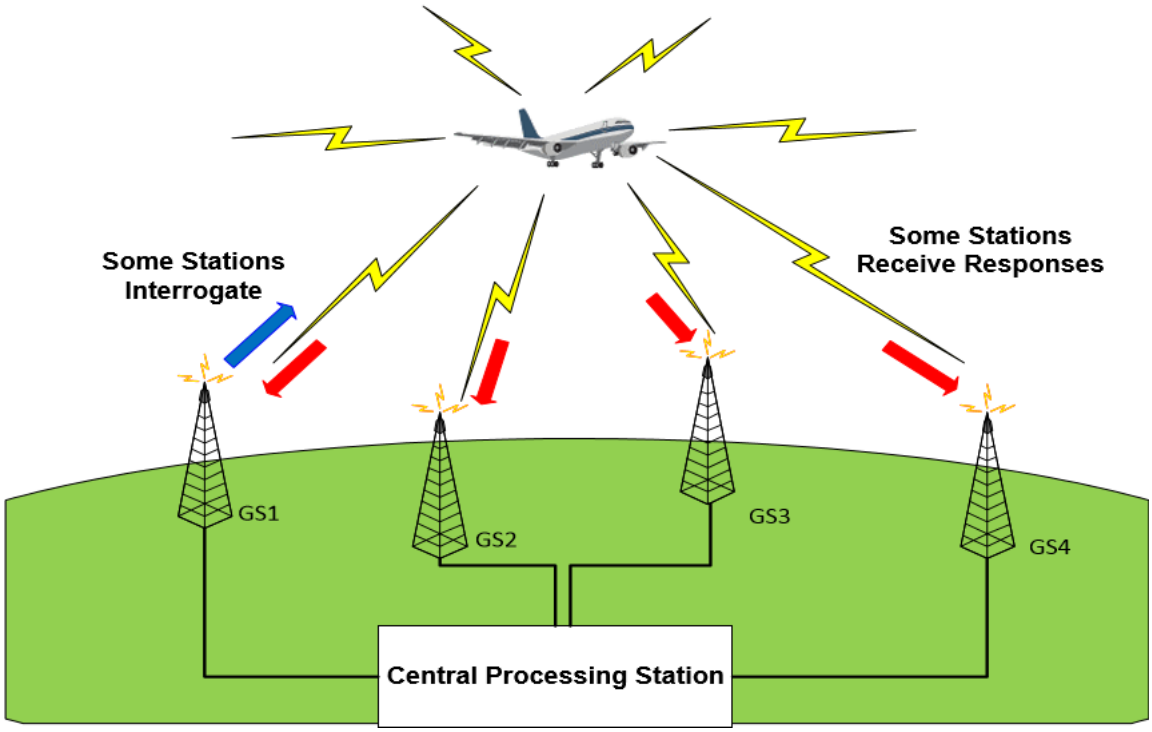

Figure 2 - Demonstration of WAM system

The South African Wide Area Multilateration (WAM) system consist of 94 (ninety-four) remote ground stations that need to be connected via a wide area network link to the central processing server site located at Johannesburg OR Tambo International Airport (Air Traffic Control Centre). The ground stations are classified as ground station receivers (GSR), ground station transmitters (GST) and dual ground stations (Transmitter and Receiver). There are different bandwidth and link requirements depending on the ground station configuration.

Wide Area Multilateration (WAM) system provides a useful complementary system to the secondary surveillance radars (SSRs) for airspace surveillance systems. SSR operates on a line of sight basis which is highly dependent on the topography of the land. WAM uses a distributed network of interrogators and receivers (GSTs and GSRs) to determine the position of an equipped aircraft using multilateration techniques and therefore has the ability to cover irregularly shaped regions where the SSR signal is obscured.

ATNS intends to enhance their Air Traffic Control services by improving the surveillance coverage and services, within its controlled airspace, to provide redundant surveillance from FL145 and above.

ATNS has successfully deployed the WAM System on 21 Ground Stations of the 94 sites. The first roll out of the WAM System was in Kruger and Hoedspruit Region.

1.3 Purpose of the RFP

ATNS invites potential service providers to provide technically detailed proposal (implying as a minimum, but not restricted to: WAN design, equipment breakdown, installation, configuration, testing, operation, maintenance and control concepts) on a Wide Area Network (WAN) for the implementation of Wide Area Multilateration (WAM) surveillance technology. **The potential service provider shall include as part of their proposal a logistics and support plan that clearly articulates the support that can be offered throughout the life cycle of the service.**

The objective of this RFP is for ATNS to obtain a budgetary and technically detailed proposal which will address all the network requirements as per the attached WAM surveillance technology design. The desired solution is to create a harmonious and interoperable network using a standard communication link for all types of equipment and services. This will assist in making line maintenance and fault management easier.

Annexure A contains the tabulated specification of the required WAM2 network design solution for en-route ground stations. It also illustrates WAM surveillance network requirements and lists all the required WAM ground station network links. The information displayed for each link includes:

- Point A to WAN; as well as Point B from WAN of the communication link (with coordinates),
- Bandwidth required for the communication link, and
- The required Service Level Agreement (SLA).

2 Response to This Document

The Tenderer shall submit all responses, diagrams, project management documentation and drawings according to the GENERAL INFORMATION AND INSTRUCTIONS TO TENDERERS document and in the English language.

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

TENDERERS SHALL RESPOND IN FULL TO EACH ITEM IN THE FORMAT PROVIDED AND REFERENCES 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 the lack thereof shall be interpreted as **"Not Compliant"** even though the compliance column is declared as "Comply" and/or the Tenderer's offer meets the requirement. Tenderers 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"**.

Tenderers shall declare compliance to each and every paragraph of this document in the column labelled "Compliance" as follows:

C: fully compliant = 2 points:

PC: partly compliant = 1 points;

NC: not compliant = 0 points.

For paragraphs marked "PC" or "NC", Tenderer's shall include a statement as to the nature of the variation and may additionally supply supporting information in the space provided to demonstrate how the proposal meets the needs of ATNS.

3 WAN SOLUTION DESIGN REQUIREMENTS

This section defines the ATNS WAM2 network requirements for the supply, delivery, installation, commissioning, and operational acceptance of the **Wide Area Multilateration Communication Links solution** under the National WAM Expansion project.

3.1 The Bidder (Tenderer) shall provide and describe a **WAN Solution** (network and coverage requirements) in line with the tabulated specification for all sites listed in **Annexure A**.

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

3.2 The Bidder shall provide and describe a solution that meets the Scope of work in line with the provided **WAM2_Network_Design_Diagram_SV5-SV10** in **Appendix A**.

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

3.3 The Bidder shall already have an existing Wide Area Network (WAN) system that has been successfully deployed elsewhere for the purposes of datalink service provision. Only submissions from Tenderers that can prove such success and acceptance shall be evaluated. Tenderers shall provide detailed proof of their systems' deployment;

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

3.4 The Bidder shall provide at least four (4) reference letters with contact details of current customers with a similar type of a solution that is operational. Those customers shall be advised to expect enquiries;

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

3.5 The Bidder shall provide an overall technical description of the proposed Wide Area Multilateration Communication Links solution.

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

3.6 The Bidder shall provide details of the proposed datalink types for each site (e.g. fibre optic, SDH, microwave link, coaxial cables, Satellite, or any network type) on all the WAM ground station sites listed in **Annexure A.**

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

3.7 The Bidder shall provide individual pricing of each proposed link type (e.g. fibre optic, microwave link, coaxial cables, Satellite, or any network type) on all the WAM ground station sites listed in **Annexure A.** The cost of each proposed datalink type shall be included and clearly indicated in the **Pricing and Payment Schedule Spreadsheet** in **Appendix B**.

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

3.8 The Bidder shall provide detailed specification of each proposed equipment including dimensions for all the specified WAM ground station sites.

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

3.9 The Bidder shall provide a backup power supply to power the specified data links for a minimum duration of eight hours per failure. If the backup power supply is a UPS the preferred batteries of the specified UPS shall be lithium ion. The bidder shall provide detailed specification and datasheets of the proposed back up power solution and its associated storage cabinet.

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

3.10 The back up power system provided by the bidder should be rechargeable to its full capacity in 2 hours.

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

3.11 The Bidder shall provide detailed breakdown of all equipment, installation material or peripherals and all associated ancillaries of the proposed Wide Area Multilateration Communication Links Solution for all the specified WAM ground station sites

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

3.12 The Bidder shall list all the datalink equipment frequency spectrum and associated frequency specifications used for data transmission for all the specified WAM ground station sites

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

3.13 The Bidder shall propose a Wide Area Multilateration Communication Links Solution that complies with ICASA approved frequency spectrum(s).

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

3.14 The submitted response shall include the outcome of the feasibility study in a form of a report of the proposed Wide Area Multilateration Communication Links solution on all the WAM ground station sites listed in **Annexure A.** The feasibility report shall also provide extensive details on the impact on Line Of Sight (LOS), site installation activities and data transmission.

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

3.15 The cost of conducting further feasibility study and associated activities shall be included and clearly indicated in the **Pricing and Payment Schedule Spreadsheet** on all the WAM ground station sites listed in **Annexure A.**

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

3.16 The submitted response shall include the architectural design diagrams which also highlight common point of failure(s) and methodology of the proposed Wide Area Multilateration Communication Links solution.

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

3.17 The submitted response shall include details about the design of Quality of Service (QoS) the proposed Wide Area Multilateration Communication Links Solution observes.

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

3.18 The WAM Communication Links Solution shall include network monitoring functions and capabilities for both unicast and multicast data.

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

3.19 The Bidder shall provide detailed information pertaining to the entire network monitoring capabilities of the WAM Communication Links Solution remotely accessible to ATNS employees. (The information to be provided shall include monitoring capabilities for both unicast and multicast data).

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

3.20 The Contractor (Successful Bidder) shall provide ATNS with remote interface and access rights for real-time monitoring of the entire WAM Communication Links Solution performance. (The real-time monitoring shall be for both unicast and multicast data)

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

3.21 The Contractor (Successful Bidder) shall provide ATNS with all network performance parameters and events logging information for the entire WAM Communication Links Solution **during installation , commissioning and support phase of the project**. This includes historic data (graphs) of specific network parameters such as (but not limited to): availability, ping delays, jitter, latency, throughput per end-point, trace routes, aggregated uptime, TTL and packet losses, listing minimum, maximum and average values for all parameters. (Please note the requested information is for both unicast and multicast data)

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

3.22 Contractor shall provide all network performance parameters and events logging information of the entire WAM Communication Links Solution on a monthly basis **during the Service Level Agreement phase**. This includes historic data (graphs) of specific network parameters such as availability, ping delays, jitter, latency, throughput per end-point, trace routes, aggregated uptime, TTL and packet losses. (Please note the requested information is for both unicast and multicast data)

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

3.23 The submitted response shall include the Warranty activities of the proposed Wide Area Multilateration Communication Links solution.

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

3.24 The proposed Warranty period shall not be less than a period of 1 year.

COMPLIANCE (C/PC/NC)	

[INSERT FULL RESPONSE FOR EVALUATION HERE]
[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]

3.25 The submitted response shall include the detailed proposal of the Service Level Agreement (Service Level Agreement LA) of the proposed Wide Area Multilateration Communication Links solution. The proposed SLA shall define in detail the proposed maintenance and support activities that will be carried out for a period of 5 years. (Please note the requested information is for both unicast and multicast data)

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

3.26 The cost of conducting Service Level Agreement (SLA) and associated activities shall be included and clearly indicated in the **Pricing and Payment Schedule Spreadsheet** on all the WAM ground station sites listed in **Annexure A.**

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

3.27 The overall Wide Area Multilateration Communication Links solution shall comply with the ATNS Reliability, Availability and Maintainability (RAM) requirements for a WAN network system which are:

3.27.1 The link to the main centre shall experience no failures therefore shall have an availability of 100%

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

3.27.2 Each link to the ground station shall have a maximum of four failures per year; therefore, a reliability of 98.9%

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

3. 27.3 Each link to the ground station shall have a maximum downtime of 1 hour 45 minutes over a period of a year therefore an availability of 99.98%

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

3. 27.4 The proposed Wide Area Multilateration Communication Links Solution shall have a minimum Jitter of Jitter <15ms;

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

3.28 Preference shall be given to Bidders with Wide Area Multilateration Communication Links Solution proposals that comply or exceed the performance figures indicated in 3.25 above. Bidders shall provide associated substantiation and supporting documents, with both technical and financial implications.

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

3.29 The proposed Wide Area Multilateration Communication Links Solution shall comply with the Maximum One Way Delay requirements which is 100ms for 99.9% of packets within a 10 minute interval:

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

3.30 The proposed Wide Area Multilateration Communication Links Solution shall comply with the Maximum Packet Loss requirements which is 0.05% from all packets within a 10-minute interval:

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

3.31 The proposed Wide Area Multilateration Communication Links Solution shall comply with the Minimum Network Bandwidth requirements for a Single Ground Station Receiver (Omnidirectional GSR) which is 2Mbps:

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

3.32 The proposed Wide Area Multilateration Communication Links Solution shall comply with the Minimum Network Bandwidth requirements for Dual Ground Station Receiver (Dual GSR) which is 2Mbps:

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

3.33 The proposed Wide Area Multilateration Communication Links Solution shall comply with the Minimum Network Bandwidth requirements for Single Ground Station Transceiver (Omnidirectional GST) which is 2Mbps:

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

3.34 The proposed Wide Area Multilateration Communication Links Solution shall comply with the Minimum Network Bandwidth requirements for Dual Ground Station Transceiver (Dual GST) which is 2Mbps:

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

3.35 The Bidder shall give details of network security features the proposed Wide Area Multilateration Communication Links Solution complies to (e.g. packet and traffic encapsulation & encryption techniques, tunnelling features, user-level access features etc.):

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

3.36 The Contractor shall incorporate a Virtual Private Network (end-to-end IPSec tunnel) in the Wide Area Multilateration Communication Links Solution between Johannesburg (***O.R. Tambo International Airport, 15 Bonaero Dr, Kempton Park, Johannesburg, 1619, South Africa***) and(***THALES ITALIA S.p.A. Società con socio unico Sede legale: Via Provinciale Lucchese, 33 - 50019 Sesto Fiorentino (FI) – Capitale Sociale int.)*** within the Wide Area Multilateration Communication Links design proposal. The Bidder shall submit a comprehensive description and mechanism of the Virtual Private Network (end-to-end IPSec tunnel). The cost associated with the implementation of a Virtual Private Network shall be included and clearly indicated in the **Pricing and Payment Schedule Spreadsheet** in **Appendix B**.

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

3.37 The Bidder shall submit a comprehensive Project Management Plan (PMP). The Project Management Plan shall encompass all various facets relating to the implementation of the Wide Area Multilateration Communication Links solution. These including design, development, production, supply of network equipment, ICASA Licensing, resource allocation and control, management of sub-contractors, on-site installation and construction, testing, transitioning, commissioning, transportation, all Integrated Logistic Support activities, staff movements and subsistence, etc.

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

3.38 The Bidder shall cost for ACSA permit access fees for the team responsible for the deployment of the Network. The mentioned costs shall be explicitly costed for on the installation and commissioning tab of the cost breakdown in **Appendix B**. **Pricing and Payment Schedule Spreadsheet**.

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

3.39 The Bidder shall submit a draft plan for testing and accepting all critical elements of the Wide Area Multilateration Communication Links. (M)

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

3.40 The Bidder shall submit a comprehensive project schedule and deployment timelines in the Microsoft Project® format of all activities relating to the implementation of the Wide Area Multilateration Communication Links solution.

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

3.41 The Bidder shall provide a proposed Work Breakdown Structure (WBS) for the project in association with the project schedule.

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

3.42 The submitted response shall include a detailed Installation and Commissioning Plan of the WAN equipment and antennas for all WAM ground station sites listed in **Annexure A.** This plan shall include but not limited to the positioning of microwave antenna to masts and buildings.

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

3.43 The submitted response shall include detailed Cabling, Equipment and Antenna Mounting Plan for all WAM ground station sites listed in **Annexure A.**

COMPLIANCE (C/PC/NC)	
[INSERT FULL RESPONSE FOR EVALUATION HERE]	

[INSERT REFERENCE TO ADDITIONAL INFORMATION HERE]

3.44 The Bidder shall give details of Quality Management standards the proposed WAN solution complies to:

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

3.45 The Bidder shall provide a comprehensive risk management plan, the plan shall identify project related risks and provide proposed mitigation activities and methods:

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

3.46 The Bidder shall give details of the design and development standards the proposed Wide Area Multilateration Communication Links Solution complies to:

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

3.47 The Bidder shall give detailed system accreditations of the proposed Wide Area Multilateration Communication Links Solution:

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

4 Functional Threshold

The bidder is encouraged to note that each requirement contains a certain weight according to its importance. The total sum of the weights is **100%** and there is a set functional threshold of **70%** that the bidder should meet to proceed to the next step of the adjudication process.

Section.	**Weight**
Capability Assessment Requirements	9%
Project Management Requirements	15%
Technical and Operational Requirements	76%
Total	**100%**
Overall Threshold	**70%**

EVALUATION GROUP for CAPABILITY ASSESSMENT		
CRITERIA GUIDELINES FOR APPLICATION WEIGHTING	**EVALUATION CRITERIA**	**WEIGHTING**
Requirement **3.1**	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement **3.2**	Non-Compliant = 0% Partial Compliance =2.5% Full Compliance = 5%	**5%**
Requirement **3.3**	Non-Compliant = 0% Partial Compliance = 0.5% Full Compliance = 1%	**1%**
Requirement **3.4**	Non-Compliant = 0% Partial Compliance = 0.5% Full Compliance = 1%	**1%**
TOTAL CAPABILITY ASSESMENT SCORE		**5%**

EVALUATION GROUP for PROJECT MANAGEMENT REQUIREMENTS		
CRITERIA GUIDELINES FOR APPLICATION WEIGHTING	**EVALUATION CRITERIA**	**WEIGHTING**
Requirement **3.35**	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement **3.36**	Non-Compliant = 0% Partial Compliance = 0.5% Full Compliance = 1%	**1%**
Requirement **3.37**	Non-Compliant = 0% Partial Compliance = 0.5% Full Compliance = 1%	**1%**
Requirement **3.38**	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**1%**
Requirement **3.39**	Non-Compliant = 0% Partial Compliance = 0.5% Full Compliance = 1%	**1%**
Requirement **3.40**	Non-Compliant = 0% Partial Compliance = 0.5% Full Compliance = 1%	**1%**
Requirement **3.41**	Non-Compliant = 0% Partial Compliance = 0.5% Full Compliance = 1%	**1%**
Requirement **3.42**	Non-Compliant = 0% Non-Compliant = 0% Partial Compliance = 0.5%	**1%**
Requirement **3.43**	Full Compliance = 1% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement **3.44**	Non-Compliant = 0% Partial Compliance = 0.5% Full Compliance = 1%	**1%**
Requirement **3.45**	Non-Compliant = 0% Partial Compliance = 0.5% Full Compliance = 1%	**1%**
Requirement **3.47**	Non-Compliant = 0% Partial Compliance = 0.5% Full Compliance = 1%	**1%**
Requirement **3.46**	Non-Compliant = 0% Partial Compliance = 0.5% Full Compliance = 1%	**1%**
TOTAL PROJECT MANAGEMENT SCORE		**15%**

EVALUATION GROUP for TECHNICAL and OPERATIONAL REQUIREMENTS		
CRITERIA GUIDELINES FOR APPLICATION WEIGHTING	**EVALUATION CRITERIA**	**WEIGHTING**
Requirement **3.5**	Non-Compliant = 0% Partial Compliance = 2% Full Compliance = 4%	**4%**
Requirement **3.6**	Non-Compliant = 0% Partial Compliance = 1.5% Full Compliance = 3%	**3%**
Requirement **3.7**	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement **3.8**	Partial Compliance = 1.5% Full Compliance = 3% Non-Compliant = 0%	**3%**
Requirement 3.9	Non-Compliant = 0% Partial Compliance = 2% Full Compliance = 4%	**4%**
Requirement 3.10	Non-Compliant = 0% Partial Compliance = 1.5% Full Compliance = 3%	**3%**
Requirement 3.11	Non-Compliant = 0% Partial Compliance = 1.5% Full Compliance = 3%	**3%**
Requirement 3.12	Non-Compliant = 0% Partial Compliance = 2% Full Compliance = 4%	**4%**
	Non-Compliant = 0%	

EVALUATION GROUP for TECHNICAL and OPERATIONAL REQUIREMENTS		
CRITERIA GUIDELINES FOR APPLICATION WEIGHTING	**EVALUATION CRITERIA**	**WEIGHTING**
Requirement 3.13	Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.14	Non-Compliant = 0% Partial Compliance = 2% Full Compliance = 4%	**4%**
Requirement 3.15	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.16	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.17	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.18	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.19	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.20	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.21	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.22	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.23	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.24	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.25	Non-Compliant = 0% Non-Compliant = 0% Partial Compliance = 2% Full Compliance = 4%	**4%**
Requirement 3.26	Non-Compliant = 4% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.27	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**

EVALUATION GROUP for TECHNICAL and OPERATIONAL REQUIREMENTS		
CRITERIA GUIDELINES FOR APPLICATION WEIGHTING	**EVALUATION CRITERIA**	**WEIGHTING**
Requirement 3.28	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.29	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.30	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.31	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.32	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.33	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 2%	**2%**
Requirement 3.34	Non-Compliant = 0% Partial Compliance = 2% Full Compliance = 4%	**4%**
TOTAL TECH. AND OPS. SCORE		**76%**

5 Special conditions

- This is an RFP to assist ATNS in developing a viable surveillance network solution.
- Potential supplier is welcome to suggest more information to enhance the solution.

6 Correctness

- While every effort has been made to provide comprehensive and accurate background information, requirements and specifications, bidders must form their own conclusions about the solutions needed to meet the requirements set out in this RFP.

7 Important Notes

- ATNS reserves the right not to proceed with any further engagement on the requirements presented.

8 Financial Proposal Breakdown

- Bidders shall provide separate price breakdown for the WAM2 NETWORK DESIGN SOLUTION deployment costs as well as Service Level Agreement (SLA) costs in a tabular format for each site as listed in **Annexure**

9 Terms

Whilst ATNS have taken every reasonable step to ensure the accuracy of this brief, the Company accepts no liability in relation to the accuracy of any representation made. ATNS reserves the right to vary the scope and terms as described in this document although variation is not anticipated at this time. All information in this document and associated responses is Confidential. All designs and documentation will be the property of ATNS after contract signature.

10 Disclaimer

The participant shall bear all costs incurred by him regarding the preparation and submission of his response. ATNS will in no case be responsible for payment to the consultant for these costs.

ANNEXURE A

Section 1: Tabulated Specification of the WAM2 Network Design (WAM2 SITES)

Ground Station				**IP Addresses**	**POINT A TO WAN A**	**COORDINATES**		**FROM WAN TO POINT B**	**COORDINATES**		**BANDWIDTH**	**REQUIRED SLA**
No.	Name	Single/Dual	GSR/GST	Switch		LAT	LONG		LAT	LONG		
GS01	Koster-1	dual	GST	10.40.1.10	Koster	-25,942581	26,725850	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
	Koster-2											
GS02	Mafikeng	single	GST	10.40.2.10	Mafikeng	-25,807092	25,538881	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
GS03	Vryburg-1	dual	GST	10.40.3.10	Vryburg	-26,831128	24,452356	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
	Vryburg-1											
GS04	Dwaalboom-1	dual	GST	10.40.4.10	Dwaalboom	-24,794719	26,858433	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
	Dwaalboom-2											
GS11	Weidhoek-1	dual	GSR	10.40.11.10	Weidhoek	-23,882344	27,453117	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
	Weidhoek-2											
GS12	Groothoek	single	GST	10.40.12.10	Groothoek	-24,467156	27,612369	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
GS27	Springbok-1	dual	GST	10.40.27.10	Springbok	-29,547300	17,807210	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
	Springbok-2											
GS28	Kleinzee	single	GST	10.40.28.10	Kleinzee	-29,605530	17,086720	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
GS29	Alexander Bay	single	GST	10.40.29.10	Alexander Bay	-28,57028	16,52833	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%

GS30	Loop 10-1	dual	GSR	10.40.30.10	Loop 10	-30,003720	20,146700	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
	Loop 10-2											
GS31	Loop 12-1	dual	GSR	10.40.31.10	Loop 12	-29,535180	20,782540	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
	Loop 12-2											
GS32	Schuitklipkop-1	dual	GSR	10.40.32.10	Schuitklipkop	-28,829554	19,665635	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
	Schuitklipkop-2											
GS33	Bokvlei-1	dual	GSR	10.40.33.10	Bokvlei	-28,587269	20,036838	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
	Bokvlei-2											
GS34	Komsberg	single	GST	10.40.34.10	Komsberg	-28,790700	20,900260	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
GS35	FAUP NDB	single	GSR	10.40.35.10	FAUP NDB	-28,478640	21,303100	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
GS36	Colston	single	GST	10.40.36.10	Colston	-28,450723	20,909589	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
GS37	Lockshoek	single	GST	10.40.37.10	Lockshoek	-28,671722	23,178694	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
GS38	Rietfontein	single	GST	10.40.38.10	Rietfontein	-26,749048	20,014713	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
GS39	Kleinbegin-1	dual	GST	10.40.39.10	Kleinbegin	-28,870450	21,730560	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
	Kleinbegin-2											
GS40	Padkloof	single	GST	10.40.40.10	Padkloof	-28,715464	22,481015	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
GS41	Warrendale	single	GST	10.40.41.10	Warrendale	-28,319745	23,454915	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
GS42	Kuruman	single	GSR	10.40.42.10	Kuruman	-27,885930	23,562924	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%

GS43	Witberg	single	GSR	10.40.43.10	Witberg	-27,142540	22,438990	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
GS44	Kathu	single	GST	10.40.44.10	Kathu	-27,709386	23,038011	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
GS45	Witbank	single	GST	10.40.45.10	Witbank	-27,415893	23,332492	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
GS46	Steekdorings	single	GST	10.40.46.10	Steekdorings	-27,35142	24,17573	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
GS47	Tsiloane-1	dual	GST	10.40.47.10	Tsiloane-1	-26,398450	23,077415	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
	Tsiloane-2				Tsiloane-2							
GS48	Pofadder	single	GST	10.40.48.10	Pofadder	-29,090273	19,384392	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%
GS49	Leliefontein	single	GST	10.40.49.10	Leliefontein	-30,314520	18,073260	FAOR SSS	-26.138340	28.251683	2Mbps	99,98%

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