AIR TRAFFIC AND NAVIGATION SERVICES SOC LTD

APPOINTMENT OF A SERVICE PROVIDER TO SUPPLY, DELIVER, INSTALL AND COMMISSION 53 HYBRID LITHIUM BATTERY POWERED INVERTERS FOR THE WIDE AREA MULTILATERATION ("WAM") PROGRAM SITES AND PROVIDE THREE (3) YEARS OF ASSOCIATED MAINTENANCE AND SUPPORT

November 2026

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 their information and supporting documents. ATNS will in no case be responsible for payment to the participants for these costs.

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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.

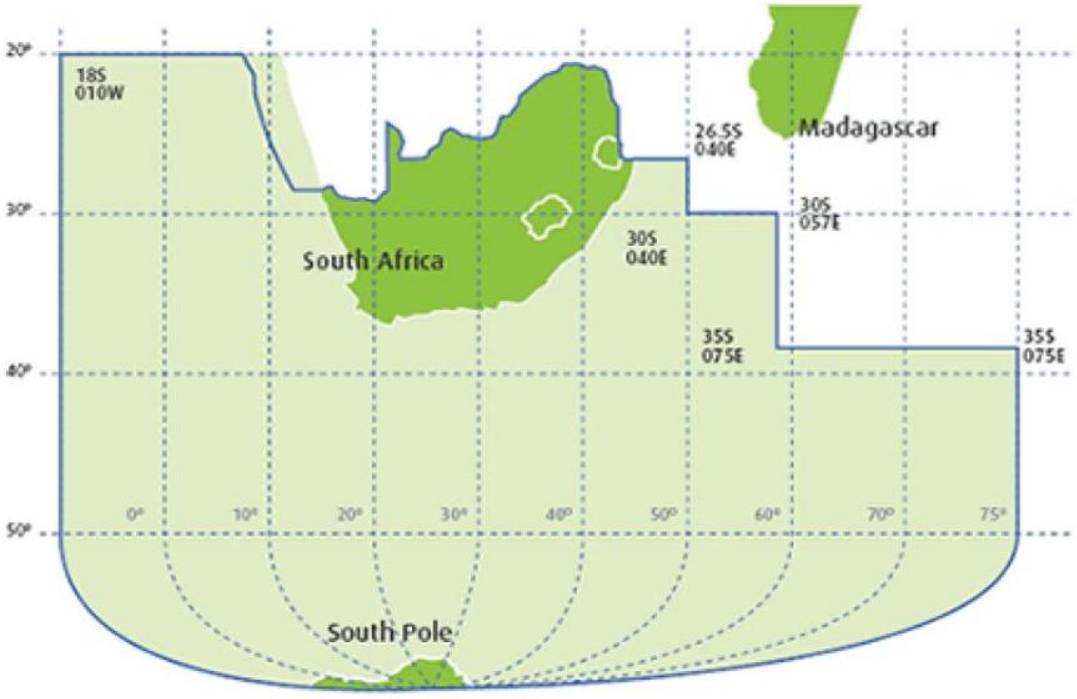


Figure 1 - Presentation of Airspace over which South African ATNS exercises jurisdiction

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 principle 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.

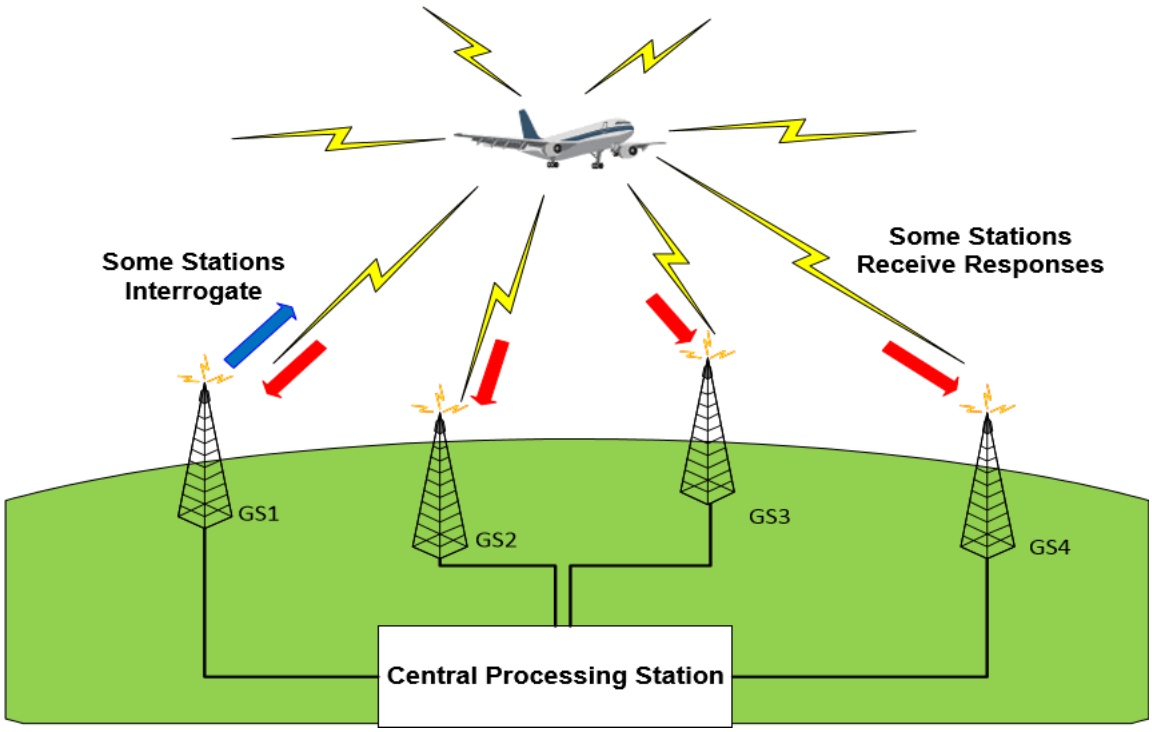


Figure 2 - Demonstration of WAM system

1.3 Purpose of the RFP

Air Traffic and Navigation Services SOC (herein this document referred to as “ATNS”) seeks the appointment of a service provider to provide a technically detailed proposal for the supply, delivery, installation, commissioning and provide a three (3) year support and maintenance of 53 hybrid lithium battery powered inverters for the Wide Area Multilateration (WAM) Program sites.

The purpose of this RFP is to contract a suitably qualified supplier with specific product knowledge and the requisite capacity to execute this project within the desired quality, scope, timeframe, and cost-effectiveness for ATNS.

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 with 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", Tenderers 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 WAM LITHIUM BATTERY POWERED INVERTERS REQUIREMENTS

This section defines the ATNS WAM Lithium Inverters requirements for the supply, delivery, installation, commissioning and support of 53 hybrid lithium battery powered inverters for the WAM programme sites.

SCOPE DESCRIPTION

3.1 The Contractor shall supply and install, commission and provide a 3-year support and maintenance contract of fifty-three (53) 10kW hybrid inverters as presented in Table 1 in Annexure A. The contractor shall provide annual preventative maintenance. The bidder shall provide a detailed proposal for the support and maintenance contract. The detailed proposal for the proposed support and maintenance contract shall define in detail the support and maintenance to be provided for a period of three (3) years.

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

INVERTER SPECIFICATION DESCRIPTION

3.2 The inverters shall have the following minimum voltage ratings.

a. 10 KVA hybrid inverters, 8-hour backup, single-phase lithium-ion, double conversion.
b. Output Voltage: 230 V
c. The Battery packs and associated storage cabinets to be supplied by the contractor.
d. Lithium batteries 200Ah
e. Maximum site load of 1 588 W

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

3.3 The Bidder shall provide a rack-mountable inverter solution that can fit in the spaces indicated below in Figure 1. The bidder shall indicate compliance with this requirement by providing a datasheet indicating dimensions of the proposed inverter and its associated battery packs.

a. In a case where a bidder might need additional space required to neatly complete the installation of the proposed inverter. The Bidder shall provide a floating shelf per site. The floating shelf shall be capable of carrying the supplied inverter weight and its associated battery pack. The floating shelf will be installed in the highlighted space below in Figure 2. The bidder shall indicate compliance to this requirement by providing the floating shelf drawings, datasheet etc.
    i. The floating shelf shall include heavy-duty L-shaped brackets mounted on the shelter wall with a metal base to hold the proposed inverter or additional battery

packs. The location of installation shall be the side indicated in the picture below in Figure 2. The bidder shall indicate compliance with this requirement by providing a drawing of the required bracket. The bidder shall account for this bracket on the pricing schedule.

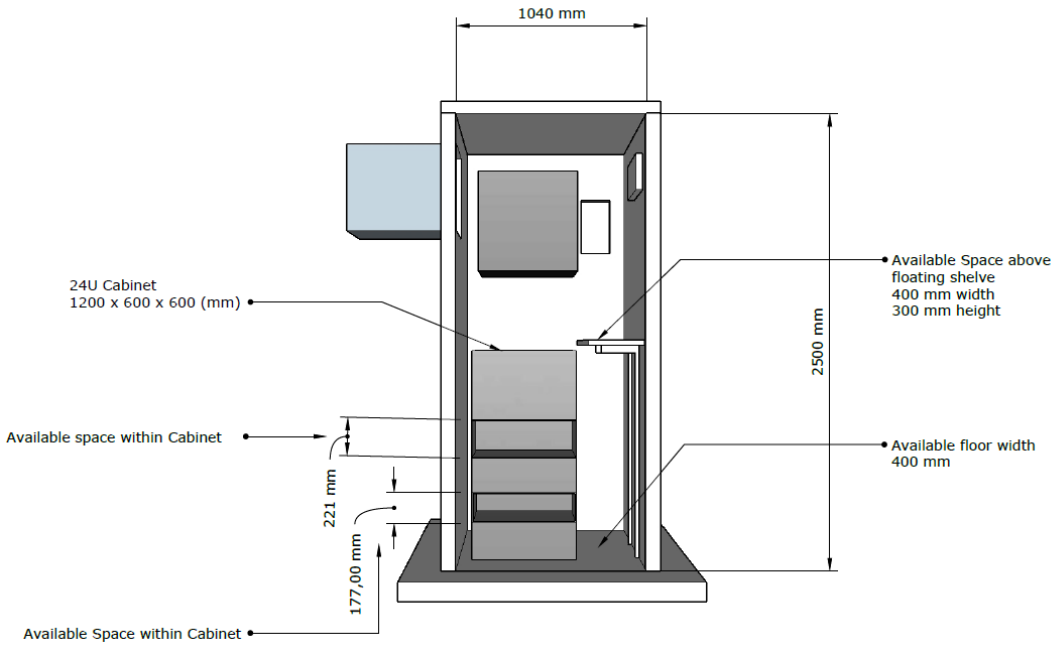


Figure 3. WAM shelter interior

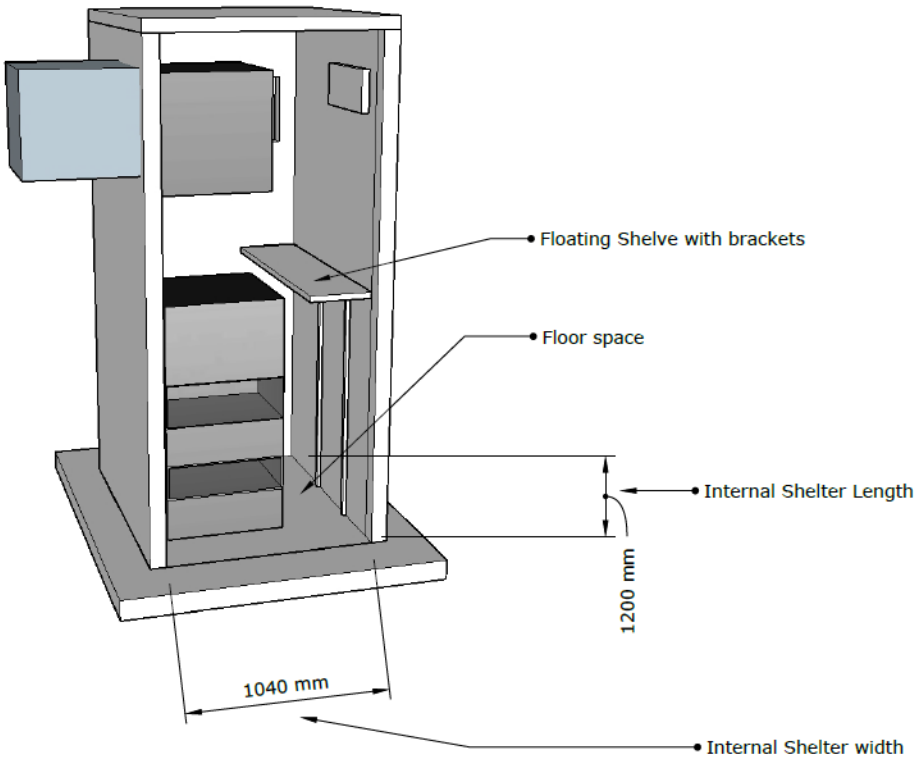


Figure 4. WAM Shelter interior depicting potential shelf position.

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

INSTALLATION AND WORKMANSHIP REQUIREMENTS

3.4 The Contractor shall take full responsibility for all electrical works pertaining to the installation and commissioning of the inverters at each individual site. The Bidder shall indicate compliance with this requirement.

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

3.5 The electrical installation shall include an isolator switch for each system installed between the equipment and the mains power supply. The electrical installation shall also include sufficient lightning and surge protection, as most sites are prone to lightning strikes.

The bidder shall submit original manufacturer datasheets of isolator switch, lighting protection, and surge protection devices and provide a calculation indicating how these devices are correctly calculated and rated for the system's full-load current demand (including continuous-duty safety margins), maximum operational voltages, short-circuit fault levels, and site-specific lightning exposure.

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

3.6 The contractor shall ensure that the inverters to be installed are connected to the current Remote-Control Monitoring System such that the status of these systems can be monitored.

The bidder shall confirm compliance with this requirement by confirming that the provided inverter model has dry contacts available to connect to external systems. To prove compliance the bidder shall point to the specific page on the provided datasheet.

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

3.7 The Contractor shall ensure that all cables are labelled, colour coded and include a numerical identifier, cable type, source (unit name, port, location) and destination (unit name, port and location). A proposed interconnection diagram depicting the flow of communication and power between the inverter system components to ATNS equipment remote monitoring unit shall be provided after the installation. All power cables shall be neatly installed inside cable trays and/or ducts as applicable and shall not run parallel to data cables.

The bidder shall submit a sample cable tagging schedule detailing source/destination/type formatting, OEM datasheets for industrial markers, a preliminary power and communication interconnection diagram for the ATNS remote monitoring unit, and a cable routing plan demonstrating physical segregation between power and data paths.

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

PROJECT MANAGEMENT REQUIREMENTS

3.8 The Bidder shall submit a proposed high-level project schedule and deployment timelines.

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

3.9 The Contractor shall perform an integrity test before commissioning of the systems and shall submit a SAT procedure as a part of the Site acceptance documentation.

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

INTEGRATED LOGISTICS REQUIREMENTS

3.10 Once the Inverter System has been commissioned at each individual site, the contractor shall provide As-Built documents and a COC to ATNS.

COMPLIANCE (C/PC/NC)	

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

3.11 The warranty period for the installed inverter shall be at least one year. The warranty period shall commence once the Site Acceptance has been concluded. This is when the site has been installed, commissioned and is fully handed over to ATNS.

The Bidder shall provide supporting documentation indicating compliance with this requirement.

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

3.12 Once the Inverter System has been commissioned at each individual site, the contractor shall provide training to ATNS technical staff on the operation and high-level maintenance of the installed Inverter system. The bidder shall submit a draft training plan indicating the scope and schedule of training.

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

3.13 The Bidder shall provide individual pricing for each Inverter System with its associated Electrical Installation Cost and Travel Logistics Costs on the Pricing and Payment Schedule provided by ATNS on Volume 1C.

COMPLIANCE (C/PC/NC)	
[INSERT FULL RESPONSE FOR EVALUATION HERE]	
[INSERT REFERENCE TO ADDITIONAL INFORMATION 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 79% that the bidder should meet to proceed to the next step of the adjudication process.

Section.	**Weight**
Volume 2: Technical and Operational Requirements	70%
Volume 3: Project Management	15%
Volume 4: Integrated Logistics and Support	15%
Total	**100%**
Overall Threshold	**79%**

EVALUATION GROUP for TECHNICAL and OPERATIONAL REQUIREMENTS		
CRITERIA GUIDELINES FOR APPLICATION WEIGHTING	**EVALUATION CRITERIA**	**WEIGHTING**
Requirement **3.1**	Non-Compliant = 0% Partial Compliance = 5% Full Compliance = 10%	**10%**
Requirement **3.2**	Non-Compliant = 0% Partial Compliance = 5% Full Compliance = 10%	**10%**
Requirement **3.3**	Non-Compliant = 0% Partial Compliance = 5% Full Compliance = 10%	**10%**
Requirement **3.4**	Non-Compliant = 0% Partial Compliance = 5% Full Compliance = 10%	**10%**
Requirement **3.5**	Non-Compliant = 0% Partial Compliance = 5% Full Compliance = 10%	**10%**
Requirement **3.6**	Non-Compliant = 0% Partial Compliance = 5% Full Compliance = 10%	**10%**
Requirement **3.7**	Non-Compliant = 0% Partial Compliance = 5% Full Compliance = 10%	**10%**
TOTAL TECH. AND OPS SCORE		**70%**

EVALUATION GROUP for PROJECT MANAGEMENT REQUIREMENTS		
CRITERIA GUIDELINES FOR APPLICATION WEIGHTING	**EVALUATION CRITERIA**	**WEIGHTING**
Requirement **3.8**	Non-Compliant = 0% Partial Compliance = 5% Full Compliance = 9%	**9%**
Requirement **3.9**	Non-Compliant = 0% Partial Compliance = 3% Full Compliance = 6%	**6%**
TOTAL PROJECT MANAGEMENT SCORE		**15%**

EVALUATION GROUP FOR INTEGRATED LOGISTICS AND SUPPORT REQUIREMENTS		
CRITERIA GUIDELINES FOR APPLICATION WEIGHTING	**EVALUATION CRITERIA**	**WEIGHTING**
Requirement **3.10**	Non-Compliant = 0% Partial Compliance = 2% Full Compliance = 4%	**4%**
Requirement **3.11**	Non-Compliant = 0% Partial Compliance = 2% Full Compliance = 4%	**4%**
Requirement **3.12**	Non-Compliant = 0% Partial Compliance = 2% Full Compliance = 4%	**4%**
Requirement **3.13**	Non-Compliant = 0% Partial Compliance = 1% Full Compliance = 3%	**3%**
TOTAL INTEGRATED LOGISTICS AND SUPPORT SCORE		**15%**

5 Special conditions

- This is an RFP to assist ATNS with achieving supply and install, commission and 3-year support and maintenance contract of fifty-three (53) 10kW hybrid inverters.

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 Breakdown

- The Bidder shall provide individual pricing for each Inverter System with its associated Electrical Installation Cost and Travel Logistics Costs on the Pricing and Payment Schedule provided by ATNS on Volume 1C.

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: WAM sites

Table 1: The Site Names and Coordinates of the WAM site for with the inverters are required for

Site No.	Site Name	LAT	LONG
1	Koster	-25,942581	26,725850
2	Dwaalboom	-24,794719	26,858433
3	Weidhoek	-23,882344	27,453117
4	Kleinzee	-29,605530	17,086720
5	Loop 10	-30,003720	20,146700
6	Loop 12	-29,535180	20,782540
7	Schuitklipkop	-28,829554	19,665635
8	Bokvlei	-28,587269	20,036838
9	Komsberg	-28,790700	20,900260
10	FAUP NDB	-28,478640	21,303100
11	Colston	-28,450723	20,909589
12	Lockshoek	-28,671722	23,178694
13	Rietfontein	-26,749048	20,014713
14	Padkloof	-28,715464	22,481015
15	Warrendale	-28,319745	23,454915
16	Kuruman	-27,885930	23,562924
17	Witberg	-27,142540	22,438990
18	Witbank	-27,415893	23,332492
19	Steekdorings	-27,35142	24,17573
20	Tsiloane	-26,398450	23,077415
21	Pofadder	-29,090273	19,384392
22	Leliefontein	-30,314520	18,073260
23	Napier	-34,529856	19,891036
24	Matjesfontein	-33,281636	20,506458
25	Constantia	-34,054008	18,385511
26	Koeberg	-33,7153	18,558056
27	Hanskop	-34,1023	18,96676
28	Simonsberg	-33,86281	18,90694
29	Kanonkop	-33,82555	18,60481
30	Jonaskop	-34,009167	19,671917
31	Piketberg	-32,817422	18,735236
32	VanRhynsdorp	-31,754169	18,691392
33	Nelspoort	-32,106861	23,0328497

34	Carnavon	-30,897208	22,371633
35	Vaalpoort	-27,271983	25,376693
36	Douglas	-29,056136	23,7749697
37	Springfontein	-30,282103	25,621817
38	Koffiefontein	-29,403558	24,99575
39	Bloemfontein Telkom	-29,10201	26,228052
40	Langberg	-29,59091	25,46769
41	Senekal	-28,207225	27,575869
42	Theunissen	-28,398404	26,7070303
43	Noupoort	-31,303972	24,93075
44	Bulsberg	-29,71716	26,52299
45	Ladybrand	-29,161393	27,383078
46	Bethlehem	-28,245217	28,300914
47	Glenred	-27,896682	24,932552
48	Kleinfontein	-26,485792	27,26
49	Kroonstad	-27,598674	27,246924
50	Nooitgedacht	-25,860503	27,531302
51	Brandfort	-28,694478	26,459437
52	Leeukop	-27,49117	28,85769
53	Davel	-26,457416	29,624152