

**ANNEX E TO
DGDP TENDER NO 215.235.23
DATED: 02 MAY 2024**

TECHNICAL SPECIFICATION OF AUTO-TRACKING VSAT TERMINAL (MANPACK) (FOR UN MSN) (DP-5)

Ser	Description	Technical Specification	To be filled up by the supplier / manufacture
(a)	(b)	(c)	(d)
PART-1: GENERAL SPECIFICATION			
1.	Nomenclature	Auto-Tracking VSAT Terminal (Manpack)	
2.	Brand Name	To be mentioned	
3.	Make	To be mentioned	
4.	Model	To be mentioned	
5.	Country of Origin	Group A Countries	
6.	Country of Manufacture & Assembly	Group A & B Countries	
7.	Year of Manufacture	Not earlier than one calendar year of the contract	
8.	Color of the System	To be mentioned	
9.	Name of Manufacturer with complete address (Office address, Telephone, Fax, Email and Web address)	To be mentioned	
10.	Name of Principal/ Assembler/ Supplier with complete address (Office address, Telephone, Fax, Email and Web address)	To be mentioned	
11.	Name of Local Agent with complete address (Office address, Telephone, Fax, Email and Web address)	To be mentioned	
12.	System Requirements	<p>a. Standard Ku Band Portable VSAT Antenna with Baseband and Network Equipment to be installed and mounted on portable structure with necessary power backup system</p> <p>b. The antenna size should be within 0.8 to 1.2 meter</p> <p>c. The system must have auto tracking feature to be linked with Standard Ku Band Transponder of available Satellite over African and European Region</p> <p>d. The system should be fitted and transferrable in portable and hard transit cases</p>	
13.	Capability of the System	<p>Each unit should be capable of handling following:</p> <p>a. Ethernet Data, Voice & Video</p> <p>b. Voice & Video Telephony</p>	



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PART-2: TECHNICAL SPECIFICATION			
14.	Carrier Parameter	Carrier parameter will be: a. ITU Satellite Region 1 b. Frequency: Standard Ku Band (Rx: 11.7-12.2 & Tx: 14.0-14.5 GHz) c. Each Terminal Station must be capable of handling minimum 10 Mbps downlink and 5 Mbps uplink data with lifetime license	
15.	Power output with Auto Power Control	To be available and details to be mentioned	
16.	Modulation	16 APSK or higher (DVB-S2, DVB-S2X with ACM and MF-TDMA or MX-DMA is preferable)	
17.	Encryption	End to end minimum AES 256 or higher encryption during transmission	
18.	Compression	System must provide both IP header compression and payload compression technique. Details about the compression technique to be provided	
19.	Topology	The system shall support Star Topology. Link budget/Data sheet for transmission and reception to be submitted	
20.	Power Source	Details to be mentioned with block diagram. a. The system should have option to run from AC, DC (Battery & Vehicle Source) & Generator power source b. One online UPS (minimum 1 kVA, auto switching, portable) with at least 15 minutes backup (for minimum 2 years) should be included with each terminal. It should have precise output voltage regulation as well as input voltage fluctuation adaptability (built in) to run from AC, DC & Generator directly	
21.	Power Consumption	Details to be mentioned	
22.	Antenna Parameters		
	a. Antenna System	Standard Ku Band Portable Antenna with built in 3-axis Auto Tracking Feature (All units / elements / components as required for the full range system operation).	
	b. Antenna Size	1 to 1.2 meter, details to be mentioned	
	c. Antenna Type	To be mentioned	
	d. Reflector Material	Carbon / Aluminum / Glass Fiber Reinforced	
	e. No of Antenna Petals	Details to be mentioned	



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Ser	Description	Technical Specification	To be filled up by the supplier / manufacture
(a)	(b)	(c)	(d)
	f. Antenna Feed Type	Linear, must be field replaceable	
	g. Polarization	Linear X-Pole, details to be mentioned	
	h. VSWR	1.3:1 or better	
	j. Satellite Acquisition	Auto acquisition, less than 2 minutes	
	k. Antenna Controller	Types and other details to be mentioned	
	l. Antenna Elevation and Azimuth Range	To be mentioned	
23.	RF Equipment Parameters		
	a. LNB		
	(1) Input Frequency	To be mentioned	
	(2) Output Frequency	To be mentioned	
	(3) Gain	To be mentioned	
	b. BUC		
	(1) Input Frequency	To be mentioned	
	(2) Output Frequency	To be mentioned	
	(3) BUC Size	Min 10 Watt	
	(4) Gain	To be mentioned	
24.	Connectivity	a. Physical Connection Medium: (1) Fiber (2) UTP b. Ethernet Data, Voice & Video Connectivity	
25.	VSAT Modem/Router Parameters	a. It should be rugged, replaceable and able to fit externally / internally as appropriate b. Modem shall support Star Network Topology c. Certificates from manufacturer to be submitted d. Details to be mentioned for all parameters	
26.	HUB Connectivity / Operator Compatibility	a. Proposed terminals must be compatible with all available satellite service providers / satellite teleports of African and European region b. Details to be mentioned for all parameters	
27.	License per Terminal	Lifetime licenses for all required equipment, software and services. Details to be mentioned	
28.	Any other	If any item not mentioned above but required for full range of operation, the bidder should specify and quote such item(s) in their offer. In case of failure to specify and quote, bidder must provide such items free of cost	



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(a)	(b)	(c)	(d)			
29.	List of Standard Items / accessories for each Terminal	Following Item/Accessories are to be offered and provided as Standard				
Bill of Quantity / Material (BOQ/BOM) of Std Items /Accessories						
	S/N	Cat/Part No/Product Code No	Nomenclature	Brand, Model & Country of Manufacture	Quantity	Rmks
	(a)	(b)	(c)	(d)	(e)	(f)
	(1)	To be mentioned	Auto Tracking Antenna System including BUC and LNB	To be mentioned	01	
	(2)	To be mentioned	VSAT Modem/Router (Rugged)	To be mentioned	01	
	(3)	To be mentioned	PoE Switch (minimum 08 port) (Cisco / reputed brand)	To be mentioned	01	
	(4)	To be mentioned	PoE supported Video IP Phone (Cisco / reputed brand)	To be mentioned	02	
	(5)	To be mentioned	POTS type Analogue CID Phone	To be mentioned	02	
	(6)	To be mentioned	Analogue Telephone Adapter	To be mentioned	02	
	(7)	To be mentioned	Fiber Media Converter	To be mentioned	01 Pair	
	(8)	To be mentioned	Portable Online UPS – 1 kVA	To be mentioned	01	
	(9)	To be mentioned	Connectors, cables & accessories (As and all required)	To be mentioned	Full Set	
	(10)	To be mentioned	Portable hard transit case (1 for Antenna System & 1 for other items)	To be mentioned	02 (Minimum)	
	(11)	To be mentioned	Necessary software for all applicable items with product lifetime license	To be mentioned	Full Set	
30.	List of Optional Items / accessories for each Terminal	List to be provided by the Supplier				
PART-3: ENVIRONMENTAL REQUIREMENT						
31.	a. Environmental Parameters	VSAT Terminal System should be operable under extreme weather conditions like heavy rain, wind & temperature of African and European region. Must comply the following: (1) Humidity: 90% (2) Operating Altitude: To be mentioned (3) Shock & Vibration: Must be able to withstand mechanical and vibrational shock of rough terrain of African and European region (4) IP Standard: IP-65				



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Ser	Description	Technical Specification	To be filled up by the supplier/ manufacture
(a)	(b)	(c)	(d)
	b. Wind Loading	Not less than 45 Km/h operational & Not less than 72 Km/h Survival	
	c. Rain (Operational)	To be mentioned	
	d. Temperature (Operational)	0° to +55°C	
PART-4: LIST OF SPARES			
32.	List of standard, fast and slow moving spare parts, tools, and accessories	To be suggested (01x BUC and 01x LNB to be quoted for spare parts)	
PART-5: OTHERS			
33.	Manufacturer / Principal Experiences	Must have minimum 10 years Functional Experiences.	
34.	Local Agent Service Support	a. Free of cost during warranty period. b. Minimum 10 (Ten) years after the warranty period. c. Local agent must have experience in this field and must be capable to provide service support 24x7. d. Details to be mentioned.	
35.	Equipment Warranty	02 (Two) years from the date of issuance of I-Note	
36.	Availability of spares	Minimum for 10 years to be confirmed by the manufacturer/ principal	
37.	Shipping Weight	To be mentioned	
38.	Certificate provided by bidder	Following Certificates to be provided by bidder: a. Warranty / Guaranty Certificate b. Authorization Certificate by the manufacturer to the Local Agent c. A Certificate to the effect that the same/similar hardware and software will be available for next 10 years d. Certificate of availability of all spares for 10 years e. Service Support Capability of Principal/Manufacturer and Local Agent f. Country of Software Development g. Year of Production h. Hardware and Software Validity j. Software / Patch Free Update k. MTBF Any other Certificate as required necessary which is not mentioned above to be provided	

