Directorate General Defence Purchase Ministry of Defence

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06.06.0000.215.49.24/Re-Eval

அ June 2024

RE-EVALUATION OF THE SPECIFICATION OF RADIO RELAY TERMINAL STATION AND RADIO RELAY REPEATER STATION

References:

- A. Army Headquarters, General Staff Branch, Signal Directorate letter number 23.01.901.032.03.099.01. 21.12.23 dated 24 December 2023 (Not to all).
- B. Army Headquarters, General Staff Branch, Signal Directorate letter number 23.01.901.032.03.099.01.24.04.24 dated 24 December 2023 (Not to all).
- B. Army Headquarters, General Staff Branch, Signal Directorate letter number 23.01.901.032.03.099.01.24.04.24 dated 24 December 2023 (Not to all).
- 1. In light of above references, a technical specification of Radio Relay Terminal Station and Radio Relay Repeater Station is attached with this letter. Interested authorized vendors/firms/local agents of the manufacturers are requested to submit your offer for above mentioned RR Terminal Station and RR Repeater Station directly to Army Headquarters, General Staff Branch, Signal Directorate with intimation to this office by 30 June 2024 fulfilling the requirements mentioned bellow:
 - Offer as per technical specification.
 - b. Letter of authorization by Manufacturer/Principal mentioning that the said company will be the local vendor/agent for offered model.
 - c. Manuals (Original Printed by Manufacture) and CD.
 - d. Catalogue (Original Printed by Manufacture) and CD.
 - e. Catalogue of Spare Parts (Original Printed by Manufacture) and CD.
 - f. Brochure (Original Printed by Manufacture) and CD.
 - g. Enlistment Certificate of DGDP and BTRC.
 - h. Valid Certificate from Original Equipment Manufacturer (OEM) as authorized agent.
 - j. Certification from manufacturer on permission to export the said system to Bangladesh Army.
- 2. All the documents are to be submitted on Manufacture's/Principal's official pad including official stamp with signed by proper authority.
- 3. Forwarded for your information and necessary action please.

RAIHAN RAHMAN

Major

For Director General

Enclosure:

1. Technical Specification-16 (Sixteen) Pages Only.

Distribution:

External:

Information:

Army Headquarters, General Staff Branch (Coordination)

Army Headquarters, General Staff Branch, Signal Directorate

Action:

All Concerned Supplier/Firm

Internal:

IT Section (For uploading to website)

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/Users/p6sec3armywg1/Desktop/#Mother PC/Drive3 Updt as on 07-04-21/2014-2015/Evalution.doc

ANNEX A TO
DGDP LETTER NO 06.06.0000.215.49.24/Std
DATED: 09 JUNE 2024

TECHNICAL SPECIFICATION OF RADIO RELAY TERMINAL STATION COMPLETE WITH STANDARD TOOLS AND ACCESSORIES

Ser	Items/Description	Technical Specifications	To be filled by the Manufacturer/Principal
(a)	(b)	(c)	(d)
PART	-1: GENERAL SPECIFICATION		
1.	Nomenclature	Radio Relay Terminal Station (Category - 1)	
2.	Brand Name	To be mentioned	•
3.	Туре	To be mentioned	
4.	Make and Model	To be mentioned	
5.	Country of Origin	Group A Countries	
6.	Country of Manufacture	Group A Countries	
7.	Country of Assembly	Group:A Countries	
8.	Year of Manufacture	Not earlier than the calendar year of contract	
9.	Name of Manufacturer with complete address (office address, Telephone, Fax, Email and web address)	To be mentioned	
10.	Name of Principal 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.	Color	Metallic Bronze (MB) Green	
PART	7-2: TECHNICAL SPECIFICATION		
13.	Frequency Range	To be mentioned	
14.	Frequency Band	NATO Band III / Band III + / Band IV or any other suitable band	
15.	Channel Spacing	125 KHz or better	
16.	Number of Channels	To be mentioned	
17.	Communication Range:	•	
	a. Point to Point	Minimum 25 km	
	b. Point to Multipoint (Optional)	Details to be mentioned	
18.	Data Transfer Rate	64 Mbps or more (at minimum range)	
19.	Power output with auto power control	To be available	
20.	Power Source	Should work with both AC and DC power supply along with power management system:	
		a. AC: Input Voltage Range:170V-250V, 50Hz ±5%	
	,	b. DC: 12V/24V DC ±10% Secondary battery / Special Battery system which must be rechargeable at 170V-250V, 50Hz ±5% AC power system	,
21.	Power Consumption	To be mentioned	
22.	Spectrum Analyzing / Path Profile / Frequency Planning Software	To be mentioned	
i	(Optional)	C.F.NERA	DEFER
23.	Antenna	1/4/	
	a. Suitable types of antenna to cover	To be mentioned	
	a. Outable types of anterna to cover	DS DS	

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Ser	Items/Description	Technical Specifications	To be filled by the ' Manufacturer/Principal
(a)	(b)	(c)	<u>(d)</u>
	the expected communication range and		
1	provision to fix in a 3-ton lorry or any		
	shelter based communication vehicle		
	used in Bangladesh Army	To be mentioned	
	b. Antenna Element: One antenna will be used for Tx/Rx Operation and to cover	to be memoried	
	the complete frequency band		
	c. Antenna Mast:		
	C. Aitemia mast.		
	(1) The Antenna Mast should be		
	telescopic and it should be possible to		
	deploy the mast section to full height	To be mentioned	
	of max 24m with lightning protector		
	-		
	(2) Antenna should be connected		
	with appropriate length of cable for		
	outdoor and/or indoor unit operations	T-l	
	d. Antenna arrangement will be provided	To be mentioned	•
	to rotate the Antenna by±180° (360°		
	preferable) in horizontal plane and ±10°		
	in vertical plane from the ground e. The Antenna when erected, should be	To be mentioned	
	able to withstand a wind velocity of 80	To be mentioned	
	km/h (Operational) and 120 km/h		
	(Survival)		
	f. The vendor will indicate weight and	To be mentioned	
	other spec of Antenna (Planar antenna,	76 25	
	Parabolic antenna, Sectoral antenna,		
	Omni directional antenna, Array antenna		
	etc.) being offered		
	g. The Antenna Mast should preferably	To be mentioned	
	have double rotator system (Two		
	Antenna can be fixed in one Mast)		
	h. Switching between the frequency	To be mentioned	
	bands to be automatic	Del Cat Sa as better Cable is	
24.	Feeder/Cable (Both for Indoor and	PoE, Cat 5e or better Cable is	
1	Outdoor Operation)	preferable Details to be mentioned	
	Details of Dedia	Details to be memoried	
25.	Details of Radio a. Dimension (Radio)	To be mentioned	
	b. Weight (Radio only)	To be mentioned	
	c. Maximum Tx power	To be mentioned	
	d. Receiver Sensitivity	To be mentioned	
	e. Minimum Available Output Ports:	To be mentioned	
	(1) Fast Ethernet (FE) port		
	(2) Fiber Optic (FO) port		
26.	Security Feature/ Encryption Facility		
	a. ECCM	(1) Must have Frequency Hopping	
		(2) No of hops to be mentioned	
	b. Voice and Data Encryption	Details to be mentioned	SENERAL DEC
	c. Modulation	Details to be mentioned	
27.	Interface / Integration Facilities	Graphical User Interface (GUI) based	DGDP REC
		remote configuration capability with	
1		the provision of integrating standard	
		router / switch / E1 Converter / PCM	
		Voice Gateway through open	MISTRY OF DEFENSE
		standard interface / port	
		I I latelle to be recodinged	W 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
28.	NMS. For the purpose of network management the following will be	•	30 500 00

Ser	Items/Description	Technical Specifications	To be filled by the Manufacturer/Principal
	(b)	(c)	(d)
(a)	required:	, co	
	a. The NMS should be Incorporated with the equipment or it should be possible to configure and monitor the equipment over LAN / WAN. (Optional)	Details to be mentioned	
	b. <u>Laptop / Computer</u> . Laptop/ Computer from a renowned OEM should be provided with each equipment incorporating following or better features.	Details to be mentioned	
	(1) Brand	International Reputed Brand	
	(2) Make and Model	To be mentioned	
	(3) Country of Origin	Group A Countries	
	(4) Country of Manufacture / Assembly	Group B Countries	Agginia and a second a second and a second a
	(5) Processor	Minimum Intel Chipset Core i5 (8th Generation above) or better	
İ	(6) Processor Speed	Minimum 3 GHz or better	
	(7) Memory	Minimum 16GB DDR4 1600MHz or higher	
	(8) Other Ports / Interfaces / Connectivity	(1) Minimum 3xUSB (2.0 and 3.0), HDMI, SIM Card slot (optional), SD Card slot, Headphone/ Microphone Combo Jack, Smart Card Reader (Optional), and HD Audio	
		(2) Required Network Interface / connector (Open Standard) for connecting to the Radio Relay system (if required).	
	(9) Operating System	Windows 10 Pro version (Licensed copy) or better	
	(10) Security	(a) <u>User and System Security:</u> Option for Fingerprint reader, TPM Module (b) <u>Physical Security:</u> Steel reinforced cable lock slots and hard drive locks	
	c. The equipment will incorporate SNMP (Simple Network Management Protocol) management software (SNMP v2/ SNMP v3 or better) facility from a SNMP manager	Details to be mentioned	
29.	Environment Protection		
	a. Shock/ Drop Proof	6 drops on hard surface from 122 cm height	
	b. Vibration	5 Mins continuous vibration in the machine	
	c. Immersion Proof	30 mins immersion in 1 meter depth	
	d. Dust Proof	Military Standard 810 E/F/G	
	e. Temperature	Operating: -5° to + 55° C Storage: -10° to + 60° C	GENERAL DEFENDA
30.			(S)
	a. The system should also provide the communication performance graph in all kinds of territorial and weather condition for Bangladesh		DOOP SE
	b. Vendor should provide rack, hard casing for antenna, operator console for	Details to be mentioned	O Sigs O
<u> </u>	- Casing for antenna, operator concesso for		\$ 0 6 N

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Ser	Items/Description	Technical Specifications	To be filled by the Manufacturer/Principal
(a)	(b)	(c)	(d)
	all equipment with all accessories and		
	provision to fix in a 3-ton lorry or any		
	shelter-based communication vehicle		
	used in Bangladesh Army		
31.	Generator	FIGUR (minimum)	
	a. Nomenclature	Generator 5 KVA (minimum)	
	b. Name of Manufacturer /	To be mentioned	
	Maker		
	c. Name of the Principal with full	To be mentioned	
	address		
	d. Name of the Local Agent with full	To be mentioned	
	address		
	e. Make and Model	To be mentioned	
	f. Country of Origin	Group A countries	
	g. Country of Manufacturer	Group A countries	
	h. Country of Assembly	Group A countries	
	j. Year of Production	Not before the year of contract	
	k. Overall Length, Width & Height	To be mentioned	
	(With Canopy)		
	Overall Weight with Canopy	To be mentioned	
	m. Output of the Generator		
	(1) Prime	Minimum 5 KVA	
	(2) Stand by	To be mentioned	
	n. Working Condition		
	(1) Operation	Generator set to be able to sustain	
		12 hours continuous operation per	
		day at prime load	
	(2) Noise	The generator must have noise	
	(-)	suppression system and able to	
		operate in the open and in all-weather	-
		condition	
	(3) Canopy	Should be made of anticorrosive steel	
	(o) campy	sheet and fireproof painting. Should be	
		able to attenuate sound up to	
		(maximum) db 90 at 1 meter having	
		lockable louvers, doors. Glass	
		windows for monitoring the meters to	
		be provided.	
		Colour - MB Green	
	(4) Transportation	The generator must be easily portable	
	(5) Mounting	The generator to be mounted on its	
	(o) mountains	base with anti-vibration mounting	
	(6) Starting System	Self-starter with auto provision to be	
	(b) Starting Gystern	provided	
	(7) Safety Feature	The generator must have shutdown	
	(7) Salety readule	facility with sound warning against	
		over voltage, over current, over load,	
		Low/high oil pressure over	
		temperature etc	
	(8) Overall Efficiency	To be mentioned (To be compatible	
	(0) Overall Efficiency	between engine and alternator)	SENETA DEFEN
	p. Engine	- Detrioon origino and anormatory	1000
	p. Engine (1) Name of Manufacturer/ Maker	To be mentioned	
	\	To be mentioned	DOP
	(2) Model		* * *
	(3) Country of Origin	Group A Countries	
	(4) Country of Manufacturer and	Group A Countries	STRY OF DEFERS
	Assembly	N. 1. 6 1 6 1 1	
	(5) Year of Production	Not before the year of contract	Sigs

Ser	Items/Description	Technical Specifications	To be filled by the Manufacturer/Principal
(a)	(b)	(c)	(d)
	(6) Type of Engine	4 Stroke Octane Engine	gg., .,
	(7) Numbers of Cylinders	To be mentioned	
	(8) Capability	Prime power available at variable	
		load with a load factor not exceeding	
		80% of prime power rating, over load	
		of 10% is permitted for 1 hour in	
		every 12 hours operation	
	(9) Bore/Stroke	To be mentioned	
	(10) Piston Displacement	To be mentioned	
	(11) Compression Ratio	To be mentioned	
	(12) Output power (KW) with RPM	To be mentioned	
	(13) Cooling System	Liquid / Air cooling	
	(14) Turbo charger (if available)	To be mentioned	era Limino de Limino III.
	(15) Specific Fuel consumption Liters/	To be mentioned	
	hour at full load		
	(16) Engine Efficiency	To be mentioned	
1	(17) Weight of Engine	To be mentioned	
-	(18) Fuel Tank Capacity	To be mentioned (for minimum 12	
		hours continuous operations at full	
		load)	
	(19) Battery for start the Generator (12 Volt)	AH to be mentioned	
	(20) Battery Charging Facilities	Self-battery charging by engine	
:		driven dynamo/ alternator	
	(21) Starting Voltage	12 Volt DC.	
1	(22) Engine Alternator	Capacity to be mentioned (Volt,	
-	(, 3	Amp, KW) Self battery charging by	
		engine driven	
	(23) Self-Starter	Volt & KW to be mentioned	
	q. Alternator (Generator)		
	(1) Name of Manufacturer / maker	To be mentioned	
	(2) Model	To be mentioned	
	(3) Country of Origin	Group A Countries	
	(4) Country of Manufacture and Assembly	Group A Countries	
	(5) Year of Production	Not before the year of contract	
	(6) Type	To be mentioned	
	(7) Rated Prime and Standby output (KVA)	To be mentioned	
	(8) Rated Output Voltage	220 Volt Single phase and minimum 380 Volt three phase	
	(0) Fraguency	50 Hz.	
	(9) Frequency		
	(10) No of phases & wires	To be mentioned Not less than 0.8	
	(11) Power Factor (Cos Φ)	<u> </u>	
	(12) Enclosure	To be mentioned	
	(13) Voltage Regulation	Maximum ±1.5%	
	(14) AVR or Similar Facility	To be available (Preferably built-in)	
	(15) Ventilation	Self-ventilated air cooled	
	(16) Insulation Class	To be mentioned	
	(17) RPM	To be mentioned	1/3/
	(18) Efficiency	85% (Minimum)	
	(19) Weight of Alternator	To be mentioned	18 - 181
	r. Control Panel		*
	(1) Meter & Gauges	Displaying Volt, Ampere, Frequency, Fuel in Tank, Oil Pressure,	THY OF UE
		Running/Operating Hour, Water	A Cia
		Temperature, KVA, KW, RPM, Power factor (PF) etc. Must be easily visible	Sigs Of
			(40)

i		FOR		USE ONLY		To be filled by the
Ser		Items/Description	Tech	nical Specifications	. N	lanufacturer/Principal
(a)	•	(b)	***************************************	(c)		(d)
				erator. All alarm and		
				tem should be availab		
	(2)) Switches		top key/push buttor er provision	i willi	
	s. Ca	ables & Terminals		= 100 m single co	re per	
	-		Generator.	. Flexible	type	
					be	
), 3 phases with r		
				ble to be provided erator with cable plug		
				ivery end & adequat		
			power plu	igs/lugs at the gen		
			end/Out le			
	t. Too	ols Kits		te set of tool kits		
			be provided v	vith each Generator (LIST TO	
32.	l jet of	Standard Items and Accessories				
JZ.	<u> </u>	Canada Romo ana Accessories	,			
	Ser	Item Name / Nomenclatur	re	Part No / Serial	Quantity	Country of
			. •	No		Manufacture
	Radio		T	To be provided	01 (One)	To be mentioned
	Ante	Radio with all accessories		to be brovided	o i (One)	, I to be mentioned
	Antei a.	Antenna with all accessories		To be provided	01 (One)	To be mentioned
	b.		with all	,	01 (One	<u> </u>
		accessories		[
	C.	24 Meter Antenna Mast			01 (One) To be mentioned
		face Unit		To be provided	01 (000) To be mentioned
	a.	Network Interface Unit with all accer Supply	essories	To be provided	01 (One	/ TO be memoried
	a.	Power Distribution and AC/DO	C Power	To be provided	01 (One) To be mentioned
	"	supply with battery charging		• • · · · · · · · · · · · · · · · ·	`	
	b.	Maintenance free sealed battery			02 (Two)
	Lapte			T- b	04 (0:==	\ To be mertioned
		Laptop with genuine and updated	US	To be provided	01 (One) To be mentioned
		em Setup System setup in Military Vehicle	1	To be provided	01 (One) To be mentioned
	Gene	erator		10 Do providod	37 (0110	/
	a.	Portable generator minimum 5 K\	/A with all	To be provided	01 (One) To be mentioned
		accessories		-		
	Misc	ellaneous			04/0) To be morelled at
	a.	All Other Required Accessories	including	To be provided	01 (One) To be mentioned
33.	list st	Lightening Protector Optional Items and Accessories			<u> </u>	
JJ.	LISTO	Optional items and Accessories				
	_				,	
	Ser	Item Name / Nomenclate	ure	Part No/Serial	Quantit	Country of Manufacture
				No No	1	INIGITUIACTUTE
	Radi a.	Radio with all accessories		To be provided	01 (One	ENERAL DE
	Ante			,	1 5. (5///	1/200
	a.	Parabolic antenna with all access	ories	To be provided	01 (One	
	b.	Sector Antenna with all accessori	es]	01 (One	D.GDP
	C.	Omni Directional Antenna	with all		01 (One	DGDP
		accessories		4	24.12	
	d.	Panel Antenna with all accessorie	es		01 (One	
	1					
	e.	Antenna Alignment System accessories	with all		01 (One	o) Sigs O.

	Items/Description	Tech	nical Specifications			be filled by the ufacturer/Principal
(a)	(b)		(c)			(d)
\-/	Antenna Mast					
	a. 24 Meter Antenna Mast		To be provided	01 (One)	
	Interface Unit				~	
	a. Network Interface Unit with all acce	essories	To be provided	U1 (One)	
	System Setup		7- hided	04 /	0-0	
	a. System setup in military vehicle		To be provided	01(One)	
	Power supply a. Power Distribution and AC/D0	Dower	To be provided	01 (One)	
		o rower	10 be provided		00	
İ	supply w/battery charging			01/	One)	
	b. Maintenance free sealed Battery Laptop			011	0110/	
		os	To be provided	01 (One)	
	b. Rugged Laptop with genuine and updated to	d updated	10 20 1.01.000		One)	
	OS	a aptate		,	·	
	Software					
	a. Spectrum Analyzing/Path Pr	ofiling /	To be provided	01	(One)	
	Frequency Planning Software					
	b. Network Planning & Monitoring So	ftware		01	(One)	
	Miscellaneous		To be seen dated	04	(Ona)	
	a. Intercom System (for Connecting	g lactical	To be provided	UT	(One)	
	Radio)		<u> </u>		<u> </u>	
34.	Vehicle Management. Radio Relay	Details to	be mentioned			
	equipment must have provision to be					
	fitted on existing 3-ton lorry of BD Army					
35.	Any other	If any iter	n not specifically men	lioned		
			required technically for speration. The bidder s			
			nd quote such item(s) i			
		offer. In c	ase of failure to specif	y and		
			bidder must provide	such		
	O TRAINING DECLUDEMENT	items free	or cost.			
	- 3: TRAINING REQUIREMENT	To be pro	vided as per requiren	nent	T	
36. 37.	User training Operations, Repair and Maintenance		vided as per requiren		 	
37.	training	10 bc pio	riada do por roquilos			
38.	Equipment Management training	To be pro	vided as per requiren	nent		
39.	Books and Publications		vided as per requirer			
001	a. Operational/User Manual in English		,			
ı	original (Book Type)					
	b. Repair Manual in English original				1	
1	(Book Type)					
	(Book Type) c. 100% Parts Catalogue in English					
	(Book Type) c. 100% Parts Catalogue in English original (Book Type)					
	(Book Type) c. 100% Parts Catalogue in English original (Book Type) d. 100% Price list of Catalogue in					
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	(Book Type) c. 100% Parts Catalogue in English original (Book Type) d. 100% Price list of Catalogue in English original (Book Type) e. A list of fast and slow moving					
	(Book Type) c. 100% Parts Catalogue in English original (Book Type) d. 100% Price list of Catalogue in English original (Book Type) e. A list of fast and slow moving Spares (with unit price of 5% of FOB value) in English					
<u>PAR</u> T	(Book Type) c. 100% Parts Catalogue in English original (Book Type) d. 100% Price list of Catalogue in English original (Book Type) e. A list of fast and slow moving Spares (with unit price of 5% of FOB value) in English T-4: REPAIR AND MAINTENANCE REQL	JIREMENT	LESS LIST OF SPAR	RE		ENERAL DEFE
40.	(Book Type) c. 100% Parts Catalogue in English original (Book Type) d. 100% Price list of Catalogue in English original (Book Type) e. A list of fast and slow moving Spares (with unit price of 5% of FOB value) in English T-4: REPAIR AND MAINTENANCE REQUIRED TENDERS (MITTENANCE JIREMENT	LESS LIST OF SPAR be mentioned	RE		1/20/	
40. PART	(Book Type) c. 100% Parts Catalogue in English original (Book Type) d. 100% Price list of Catalogue in English original (Book Type) e. A list of fast and slow moving Spares (with unit price of 5% of FOB value) in English - 4: REPAIR AND MAINTENANCE REQUIRED Level of maintenance - 5: LIST OF SPARES	JIREMENT Details to	be mentioned			
40.	(Book Type) c. 100% Parts Catalogue in English original (Book Type) d. 100% Price list of Catalogue in English original (Book Type) e. A list of fast and slow moving Spares (with unit price of 5% of FOB value) in English T - 4: REPAIR AND MAINTENANCE REQUITED Level of maintenance T - 5: LIST OF SPARES List of standard spare parts, tools and	JIREMENT Details to . To be r	be mentioned mentioned and list			
40. PART 41.	(Book Type) c. 100% Parts Catalogue in English original (Book Type) d. 100% Price list of Catalogue in English original (Book Type) e. A list of fast and slow moving Spares (with unit price of 5% of FOB value) in English T - 4: REPAIR AND MAINTENANCE REQUITED Level of maintenance T - 5: LIST OF SPARES List of standard spare parts, tools and accessories	JIREMENT Details to To be reprovided	nentioned and list			
40. PART 41.	(Book Type) c. 100% Parts Catalogue in English original (Book Type) d. 100% Price list of Catalogue in English original (Book Type) e. A list of fast and slow moving Spares (with unit price of 5% of FOB value) in English I - 4: REPAIR AND MAINTENANCE REQUITED Level of maintenance I - 5: LIST OF SPARES List of standard spare parts, tools and accessories I - 6: TOOL LIST FOR DIFFERENT LEVEL	JIREMENT Details to To be r provided OF MAIN	nentioned and list	to be		DODP
40. PART 41.	(Book Type) c. 100% Parts Catalogue in English original (Book Type) d. 100% Price list of Catalogue in English original (Book Type) e. A list of fast and slow moving Spares (with unit price of 5% of FOB value) in English - 4: REPAIR AND MAINTENANCE REQUITED Level of maintenance - 5: LIST OF SPARES List of standard spare parts, tools and accessories - 6: TOOL LIST FOR DIFFERENT LEVEL SST and SSM	JIREMENT Details to To be reprovided OF MAIN Details to	nentioned and list FENANCE o be mentioned and	to be		DCOP P
40. PART 41.	(Book Type) c. 100% Parts Catalogue in English original (Book Type) d. 100% Price list of Catalogue in English original (Book Type) e. A list of fast and slow moving Spares (with unit price of 5% of FOB value) in English T - 4: REPAIR AND MAINTENANCE REQUITED Level of maintenance I - 5: LIST OF SPARES List of standard spare parts, tools and accessories T - 6: TOOL LIST FOR DIFFERENT LEVEL SST and SSM a. For Repeater Station	JIREMENT Details to To be r provided OF MAIN	nentioned and list FENANCE o be mentioned and	to be		DCOP P
40. PART 41.	(Book Type) c. 100% Parts Catalogue in English original (Book Type) d. 100% Price list of Catalogue in English original (Book Type) e. A list of fast and slow moving Spares (with unit price of 5% of FOB value) in English - 4: REPAIR AND MAINTENANCE REQUITED Level of maintenance - 5: LIST OF SPARES List of standard spare parts, tools and accessories - 6: TOOL LIST FOR DIFFERENT LEVEL SST and SSM	JIREMENT Details to To be reprovided OF MAIN Details to	nentioned and list FENANCE o be mentioned and	to be		DODP
40. PART 41. PART	(Book Type) c. 100% Parts Catalogue in English original (Book Type) d. 100% Price list of Catalogue in English original (Book Type) e. A list of fast and slow moving Spares (with unit price of 5% of FOB value) in English T - 4: REPAIR AND MAINTENANCE REQUITED Level of maintenance I - 5: LIST OF SPARES List of standard spare parts, tools and accessories T - 6: TOOL LIST FOR DIFFERENT LEVEL SST and SSM a. For Repeater Station	JIREMENT Details to To be reprovided OF MAIN Details to	nentioned and list FENANCE o be mentioned and	to be		DCOP P

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ANNEX B TO DGDP LETTER NO 06.06.0000.215.49.24/Std DATED: 09 JUNE 2024

TECHNICAL SPECIFICATION OF RADIO RELAY REPEATER STATION COMPLETE WITH STANDARD TOOLS AND ACCESSORIES

Radio Relay Repeater Station (Category - 1) To be mentioned To be mentioned To be mentioned Group A Countries Group A Countries Group A Countries Not earlier than the calendar year of contract To be mentioned To be mentioned	(d)
(Category - 1) To be mentioned To be mentioned To be mentioned Group A Countries Group A Countries Group A Countries Not earlier than the calendar year of contract To be mentioned To be mentioned	
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Group A Countries Not earlier than the calendar year of contract To be mentioned To be mentioned To be mentioned	
Not earlier than the calendar year of contract To be mentioned To be mentioned To be mentioned	
year of contract To be mentioned To be mentioned To be mentioned	
To be mentioned To be mentioned	
To be mentioned	
Metallic Bronze (MB) Green	
N	
To be mentioned	
NATO Band III / Band III + / Band IV or any other suitable band	
125 KHz or better	
To be mentioned	
Minimum 25 km	
Details to be mentioned	
64 Mbps or more (at minimum range)	
Should work with both AC and DC power supply along with power management system:	A THE RALE
a. AC: Input Volt Range: 170V-250V, 50Hz ±5%	
b. DC: 12V/24V DC ±10% secondary Battery/ Special Battery system which must be rechargeable at 170V-250V, 50Hz ±5% AC power system	STRYOF
	To be mentioned NATO Band III / Band III + / Band IV or any other suitable band 125 KHz or better To be mentioned Minimum 25 km Details to be mentioned 64 Mbps or more (at minimum range) To be available Should work with both AC and DC power supply along with power management system: a. AC: Input Volt Range: 170V-250V, 50Hz ±5% b. DC: 12V/24V DC ±10% secondary Battery/ Special Battery system which must be

Ser	ltems/Description	Technical Specifications	To be filled by the Manufacturer/Principal
(a)	(b)	(c)	(d)
21. 22.	Power Consumption Spectrum analyzing / Path Profiling / Frequency planning and Network planning & monitoring Software	To be mentioned To be mentioned as optional	
22	(Optional)		Principal Control of the Control of
23.	Antenna a. Suitable types of antenna to cover the expected communication range and provision to fix in a 3-ton lorry or any shelter based communication vehicle used in Bangladesh Army.		
	b. Antenna Element: One antenna will be used for TX/RX Op and to cover the complete frequency band	To be mentioned	
	c. Antenna Mast: (1) The Antenna Mast should be telescopic and it should be possible to deploy the mast section to full height of max 24m with lightning protector	To be mentioned	
	(2) Antenna should be connected with appropriate length of cable for outdoor or indoor units/operations d. Antenna arrangement will be provided to rotate the Antenna by±180° (360° preferable) in	To be mentioned	
	horizontal plane and ±10° in vertical plane from the ground e. The Antenna when erected, should be able to withstand a wind velocity of 80 km/h Op and	To be mentioned	
	120km/hr (survival)		
	f. The vendor will indicate weight and other spec of Antenna (Planar Antenna, Parabolic antenna, Sectorial antenna, Omni directional antenna, Array antenna etc.) being offered	To be mentioned	
	g. The Antenna Mast should preferably have double rotator system (Two Antenna can be fixed in one Mast)	To be mentioned	DEN P
	h. Switching between the frequency bands to be automatic	To be mentioned	The state of the s
24.	Feeder/Cable (Both for Indoor and Outdoor Operation)	PoE, Cat 5E or better cable is preferable. Details to be mentioned	JO Sigs D

Ser	ltems/Description	Technical Specifications	To be filled by the Manufacturer/Principal
(a)	(b)	(c)	(d)
25.	Details of Radio		
	a. Dimension (Radio)	To be mentioned	
	b. Weight (Radio only)	To be mentioned	
	c. Maximum Tx power	To be mentioned	
	d. Receiver Sensitivity	To be mentioned	
	e. Minimum Available Output	To be mentioned	
	Ports:		
	(1) Fast Ethernet (FE) port		
00	(2) Fibre Optics (FO) port	1114.	
26.	Security Feature/ Encryption Fac a. ECCM		
	a. ECCM	a. Must have Frequency Hopping	
		b. No of hops to be	İ
		mentioned	
	b. Voice and Data Encryption	Details to be mentioned	
	c. Modulation	Details to be mentioned	
27.	Interface/Integration Facilities	Graphical User Interface (GUI)	
	mionaco mogration i dominoc	based remote configuration	
1		capability with the provision of	
ļ		integrating standard router /	
		switch / E1 Converter / PCM	
ļ		Voice Gateway through open	
		standard interface / port	
28.	NMS. For the purpose of	Details to be mentioned	
	network management the		
	following will be required:		
	a. The NMS should be		
	Incorporated with the equipment		
	or it should be possible to		
	configure and monitor the		
	equipment over LAN/WAN.		
	(Optional)	Details to be seen the seed	
	b. <u>Laptop/Computer</u> .	Details to be mentioned	
	Laptop/ Computer from a renowned OEM should be		
	provided with each equipment		
	incorporating following or better		
	features.		o Sign
L	1,000,000	!	



Ser	lten	ns/Description	Technical Specifications	To be filled by the Manufacturer/Principal
(a)	, ki	(b)	(c)	(d)
ĺ	(1)	Brand	International Reputed Brand	
	(2)	Make and Model	To be mentioned	
		Country of Origin	Group A Countries	
		Countryof	Group B Countries	
		cture / Assembly	Nii i la la la la la la la la la la la la la	
	(5)	Processor	Minimum Intel Chipset Core i5 (8th Generation above) or better	
}	(6)	Processor Speed	Minimum 3 GHz or better.	
ŀ		Memory	Minimum 16GB DDR4 1600MHz	
	(1)	lvioinory	or higher	
Ì	(8)	Other Ports/	(1) Minimum 3xUSB (2.0 and	
		es/ Connectivity	3.0), HDMI, SIM Card slot	
			(optional), SD Card slot,	
			Headphone/ Microphone Combo	
			Jack, Smart Card Reader	
			(Optional), and HD Audio	
			(2) Required Network Interface /	
			connector (Open Standard) for	
			connecting to the Radio Relay	
İ			system (if required).	
	(9)	Operating System	Windows 10 Pro version	
			(Licensed copy) or better	
	(10)	Security	(a) User and System Security:	
			Option for Fingerprint reader,	
			TPM Module (b) Physical Security: Steel	
			reinforced cable lock slots and	
			hard drive locks	
	c. The	equipment will	Details to be mentioned	
	incorporat	e SNMP (Simple		
		/lanagement Protocol)		
		ent software (SNMP		
		v3 or better) facility		
		MP manager		
	Environm	/ Drop Proof	6 drops on hard surface from	· · · · · · · · · · · · · · · · · · ·
	a. Shock	Diop Ploof	122 cm height	
	b. Vibrat	ion	5 Mins continuous vibration in	
29.			the machine	
25.	c. Immer	rsion Proof	30 mins immersion in 1 meter	
	1 5 15	Dan - 6	depth	
	d. Dust F		Military Standard 810 E/F/G Operating: -5° to + 55° C	
	e. Temp	cialuic	Operating: -5 to + 55 C Storage: -10° to + 60° C	
	Special R	equirement		
		e system should also	Details to be mentioned	***************************************
	provide	the communication		ENERAL DO
		ce graph in all kinds		SE CENTERAL OF
	of territ			ii ži 🔨
		for Bangladesh		
30.		ndor should provide	Details to be mentioned	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	1	d casing for antenna,		* <u>\</u>
	operator	console for all		STRY OF DE
		t with all accessories sion to fix in a 3-ton		51
	lorry or			
		cation vehicle used in		30 Si
	Banglade			11 × 1
	,		<u></u>	

Items/Description (b) enerator Nomenclature Name of Manufacturer/ aker Name of the Principal ith full address Name of the Local Agent ith full address Make and Model Country of Origin Country of Manufacturer Country of Assembly Year of Production Overall Length, Width & eight (With Canopy) without ailer Overall Weight with	To be mentioned To be mentioned Group A countries Group A countries Group A countries Not before the year of contract To be mentioned	To be filled by the Manufacturer/Principal (d)
Nomenclature Name of Manufacturer/ aker Name of the Principal ith full address Name of the Local Agent ith full address Make and Model Country of Origin Country of Manufacturer Country of Assembly Year of Production Overall Length, Width & eight (With Canopy) without ailer	Generator 5 KVA (minimum) To be mentioned To be mentioned To be mentioned To be mentioned Group A countries Group A countries Group A countries Not before the year of contract To be mentioned	(d)
Nomenclature Name of Manufacturer/ aker Name of the Principal ith full address Name of the Local Agent ith full address Make and Model Country of Origin Country of Manufacturer Country of Assembly Year of Production Overall Length, Width & eight (With Canopy) without	To be mentioned To be mentioned To be mentioned To be mentioned Group A countries Group A countries Group A countries Not before the year of contract To be mentioned	
Name of Manufacturer/ aker Name of the Principal ith full address Name of the Local Agent ith full address Make and Model Country of Origin Country of Manufacturer Country of Assembly Year of Production Overall Length, Width & eight (With Canopy) without	To be mentioned To be mentioned To be mentioned To be mentioned Group A countries Group A countries Group A countries Not before the year of contract To be mentioned	
Name of the Principal ith full address Name of the Local Agent ith full address Make and Model Country of Origin Country of Manufacturer Country of Assembly Year of Production Overall Length, Width & eight (With Canopy) without ailer	To be mentioned To be mentioned To be mentioned Group A countries Group A countries Group A countries Not before the year of contract To be mentioned	
ith full address Name of the Local Agent ith full address Make and Model Country of Origin Country of Manufacturer Country of Assembly Year of Production Overall Length, Width & eight (With Canopy) without ailer	To be mentioned To be mentioned Group A countries Group A countries Group A countries Not before the year of contract To be mentioned	
ith full address Make and Model Country of Origin Country of Manufacturer Country of Assembly Year of Production Overall Length, Width & eight (With Canopy) without ailer	To be mentioned Group A countries Group A countries Group A countries Not before the year of contract To be mentioned	
Country of Origin Country of Manufacturer Country of Assembly Year of Production Overall Length, Width & eight (With Canopy) without ailer	Group A countries Group A countries Group A countries Not before the year of contract To be mentioned	
Country of Manufacturer Country of Assembly Year of Production Overall Length, Width & eight (With Canopy) without ailer	Group A countries Group A countries Not before the year of contract To be mentioned	
Country of Assembly Year of Production Overall Length, Width & eight (With Canopy) without ailer	Group A countries Not before the year of contract To be mentioned	
Country of Assembly Year of Production Overall Length, Width & eight (With Canopy) without ailer	Not before the year of contract To be mentioned	
Year of Production Overall Length, Width & eight (With Canopy) without ailer	To be mentioned	
Overall Length, Width & eight (With Canopy) without ailer	To be mentioned	
Overall Weight with		
anopy	To be mentioned	
. Output of the Generator		
(1) Prime	Minimum 5 KVA	
(2) Stand by	To be mentioned	
Working Condition		
(1) Operation	Generator set to be able to sustain 12 Hours Continuous Operation per day at prime load	
(2) Noise	The generator must have noise suppression system and able to operate in the open and in all-weather condition	
(3) Canopy	Should be made of anticorrosive steel sheet and fireproof painting. Should be able to attenuate sound up to (maximum) db 90 at 1 meter having lockable louvers, doors. Glass windows for monitoring the meters to be provided. Colour – MB Green	
(4) Transportation	The generator must be easily portable	
(5) Mounting	The generator to be mounted on its base with anti-vibration mounting	
(6) Starting System	Self-starter with auto provision to be provided	
(7) Safety Feature	The generator must have shutdown facility with sound warning against over voltage, over current, over load, Low/high oil pressure over temperature etc	DOD P
(8) Overall Efficiency	To be mentioned (To be compatible between engine and alternator)	THIN TRY OF DEFEN
. Engine		
(1) Name of	To be mentioned	C Sigs of
	To be mentioned	
	(4) Transportation (5) Mounting (6) Starting System (7) Safety Feature (8) Overall Efficiency Engine	Should be made of anticorrosive steel sheet and fireproof painting. Should be able to attenuate sound up to (maximum) db 90 at 1 meter having lockable louvers, doors. Glass windows for monitoring the meters to be provided. Colour – MB Green (4) Transportation The generator must be easily portable (5) Mounting The generator to be mounted on its base with anti-vibration mounting (6) Starting System Self-starter with auto provision to be provided (7) Safety Feature The generator must have shutdown facility with sound warning against over voltage, over current, over load, Low/high oil pressure over temperature etc (8) Overall Efficiency To be mentioned (To be compatible between engine and alternator) Engine (1) Name of To be mentioned

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Ser	ltems/Description	Technical Specifications	To be filled by the Manufacturer/Principal
(a)	(b)	(c)	(d)
	(3) Country of Origin	Group A Countries	
Ī	(4) Country of	Group A Countries	
	Manufacturer and		
	Assembly		
	(5) Year of Production	Not before the year of contract	
	(6) Type of Engine	4 Stroke Octane Engine	
Γ	(7) Numbers of	To be mentioned	
į	Cylinders		
	(8) Capability	Prime power available at variable	
		load with a load factor not	
		exceeding 80% of prime power	
j		rating, over load of 10% is	
i		permitted for 1 hour in every 12	
		hours operation	
Γ	(9) Bore/Stroke	To be mentioned	
Ī	(10) Piston Displacement	To be mentioned	
ľ	(11) Compression Ratio	To be mentioned	
ľ	(12) Output power (KW) with	To be mentioned	
1	RPM		
Ī	(13) Cooling System	Liquid / Air cooling	
T T	(14) Turbo charger	To be mentioned	
	(if available)		
f	(15) Specific Fuel	To be mentioned	
	consumption Liters/ hour at		
	full load		
F	(16) Engine Efficiency	To be mentioned	
Ī	(17) Weight of Engine	To be mentioned	A A A A A A A A A A A A A A A A A A A
ľ	(18) Fuel Tank Capacity	To be mentioned (for minimum 12	
	` ,	hours continuous operations at full	
		load)	
Ī	(19) Battery for start the	AH to be mentioned	
- 1	Generator (12 Volt)		
Ī	(20) Battery Charging	Self-battery charging by engine	
	Facilities	driven dynamo / alternator	
Ī	(21) Starting Voltage	12 Volt DC	
ľ	(22) Engine Alternator	Capacity to be mentioned (Volt,	
	. , .	Amp, KW) Self battery charging by	
		engine driven	
Ī	(23) Self-Starter	Volt & KW to be mentioned	
	q. Alternator (Generator)		
	(1) Name of	To be mentioned	
	Manufacturer / maker		
	(2) Model	To be mentioned	
Ì	(3) Country of Origin	Group A Countries	
İ	(4) Country of	Group A Countries	
	Manufacture and		GENERAL DEAG
	Assembly		1/20/
Ì	(5) Year of Production	Not before the year of contract	II J
	(6) Type	To be mentioned	IIBI DGDP
	(7) Rated Prime and	To be mentioned	112/14
	Standby output (KVA)		Maria
	(8) Rated Output Voltage	220 Volt Single phase and	THE OF DET
	(=)	minimum 380 Volt three phase	
	(9) Frequency	50z.	
ı	1 12/		
	(10) No of phases & wires	To be mentioned	Sign Sign

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Ser	ltems/Description	Te	chnical Specifications	s	To be filled by the Manufacturer/Principal
(a)	(b)		(c)	-	(d)
	(12) Enclosure	To be m	entioned		
	(13) Voltage Regulation		m ±1.5%		
	(14) AVR	To be av	ailable (Preferably buil	lt-in)	
	(15) Ventilation	Self-ven	tilated air cooled		
	(16) Insulation Class	To be m	entioned		
	(17) RPM	To be m	entioned		
	(18) Efficiency	85% (Mi	nimum)		
	(19) Weight of Alternator		entioned		
	r. Control Panel				
	(1) Meter & Gauges	Fuel in Running Temperar factor (Figure 1)	Operating Hour, ature, KVA, KW, RPM, Pr) etc. Must be easily operator. All alarm and	Water Power visible d data	
			system should be availa		
	(2) Switches		Stop key/push butto	n with	
	O-lile 0 Territoria		rter provision		
	s. Cables & Terminals	Generat	n = 100 m single co or. Flexible	re per type	
		std/aded mention power each plugs/lu adequal		o be neutral d with cable end &	
	t. Tools Kits	A com	plete set of tool kits	to he	
	t. 10019 Atts		d with each Generator		
32.	List of Standard Items and Acc				
	Ser Item Name/Nomencl		Part No/Serial No	Quant	tity
	Radio		L	1	
	a. Radio with all accessories		To be provided	02 (Tv	vo)
	Antenna & Mast			•	
		vith all	To be provided	02 (Tv	vo)
	b. Antenna Alignment Syster accessories		02 (Tv		
	c. 24 Meter Antenna Mast			02 (Tv	vo)
	Interface Unit		· · · · · · · · · · · · · · · · · · ·	,	241.5
	a. Network Interface Unit (NI	J) with all	To be provided	01 (0)	ne)
	accessories				
	Power Supply			1	
	a. Power Distribution and Power supply with battery	charging	To be provided	01 (0)	1121
	b. Maintenance free sealed b	attery		02 (Tv	NO)
	a. Laptop with genuine and	updated	To be provided	01 (0	ne)
	System Setup			1	3 Sign
	a. System setup in military ve	hicle	To be provided	01 (0	ne)
	a. Oystern setup in military ve	UG	1 10 DO PIOVIDED	, 5, 6	(# (D)

r	ktems/Description			Technical Specifications		To be filled by the Manufacturer/Principal		
1)		(b)		(c)		(d)		
	Gene	erator						
	a.		trailer all	To be provided	01 (Or	ne)		
- [Misc	ellaneous			1,	· · · · · · · · · · · · · · · · · · ·		
	a.	All other required acces including Lightening Protector		To be provided	01 (Or	ne)		
. [List o	of Optional Items and Access	ories		_			
	Ser	Item Name/Nomenclature	9	Part No/Serial No	Quant	ity		
	Radio	0						
	a.	Radio with all accessories		To be provided	01 (Or	ne)		
	Ante	nna						
	a.	Parabolic antenna with accessories	all	To be provided	01 (Or	ne)		
	b.	Sector Parabolic antenna waccessories	ith all		01 (Or	ne)		
	C.	Omni Directional Antenna waccessories	ith all		01 (Or	ne)		
	d.	Panel Antenna with all access	sories	To be provided	01 (Or	ne)		
	e.	Antenna Alignment System wascessories	vith all	·	01 (Or			
	Ante	nna Mast						
	a.	24 Meter antenna Mast	То	be provided	01 (One	9)		
ı	Inter	face Unit			· ·			
	a.	Network Interface Unit (NII with all accessories	U) To	be provided	01 (One	e)		
- 1	Syste	System Setup						
	a.		гу То	be provided	01 (One	e)		
	Powe	er Supply						
	a.	Power Distribution and AC/D Power supply w/batte charging		be provided	01 (One	e)		
	b.		ed To	be provided	01 (One	9)		
	Laptop							
	a.		nd To	be provided	01 (One	e)		
	b.	Rugged Laptop with genuing and updated OS	ne To	be provided	01 (One	e)		
ĺ	Softv							
	a.	Spectrum Analyzing / Pa Profiling / Frequency Plannii Software		be provided	01 (One	e)		
	b.	Network Planning Monitoring Software	& To	be provided	01 (On	e)		
	Mis	cellaneous						
	a.	Intercom System (for Connecti tactical Radio)		ll be provided ring tender stage	01 (On	e) NO Sigs		

Ser	ltems/Description	Technical Specifications	To be filled by the Manufacturer/Principal					
(a)	(b)	, (c)	(d)					
34.	<u>Vehicle Management</u> . Radio Relay equipment must have provision to be fitted on existing 3-ton lorry of BD Army							
35.	Any other	If any item not specifically mentioned above but required technically for full range of operation, The bidder should specifies and quote such item(s) in their offer. In case of failure to specify and quote, the bidder must provide such items free of cost.						
	<u>- 3: TRAINING REQUIREMENT</u>							
36.	User training	To be provided as per requirement						
37.	Operations, repair and maintenance training	To be provided as per requirement						
38.	Equipment management training	To be provided as per requirement						
39.	Books and Publications a. Operational/User Manual in English original (Book Type) b. Repair Manual in English original (Book Type) c. 100% Parts Catalogue in English original (Book Type) d. 100% Price list of Catalogue in English original (Book Type) e. A list of fast and slow moving Spares (with unit price of 5% of FOB value) in English							
		REQUIREMENT LESS LIST OF SPARE						
	Level of maintenance	Details to be mentioned						
	- 5: LIST OF SPARES	To be mentioned and list to be						
	List of standard spare parts, tools and accessories	provided						
	PART - 6: TOOL LIST FOR DIFFERENT LEVEL OF MAINTENANCE							
42.	SST and SSM a. For Repeater Station b. For Generator & Trailer	Details To be mentioned and to be provided	An Sigs of					

