

Sl.No	Pg.No	Clause No.	Title of the Clause	Description of the Clauses as per Tender Document	To be read as
1	40	8	Scope of Work, SLA & Responsibility Matrix	the scope of this tender is to expand the coverage of the TNSWAN by connecting around 250 offices of various Government departments through Radio Frequency Modems over a period of two years.	the scope of this tender is to expand the coverage of the TNSWAN by connecting offices of various Government departments through Radio Frequency Modems over a period of two years.
2	42	8	Scope of Work, SLA & Responsibility Matrix	The computers in the horizontal offices have to be configured with the I.P schema of TNSWAN. The Network Integrator(s) has to configure the I.P addresses (provided by TCS) in the computers in the horizontal office.	Removed
3	42	8	Scope of Work, SLA & Responsibility Matrix	o) The Network Integrator(s) shall set up a 24x7 help desk (with toll free number) at Chennai to register the calls reported, coordinate with the help desk of both TCS & BSNL to maintain the Horizontal network as per the SLA. The Toll Free numbers of the Network Integrator(s) would be circulated amongst the Departments for raising services calls. All service calls raised shall be registered using Industry Standard Help Desk Software. Daily Help Desk report should be submitted to ELCOT for approval. The help /service desk operation will be shown to ELCOT for approval. Periodical verification will be done by ELCOT to ensure the error free operation of the help desk. The help desk operation should got approved prior to the Acceptance Test of the network.	o) The RF Integrator(s) shall set up a help desk at their office to register the calls reported, coordinate with the help desk of Network Hardware system integrator & BSNL to maintain the Horizontal RF network as per the SLA. Daily Help Desk report should be submitted to ELCOT for approval. The help /service desk operation will be shown to ELCOT for approval.

Sl.No	Pg.No	Clause No.	Title of the Clause	Description of the Clauses as per Tender Document	To be read as
4	42	8	Scope of Work, SLA & Responsibility Matrix	p) Wherever required, the network integrator should provide necessary power sockets with switch for providing UPS / raw AC supply for any of the networking components either at the customer premises or at the TNSWAN POP location.	Removed
5	47	8.5	Site Survey and Submission of BOM	Site Survey and Submission of BOM, Supply, installation and Commissioning of RF Network items required for TNSWAN HORIZONTAL CONNECTIVITY.	Included  Revised Price Bid is at Pg.13 of this Corrigendum
6			Inclusion		<b>Optional Item : Table 3</b> BOM and Technical Specification for 2.4GHz Radio Modem included. Is at Pg.4 & 6 of this corrigendum. Revised Price Bid is at pg.10 of this corrigendum.
7	98	S.No.2	Table: 1 Technical Specification for E1 Radio modem set (Pair) S. No. 2 Radio Frequency Band	2.3 - 2.9 GHz and 4.9 to 6.030 GHz Multiband Support Hardware. Default 5.825 to 5.875 GHz Unlicensed	4.9 to 6.030 GHz Multiband Support Hardware. Default 5.825 to 5.875 GHz Unlicensed
8	102	S.No.2	Table: 2 Technical Specification for Ethernet Radio modem set (Pair) S. No. 2 Radio Frequency Band	2.3 - 2.9 GHz and 4.9 to 6.030 GHz Multiband Support Hardware. Default 5.825 to 5.875 GHz Unlicensed	4.9 to 6.030 GHz Multiband Support Hardware. Default 5.825 to 5.875 GHz Unlicensed

Sl.No	Pg.No	Clause No.	Title of the Clause	Description of the Clauses as per Tender Document	To be read as
9	67, 69, 96, 101, 110	1	E1 Interface Radio Modem Set (pair)	8. Cable ODU to IDU Cable CAT6 standard Shielded Twisted Pair Cable	CAT5e standard Shielded Twisted Pair Cable
10	67, 69, 96, 104, 111	2	Ethernet Interface Radio Modem Set (pair)	8. Cable ODU to IDU Cable CAT6 standard Shielded Twisted Pair Cable	CAT5e standard Shielded Twisted Pair Cable
11	69, 70, 115 & 116	4, 5, 6, 7, 8	Annexure -A 12. PRICE BID.	Part B – RF AMC for 4th and 5th Year  9 meters Mast as per drawing EL-005 at Appendix-7 12 meters Mast as per drawing EL-006 at Appendix-7 15 meters Mast as per drawing EL-007 at Appendix- 7 18 meters Mast as per drawing EL-007 at Appendix- 7 21 meters Mast as per drawing EL-007 at Appendix- 7	Removed  Revised Price Bid is at Pg. 14 of this Corrigendum

**Optional Items. Bill Of Material**

<b>SN</b>	<b>Item details</b>	<b>Quantity</b>
3.	<b>E1 Interface Radio Modem Set (pair)</b>	
3.a	<b>2.9 Ghz Radio Modem with E1 Interfaces (Pair)</b> (Technical Specification given in Table 1 of Technical Bid document)	1
3.b	Pigtail Cable with Connector	1
3.c	<b>Antenna</b>	1
3.d	<b>CAT5e STP cable</b>	1
3.e	<b>Surge Protection – Radio Modem</b>	1
3.f	<b>Surge Protection – Indoor Unit</b>	1
3.g	<b>6 meters Mast Roof top as per drawing EL-004</b>	1

Optional Items AMC

<b>SN</b>	<b>Item details</b>	<b>Quantity</b>
3.	<b>E1 Interface Radio Modem Set (pair)</b>	
3.a	<b>2.9 Ghz Radio Modem with E1 Interfaces (Pair)</b> (Technical Specification given in Table 1 of Technical Bid document)	1
3.b	Pigtail Cable with Connector	1
3.c	<b>Antenna</b>	1
3.d	<b>CAT5e STP cable</b>	1
3.e	<b>Surge Protection – Radio Modem</b>	1

SN	Item details	Quantity
3.f	<b>Surge Protection – Indoor Unit</b>	1
3.g	<b>6 meters Mast Roof top as per drawing EL-004</b>	1

**BOM Others**

S.N	Description	Quantity
1	Cost for shifting of Towers from one location to another for Dismantling, Reassembling and transportation for Below Items.(inclusive of tax)	
	<b>6 meters Mast Roof top as per drawing EL-004</b>	1
	<b>9 metres Mast as per drawing EL-005 at Appendix-7</b>	1
	<b>12 metres Mast as per drawing EL-006 at Appendix-7</b>	1
	<b>15 metres Mast as per drawing EL-007 at Appendix-7</b>	1
	<b>18 metres Mast as per drawing EL-007 at Appendix-7</b>	1
	<b>21 metres Mast as per drawing EL-007 at Appendix-7</b>	1
2	<b>Cost for Site Survey</b>	1

Technical Compliance - Optional Items

**Table 3. - Technical Specification for E1 Radio modem set (Pair)**

Description	To be filled up by the bidder
Make and model with OEM part number	
Whether scanned copy of the leaflet / brochure to be attached)	

S.N	Description	Specification	Compliance To be filled up by the bidder (Yes/No)	Remarks
1	Architecture.	IDU (Enterprises Form factor.)ODU for connection to external antenna		
2	<b>Radio</b>			
	Frequency Band	2.3 to 2.9 GHz Multiband Support Hardware.		
	Data Rate	Configurable up to 48 Mbps (Bidirectional)		
	Channel Bandwidth	20Mhz, 5/10/20 Mhz supported.		
	Duplex Technique	TDD		
	Adaptive Modulation & Coding	Supported		
	Modulation	OFDM – BPSK,QPSK,16QAM,64QAM		
	Maximum TX Power	upto 18 dbm or more		
	Automatic Channel Selection	DFS		
	Received Dynamic Range	>60 db		

S.N	Description	Specification	Compliance To be filled up by the bidder (Yes/No)	Remarks
	Error Correction	FEC:k=1/2,2/3 ,3/4.		
	Encryption	AES 128		
	Range	Up to 80 Km/50 miles		
	Link Topology	Point to Point		
	Alignment Tool	Audible Buzzer		
	TDD Synchronization	In-site synchronization through HSS, Inter-site synchronization via GSU unit or equivalent		
<b>3</b>	<b>Ethernet Interface</b>			
	Type	10/100/1000 Base-T Interface with auto negotiation (IEEE 802.3af/compliant)		
	No of Ethernet Ports	2		
	Framing/Coding	IEEE 802.1x/U		
	Bridging	Self-learning up to 2047 MAC addresses Hub/Bridge mode configurable		
	Maximum Information Rate	Configurable in steps of 1Kbps		
	VLAN Support	802. 1Q		
	Latency	3 msec (typical)		
	Connector	RJ-45		
<b>4</b>	<b>EI Interface</b>			
	Framing	Unframed (transparent)		
	Number of EI Ports	2		
	Standard Compliance	ITU G.703		
	Timing	Independent Tx and Rx		

S.N	Description	Specification	Compliance To be filled up by the bidder (Yes/No)	Remarks
		Timing		
	Latency	Configurable: 5-20 msec (default: 8 msec)		
	Line Code	EI: HDB3@2.048 Mbps		
	Impedance	EI: 120Ω , balanced		
	Connector	RJ45		
	Jitter & Wander	According to ITUT G.823		
	Latency	User Configurable between 5 to 20 Msec. Default 8 msec.		
<b>5</b>	<b>Management</b>			
	Link Management Application	Yes		
	Protocol	SNMP and Telnet		
	NMS Application	Should Support SNMP Based NMS		
<b>6</b>	<b>Power and Monitoring</b>			
	Power Feeding	Wide Range DC 20 to 60VD at BSNL Exchange Side and 230VAC at TNSWAN PoP/Customer End		
	Power consumption	ODU with IDU, 15W max		
	Mounting	Pole and Wall		
<b>7</b>	<b>Environmental</b>			
	Outdoor Unit Enclosure	IP65 or greater		
	ODU Operating Temperature	-20°C to 60°C /-31°F to140°F		
	IDU Operating Temperature	-0°C to 45°C /23°F to 113°F		
	Humidity	ODU –Up to 90% non		



S.N	Description	Specification	Compliance To be filled up by the bidder (Yes/No)	Remarks
		condensing IDUUP to 80% non condensing.		
<b>8</b>	<b>Antenna</b>	<b>2.4 GHz</b>		
	<b>External Antenna</b>			
	Gain	28 dBi or more		
	Beam Width	4.50		
	Polarization	Linear		
	Interconnection cable	N type male to N type Male pigtail cable		
<b>9</b>	<b>Cable</b>			
	ODU to IDU Cable	CAT6 standard Shielded Twisted Pair Cable		
<b>10</b>	<b>Approvals &amp; Regulation</b>			
	FCC,IC & ETSI	Should meet all mentioned regulations & Standards		
	Equipment Type Approval Certificate (ETA)	Should have ETA certificate obtained from Govt of India ,Ministry of Telecommunication - WPC Wing New Delhi		
	Frequency Bands (unlicensed)	2.3 to 2.9 Ghz		
	<b>Compliance with BSNL specification TEC GR: GR/MOD-09/02 JAN 2005.</b>	<b>Should Comply</b>		
<b>11</b>	<b>Surge protection</b>			
	RF Protection	Multi-strike capability Surge protection to be provide between Antenna to Radio RF Port		
	IDU Protection	Suitable IDU surge protector to be provide		

**12. PRICE BID.**

**12.1 Part A – RF Infrastructure for Horizontal Office Connectivity**

S. No.	ITEM	QTY	Supply					Commissioning					Total Supply + Commn (13)=7+12
			Unit Price (3)	Total Price (4)	Sales Tax % (5)	Sales Tax Rs (6)	Total Supply Cost (7)=4+6	Unit Price (8)	Total Price (9)	Service Tax % (10)	Service Tax Rs (11)	Total Commn Cost (12)=9+11	
<b>1</b>	<b>E1 Interface Radio Modem Set (pair)</b>												
<b>1a</b>	<b>5.8 Ghz Radio Modem with E1 Interfaces (Pair)</b> (Technical Specification given in Table 1 of Technical Bid document)	<b>1</b>											
<b>1b</b>	Pigtail Cable with Connector	<b>1</b>											
<b>1c</b>	<b>Antenna</b>	<b>1</b>											
<b>1d</b>	<b>CAT5e STP cable</b>	<b>1</b>											
<b>1e</b>	<b>Surge Protection – Radio Modem</b>	<b>1</b>											
<b>1f</b>	<b>Surge Protection – Indoor Unit</b>	<b>1</b>											

S. No.	ITEM (1)	QTY (2)	Supply					Commissioning					Total Supply + Commn (13)=7+12
			Unit Price (3)	Total Price (4)	Sales Tax % (5)	Sales Tax Rs (6)	Total Supply Cost (7)=4+6	Unit Price (8)	Total Price (9)	Service Tax % (10)	Service Tax Rs (11)	Total Commn Cost (12)=9+11	
1g	6 meters Mast Roof top as per drawing EL-004	1											
2	Ethernet Interface Radio Modem Set (pair)												
2a	5.8 Ghz Radio Modem with Ethernet Interface (Pair) (Technical Specification given in Table 2 of Technical Bid document)	1											
2b	Pigtail Cable With Connector	1											
2c	Antenna	1											
2d	CAT5e STP cable in Mtrs	1											
2e	Surge protection - Radio Modem	1											
2f	Surge Protection- Indoor Unit	1											
2g	6 metres Mast Roof top as per drawing EL-004 at Appendix-7	1											
3	CAT6 STP cable in Mtrs	1											

S. No.	ITEM (1)	QTY (2)	Supply					Commissioning					Total Supply + Commn (13)=7+12
			Unit Price (3)	Total Price (4)	Sales Tax % (5)	Sales Tax Rs (6)	Total Supply Cost (7)=4+6	Unit Price (8)	Total Price (9)	Service Tax % (10)	Service Tax Rs (11)	Total Commn Cost (12)=9+11	
4	9 metres Mast as per drawing EL-005 at Appendix-7	1											
5	12 metres Mast as per drawing EL-006 at Appendix-7	1											
6	15 metres Mast as per drawing EL-007 at Appendix-7	1											
7	18 metres Mast as per drawing EL-007 at Appendix-7	1											
8	21 metres Mast as per drawing EL-007 at Appendix-7	1											
	<b>Total Supply and Total Commissioning</b>												
	<b>Grand Total = Total Supply + Commissioning (Total 1)</b>												

Note:

Orders will be issued to the vendors only when need arises for the Government departments  
The BOM and drawings for the mast/towers are furnished separately in Appendix 7

**12.2 Others**

S.N	Description	Quantity (1)	Unit Price ( in Rs) (2)	Total ( in Rs) 3 = (1X2)	Service tax on (7) ( in Rs) (4)	Total ( in Rs) 5=(3+4)
1	Cost for shifting of Towers from one location to another for Dismantling, Reassembling and transportation for Below Items.(inclusive of tax)					
	<b>6 meters Mast Roof top as per drawing EL-004</b>	1				
	<b>9 metres Mast as per drawing EL-005 at Appendix-7</b>	1				
	<b>12 metres Mast as per drawing EL-006 at Appendix-7</b>	1				
	<b>15 metres Mast as per drawing EL-007 at Appendix-7</b>	1				
	<b>18 metres Mast as per drawing EL-007 at Appendix-7</b>	1				
	<b>21 metres Mast as per drawing EL-007 at Appendix-7</b>	1				
2	Cost for Site Survey	1				
	<b>Total 2 :</b>					

**12.3 Part B – RF AMC for 4<sup>th</sup> and 5<sup>th</sup> Year**

AMC charges will not be taken into consideration for arriving at the L1 rate. However the successful bidders should agree to match / extend the lowest AMC charges coated by the successful L1, L2 and L3 bidders for the 4<sup>th</sup> and 5<sup>th</sup> year.

S.N	Description	Quantity in Nos.	Unit Supply rate Quoted (in Rs.)	% of AMC	Unit AMC rate	AMC Rate for 4 <sup>th</sup> and 5 <sup>th</sup> Year	AMC for 2 years with Service Tax (15%)
<b>1</b>	<b>E1 Interface Radio Modem Set (pair)</b>						
<b>1a</b>	<b>5.8 Ghz Radio Modem with E1 Interfaces (Pair)</b> (Technical Specification given in Table 1 of Technical Bid document)						
<b>1b</b>	Pigtail Cable with Connector						
<b>1c</b>	<b>Antenna</b>						
<b>1d</b>	<b>CAT5e STP cable</b>						
<b>1e</b>	<b>Surge Protection – Radio Modem</b>						
<b>1f</b>	<b>Surge Protection – Indoor Unit</b>						
<b>1g</b>	<b>6 meters Mast Roof top as per drawing EL-004</b>						
<b>2</b>	<b>Ethernet Interface Radio Modem Set (pair)</b>						
<b>2a</b>	<b>5.8 Ghz Radio Modem with Ethernet Interface (Pair)</b> (Technical Specification given in Table 2 of Technical Bid document)						

S.N	Description	Quantity in Nos.	Unit Supply rate Quoted (in Rs.)	% of AMC	Unit AMC rate	AMC Rate for 4 <sup>th</sup> and 5 <sup>th</sup> Year	AMC for 2 years with Service Tax (15%)
2b	Pigtail Cable With Connector						
2c	Antenna						
2d	CAT5 STP cable in Mtrs						
2e	Surge protection - Radio Modem						
2f	Surge Protection- Indoor Unit						
2g	6 metres Mast Roof top as per drawing EL-004 at Appendix-7						
	AMC for two years (Total 3)						

**Optional Item**

**12.4 Optional Item Part C – RF Infrastructure for Horizontal Office Connectivity**

S. No.	ITEM  (1)	QTY  (2)	Supply					Commissioning				Total Supply + Commn (13)=7+12	
			Unit Price (3)	Total Price (4)	Sales Tax % (5)	Sales Tax Rs (6)	Total Supply Cost (7)=4+6	Unit Price (8)	Total Price (9)	Service Tax % (10)	Service Tax Rs (11)		Total Commn Cost (12)=9+11
<b>E1 Interface Radio Modem Set 2.4 GHz (pair)</b>													
<b>3a</b>	2.4 GHz. Radio Modem with E1 Interfaces (Pair) (Technical Specification given in Table 3 of Corrigendum 1)	1											
<b>3b</b>	Pigtail Cable with Connector	1											
<b>3c</b>	Antenna 2.4 GHz	1											
<b>3d</b>	CAT5e STP cable	1											
<b>3e</b>	Surge Protection – Radio Modem	1											
<b>3f</b>	Surge Protection – Indoor Unit	1											
<b>3g</b>	6 meters Mast Roof top as per drawing EL-004	1											
	<b>Total Supply and Total Commissioning</b>												
	<b>Grand Total = Total Supply + Commissioning (Total 4)</b>												



**12.5 Optional Item Part D – AMC RF Infrastructure for Horizontal Office Connectivity**

AMC charges will not be taken into consideration for arriving at the L1 rate. However the successful bidders should agree to match / extend the lowest AMC charges coated by the successful L1, L2 and L3 bidders for the 4<sup>th</sup> and 5<sup>th</sup> year.

S.N	Description	Quantity in Nos.	Unit Supply rate Quoted (in Rs.)	% of AMC	Unit AMC rate	AMC Rate for 4 <sup>th</sup> and 5 <sup>th</sup> Year	AMC for 2 years with Service Tax (15%)
<b>3</b>	<b>E1 Interface Radio Modem Set 2.4 GHz (pair)</b>						
<b>3a</b>	2.4 GHz. <b>Radio Modem with E1 Interfaces (Pair)</b> (Technical Specification given in Table 3 of Corrigendum 1)						
<b>3b</b>	Pigtail Cable with Connector						
<b>3c</b>	<b>Antenna 2.4 GHz</b>						
<b>3d</b>	<b>CAT5e STP cable</b>						
<b>3e</b>	<b>Surge Protection – Radio Modem</b>						
<b>3f</b>	<b>Surge Protection – Indoor Unit</b>						
<b>3g</b>	<b>6 meters Mast Roof top as per drawing EL-004</b>						
	AMC for two years <b>(Total 5)</b>						

**12.6 Value of Price Bid**

S.No	Description	Value in Rs.
1.	Total 1 (Value of Price Bid) <b>12.1</b> (Part A)	
2.	Total 2 (Value of Price Bid) <b>12.2</b> (Others)	
	<b>Total</b>	

**Note:**

1. The price should be quoted inclusive of all expenses (Including out of pocket expenses etc.) and net of all taxes.
2. The rates indicated in the above tables are firm and are not subject to enhancement during the contract period.
3. The quantities mentioned in the above tables are subject to vary.
- 4. The Bidders should quote all inclusive rates for civil foundation, design, lighting protection, aviation obstruction light and cabling, painting, earthling, antenna support accessories, supply, delivery, erection and warranty maintenance as per the scope of work and on F.O.R Destination basis.**
5. Part A calls for the Bid to set up the infrastructure for RF horizontal connectivity to the Departments. Part B calls for the AMC for 4<sup>th</sup> and 5<sup>th</sup> year against Part A, **Part B which will not be included for arriving at the L1 bidder**
6. Partial quotes not aloud.
7. Part C calls for Optional item and Part D calls for AMC for 4<sup>th</sup> and 5<sup>th</sup> year against Part C, **Part C and D which will not be included for arriving at the L1 bidder**

**Important Note:**

**The bidder should submit signed copy of version 1 Tender document pages 1 to 118, Tower BOM and Tower drawings along with this Corrigendum Pages 1 to 18**

**The version 1 Tender document and this Corrigendum form part of the tender document**