



RAILTEL CORPORATION OF INDIA LIMITED

II floor, 'B' block, Rail Nilayam, Secunderabad-500 071

TENDER DOCUMENT

Tender Nos: RailTel/Tender/OT/SR/HQ/2017-18/59 to 63, dt: 09.11.2017

Name of the Work

Provision of Wi-Fi services at Rural Railway Stations as per scope of work, Schedule of Requirement and Specifications
(for 5 Tenders)

INDEX SHEET

SECTION	CHAPTER	SUBJECT	Page No
		Tender Notice	3-4
I	1	Preamble	5-7
	2	Tenderer data sheet	8-9
	2	Schedule of Requirements	10-29
II	1	Instructions to Tenderers and Conditions of Tendering	30-37
	2	Special Conditions of Contract	38-51
	3	Forms of Tenders Etc	52-61
III	1	Technical Specifications	62-74

रेलटेल
RAILTEL



RailTel Corporation of India Limited
(A Government of India Undertaking)

Southern Region Head Quarters, Second Floor, B-Block, Rail Nilayam, Secunderabad-500071
visit: www.railtelindia.com Tel:040-27821134 Fax 040-27820682 Rly: 88000
Regd..Office: 10th Floor, Bank of Baroda Building, 16-Parliament Street, New Delhi-110001.
Corp. Office at Plot no 143, Institutional Area, Sector-44, Gurgaon-122 003Tele: 0124-271400

OPEN TENDER NOTICE

Tender Notice Nos. RailTel/Tender/OT/SR/HQ/2017-18/59 to 63 Dt. 09.11.2017

RailTel Corporation of India Ltd., Secunderabad invites sealed tenders from established contractors with proven experience for the work of "Provision of Wi-Fi Services in Rural Railway Stations as per scope of work schedule of requirement and specification in the tender documents (Total 5 tenders) (URL: www.railtelindia.com)

S No	Tender No RailTel/ Tender/OT/ SR/HQ/	Railway Stations where Wi-Fi Services are to be provided	State	No of locati ons	Tender Estimate Cost in Rs.	EMD* (rounded off to nearest 10) in Rs.
1	2017-18/59	Mangalagiri, Krishna Canal Jn, Nambur, Vejendla, Sangamjagarlamundi, Duggirala & Pedavadlapudi,Gundala, Mustabada,	AP	9	46,85,651	93720
2	2017-18/60	Gannavaram, Pedda Avutapalle, Telaprolu, Nuzivedu,Vatluru, Powerpet, Denduluru, Bhimadolu	AP	8	41,65,023	83300
3	2017-18/61	Pulla, Chebrolu,Badampudi, Navabpalem, Nidadavolu, Chagallu, Kovvur, Godavari	AP	8	41,65,023	83300
4	2017-18/62	Charlapalli, Moula Ali, Malkajgiri, Cavalry Barracks, Bolarum, Gundla Pochampalli,Medchal, Manoharabad, Masaipet	Telangana	9	46,85,651	93720
5	2017-18/63	Wadiaram, Mirzapalli, Akanapet,Bhiknur, Talmadla, Kamareddy, Uppalavai, Indalvai, Dichpalli, Jankampet	Telangana	10	52,06,279	104130
a)	Sale of Tender Documents.		From 11.11.2017			
b)	Closing of sale of Tender Documents		04.12.2017 at 12.30 hrs			
c)	Submission of tender documents.		04.12.2017 on or before 15.00 hrs.			
d)	Opening of tender documents.		04.12.2017 at 15.30 hrs.			
e)	Earnest Money (EMD)# per section as specified above will be payable by Bank Draft in favour of RailTel Corporation of India Limited. Secunderabad					
f)	Cost of Tender Document* for each Tender is. Rs. 5600/- per TENDER inclusive of GST@12% (Rs.500/- extra if required by post) payable by Bank Draft in favour of RailTel Corporation of India Limited. Secunderabad from any scheduled bank(Non-Refundable)					
g)	Completion Period for each Tender: 60 (Sixty) days after permissions from Authorities concerned					

Eligibility Criteria Per Tender:

Tenderer must have completed successfully and satisfactorily at least one single similar work costing not less than 35 % of the advertised tender value of work during the preceding three years (i.e. current financial year and three previous financial years) executed for Govt. /PSUs/ reputed private Telecom Service providers/reputed infrastructure providers.

The total contract amount received by the tenderer during the last three years as per Audited balance sheet should be a minimum of 150% of advertised Tender Value of work. Offers not accompanied by Audited balance sheet will not be considered.

For detailed qualifying criteria, please refer Para 15 of Section II chapter I of tender document.

*** Note:**

1. Tenderer can quote for one/ all Tenders separately as per format given in schedule of requirement. Each Tender shall be treated as independent tender and evaluated accordingly. If tenderer quotes for more than one tender, tenderer should submit that as many no of EMDs and supporting documents as mentioned above against tender. (Multiplication of eligibility)
2. **This project requires simultaneous mobilization of resources in all the tenders. Hence, not more than 1-tender/reach will be awarded to any bidder even if the bidder is lowest eligible in more than 1-tender/all tenders. In such cases, the tenderers for which tenders will be awarded or not awarding of any tender is at sole discretion of RailTel**
3. It may please be noted that Locations/Stations mentioned above are indicative and can be vary at the time of execution of contract. However, the location/station will be in the same section or adjacent section
4. Firms registered with NSIC or any other body specified by Ministry of MSME for the tendered supply/work/service is exempted from submission of cost of tender & EMD. However, postage charges of Rs. 500/- would have to be paid by them, in case they need tender document by post.
5. These exemptions shall be applicable provided firms are registered with NSIC/MSME for tendered item/work and registration is current and valid. Firms claiming these exemptions are required to submit along with their offer, a copy of their current and valid NSIC/MSME registration certificate for the tendered item/work, otherwise their offer would not be considered

The offer should be kept open for acceptance for a period of **90 days** from the date of opening of the tender.

The Tenderers shall submit their offer in sealed envelopes. The offer completed in all respect **will be received up to 15.00 Hrs. on 04.12.2017 and will be opened on 04.12.2017 at 15.30 Hrs.** on the same day, in the presence of the Tenderer/s or their representative who may be present.

(Sd/-)
GM/Proj/SR
RailTel Corporation of India Ltd,
Southern Region, Secunderabad.

SECTION – I Chapter -1

Preamble**Tender No.** RailTel/Tender/OT/SR/HQ/2017-18/59 to 63, dt: 09.11.2017

- 1. Name of work:** "Provision of Wi-Fi services at Rural Railway Stations as per scope of work, Schedule of Requirement and Specifications for 5 tenders as detailed below:

S No	Tender No RailTel/ Tender/OT/ SR/HQ/	Locations where Wi-Fi Services are to be provided	State	No of locations	Tender Estimate Cost in Rs.	EMD* (rounded off to nearest 10) in Rs.
1	2017-18/59	Mangalagiri, Krishna Canal Jn, Nambur, Vejendla, Sangamjagarlamundi, Duggirala & Pedavadlapudi, Gundala, Mustabada,	AP	9	46,85,651	93720
2	2017-18/60	Gannavaram, Pedda Avutapalle, Telaprolu, Nuzivedu, Vatluru, Powerpet, Denduluru, Bhimadolu	AP	8	41,65,023	83300
3	2017-18/61	Pulla, Chebrolu, Badampudi, Navabpalem, Nidadavolu, Chagallu, Kovvur, Godavari	AP	8	41,65,023	83300
4	2017-18/62	Charlapalli, Moula Ali, Malkajgiri, Cavalry Barracks, Bolarum, Gundla Pochampalli, Medchal, Manoharabad, Masaipet	Telangana	9	46,85,651	93720
5	2017-18/63	Wadiaram, Mirzapalli, Akanapet, Bhiknur, Talmadla, Kamareddy, Uppalavai, Indalvai, Dichpalli, Jankampet	Telangana	10	52,06,279	104130

* **Note:** Tenderer can quote for one/ all Tenders separately as per format given in schedule of requirement. Each Tender shall be treated as independent tender and evaluated accordingly. If tenderer quotes for more than one tender, tenderer should submit that many no of EMDs as mentioned above against tender. Awarding or not awarding of any tender/tenders is sole discretion of RailTel.

This project requires simultaneous mobilization of resources in all the tenders. Hence, not more than 1-tender/reach will be awarded to any bidder even if the bidder is lowest eligible in more than 1-tender/all tenders. In such cases, the tenderers for which tenders will be awarded or not awarding of any tender is sole discretion of RailTel

*Firms registered with NSIC or any other body specified by Ministry of MSME for the tendered supply/work/service is exempted from submission of EMD. However, copy of valid NSIC/MSME certificate must be submitted along with offer failing which their offer will be rejected.

2. Scope of work:

- 2.1 The broad responsibility of the contractor under the scope of work for this tender shall be as under:

- 2.2 **Supply:** Supply of items conforming to industry standards as per schedule and the Technical Specifications.
- 2.2.1 **Services:** as detailed at 2.2.2 below:
- 2.2.2 **Survey:** all the stations are to be visited and following details have to be captured.
- No. of platforms, platforms covered and uncovered
 - Common area dimensions
 - Platform dimensions (length and breadth)
 - Covered shed dimensions over platforms
 - Station building dimensions
 - Poles/pillars of the covered shed over platforms
 - Identify the spots to install UPS Rack, Switch Rack, Access Point with the route for OFC/UTP cable.
 - Submit the survey drawing in a minimum of A-0 size sheets with legend.
- 2.2.3 **As made Drawings:** as made drawing of installations in Station / location including position of Rack, Switch, Access Points and route diagram of OFC and UTP cable shall be made by the contractor and submitted for approval of RailTel. This shall give a fairly accurate idea of the number & locations and the quantities and type of various equipment fixed, wired and commissioned. These shall be get approved from the Engineer in charge.
- 2.2.4 **Execution:** on submission of survey drawings, RailTel will carry out modification/ alterations for optimization. Approved drawings / plan has to be executed using the supply items of the Schedule of Requirement (SOR) as per the standard technical practice and Specifications given in this Tender Document as detailed in para 1 above.
- 3 **Tender Bid** The tender bid shall be submitted in **sealed covers** super scribed with Tender No and addressed to Regional General Manager (Southern Region), RailTel Corporation of India Ltd, II floor, 'B' block, Rail Nilayam, Secunderabad-500 071 **Tenderer can quote for one/two/all tenders separately as per format given in schedule of requirement but awarding of one / more than one tender or not awarding any tender is at the sole discretion of the RailTel Corporation of India Ltd. Each Tender shall be treated as independent tender and evaluated accordingly**
4. **Cost of Tender Book per Section:** For each tender Rs. 5600/- (inclusive of GST@12%) towards cost of tender book to be submitted in form of Demand Draft from any scheduled bank in favour of RailTel Corporation of India Ltd., payable at Secunderabad. In case of tenderer is quoting for more than one section, the cost shall be submitted in multiples of the no. of the sections at the time of submitting the offer. Tender sealed and super scribed as mentioned above can also be sent by Registered Post with acknowledgement due, to the above mentioned Office. The Tenders which are received after the time and date specified above shall not be considered. For delays by Department of Posts/courier agency RailTel will not be responsible.
- Note:**
- Firms registered with NSIC or any other body specified by Ministry of MSME for the tendered supply/work/service is exempted from submission of Cost of Tender and EMD. However, copy of valid NSIC/MSME certificate must be submitted along with offer failing which their offer will be rejected. However, postage charges of Rs. 500/- would have to be paid by them, in case they need tender document by post.
 - These exemptions shall be applicable provided units are registered with NSIC for tendered item and registration is current and valid. Firms claiming these exemptions are required to submit along with their offer, a copy of their current and valid NSIC registration certificate for the tendered item/items, otherwise their offer would not be considered
5. **Qualifying Criteria** For participating in the tender, the contractor shall be required to meet the eligibility requirements as given in **Para 15 of Chapter-1 of Section-II** (Instructions to Tenderers)

and Conditions of Tendering) of the tender document.

6. **Offer:** The tenderers are required to quote Percentage Basis for the Schedule both in figures and words as indicated in the schedule. If there is any discrepancy in the quoted percentage rates both in figures and words, the percentage rates quoted in words will be taken as final.
7. **Last date of Submission:** The tender shall be received up to **15.00 hrs** of **04.12.2017** at the Office of the Regional General Manager, RailTel Corporation of India Ltd, 2nd floor, 'B' block, Rail Nilayam, Secunderabad-500 071
8. **Date of Opening of Tender:** The tender will be opened at **15.30 hrs** on **04.12.2017** at the same address as mentioned above.
9. **Completion Period of Work for Tender/Reach:** The work is to be executed and to be completed within **60 (Sixty)** days & permissions from Authorities concerned.
10. **Address to which correspondence and documents relating to the Contract should be sent:** Regional General Manager, RailTel Corporation of India Ltd, 2nd floor, 'B' block, Rail Nilayam, Secunderabad-500 071
11. **Earnest Money:** Tenderer shall deposit amount towards Earnest Money as mentioned at para I above in a manner prescribed in **Para 5 Chapter I Section II**
12. **Security Deposit:** On receipt of Letter of Acceptance of Tender from the RailTel, the successful tenderer shall, within a period of 15 days, deposit in favour of RailTel Corporation of India Limited, Secunderabad an amount in terms of **Para-3 of Special Conditions of Contract (Section II Chapter II)** towards Security Deposit for due fulfillment of contract.
13. **Specifications:** Reference of specifications of the important equipments and materials required for execution of the contract is given in the Technical Specification (Section III chapter I of tender document). The work shall be executed in compliance with all the technical requirements given therein.
14. **Schedule of Requirement:** The various items to be supplied and services to be provided by the tenderer are indicated in Schedule of Requirement as enclosed to this preamble (Section I Chapter II). The tenderer is advised to quote for all the items. The make and model of all the equipments proposed to be supplied must be indicated by the tenderer/s in the Schedule of Requirement.
15. **Survey and as made drawings:** as mentioned at para 2.2.3 above
16. **Materials to be supplied by RailTel:** Nil
17. **Materials to be supplied by Contractor:** Tenderer's special attention is invited to the fact that no material except items mentioned in para 16 above shall be arranged/supplied by RailTel for commissioning the work. All materials including the materials covered under the Schedule of Requirement and those required achieving the end objective as required are to be supplied/transportation to be made by the contractor and No extra payment will be made under this account.
18. As a good tender practice, the tenderer is expected to submit giving all the information in the relevant forms attached as Annexure to this document and suitably numbering each page of the bid documents with a content list indicating availability of various documents with their serial numbers. In the absence of numbering of pages and the content list, there is a likelihood of any important document going unnoticed for which the tenderer shall be solely responsible.
19. In all matters, decision of Regional General Manager (Southern Region), RailTel Corporation of India Ltd, Secunderabad, will be final

TENDERER DATA SHEET

For

Provision of Wi-Fi services at Rural Railway Stations as per scope of work, Schedule of Requirement and Specifications (Tender Nos: RailTel/Tender/OT/SR/HQ/2017-18/59 to 63 dt.09.11.2017)

1	Name of the Organization	:
2	Name of the Authorized Person Submitting the Tender Documents (Submit the proof of authorizing the person to sign the tenders by the company on its behalf)	
3	Main line of Business	
4	Years of Experience	
5	Location (indicate address, tel.no., fax and the year from which they are operating in that location)	
6	Contact person	
7	Address	
8	Tel. No.	
9	Fax No.	
10	E-mail ID	
11	Tender bids: Whether Downloaded: Yes/ No (No changes/ additions/ deletions/ alterations to the tender document are permitted under any circumstances)	

Cost of Tender document in the form of DD (Rs _____, payable to RailTel Corporation of India Ltd, Secunderabad): DD No: _____ Date: _____

Eligibility Criteria for each Tender:

S. no	Conditions	Enclosed (Yes/No)	Page No												
1 (a)	Tenderer must have completed successfully and satisfactorily at least one single similar work as per cl.no.15 instructions to tenderers, during the preceding Three years (i.e. current financial year and Three previous financial years) and cost of work being not less than 35 % of the advertised tender value														
1 (b)	<p>The total contract amount received by the tenderer during the last three years as per Audited balance sheet should be a minimum of 150% of advertised Tender Value of work. Offers not accompanied by Audited balance sheet will not be considered.</p> <p>Please indicate the Annual Turnover for the last preceding Three years duly enclosing the chartered Accountant /Auditor /Authorized certified documentary evidence:</p> <table><tr><th>Year</th><th>Annual Turnover</th><th>Documentary support at page</th></tr><tr><td>2016-17</td><td></td><td></td></tr><tr><td>2015-16</td><td></td><td></td></tr><tr><td>2014-15</td><td></td><td></td></tr></table>	Year	Annual Turnover	Documentary support at page	2016-17			2015-16			2014-15				
Year	Annual Turnover	Documentary support at page													
2016-17															
2015-16															
2014-15															
1 (c)	solvency certificate ---deleted														
2 (a)	The tenderer should produce copy of PAN Number & GST registration no.														
2 (b)	The tenderer should produce Audited Balance Sheet and Income statement of all the Preceding Three financial years.														
3	The tenderer should enclose EMD as per item 10 of preamble of Tender document														

Place
Date

(Signature of the Tenderer with Seal)

SECTION I
Chapter II
SCHEDULE OF REQUIREMENT

Name of the Work: Provision of Wi-Fi services at Rural Railway Stations as per Scope of work, Schedule of Requirement & Specifications given in the Tender Document.

Tender No. RailTel/Tender/OT/SR/HQ/2017-18/59

Locations: 1. Mangalagiri 2. Krishna Canal Jn 3. Nambur 4. Vejendla 5. Sangamjagarlamundi, 6. Duggirala, 7. Pedavadlapudi, 8. Gundala & 9. Mustabada,

S No	Description (SAC code for all line items is 9954)	Unit	Base Price	GST@12 %	Rate (Rs)	Qty	Amount (Rs)
1	Supply of Cat 6 LAN cable	Drum	4877.84	585.34	5463.18	9	49168.62
2	Supply of 12F unarmored OFC (metal free) for laying over the Plate form shed (Make: Make: Finolex , Fincabe , ASKH, Sterlite or equivalent)	Mtrs	17.98	2.16	20.14	9000	181260
3	Supply of 24 Fibre (2*12 , (SC type) FMS with all accessories (TVS, Veekey , R&M or equivalent)	Nos	3534.82	424.18	3959	27	106893
4	Supply of SC - LC Patch Cord (3 Mtr.) (3M, TE Connectivity, R&M make or equivalent)	Nos	97.32	11.68	109	144	15696
5	Supply of SC - SC Patch Cord (1 Mtr.) , (3M, TE Connectivity, R&M make or equivalent)	Nos	97.32	11.68	109	144	15696
6	Supply of PVC insulated 3 Core 4 Sqmm, 12 AWG , 12.1 KV grade outdoor strengthened Copper cable for UPS supply distribution (Make: Finolex , Fincabe or equivalent)	Mtrs	76.30	9.16	85.46	4500	384570
7	Supply of PVC insulated 3 Core 6 Sqmm 12 AWG , 12.1 KV grade outdoor strengthened Copper cable for UPS supply distribution (Make: Finolex , Fincabe or equivalent)	Mtrs	112.50	13.50	126	1800	226800
8	Supply & Installation of 3 pin socket protected by 6/10A MCB as per ISI Standard in suitable PVC/Metallic Box for each Access Switch racks, Fiber Switch racks and UPS racks (of reputed make)	nos	635.71	76.29	712	18	12816
9	Supply and Installation of Power Distribution Board inside the 15U rack along with 6 nos of 6 Amps 3 Pin sockets of reputed make with 16 Amps MCB.	Nos	658.04	78.96	737	9	6633

10	Supply & Installation of 1 nos of 32 Amps dual pole MCB at Energy meter as per ISI Standard in suitable PVC/Metallic Box	Nos	594.76	71.37	666.13	18	11990.34
11	Metallic box of dimension (600 mmX 450mmX 200 mm) of gauge 16 mm for housing electric meter and other items ,along with lock and key facility and powder quoted	Nos	5129.46	615.54	5745	9	51705
12	Supply and installation of single phase Energy meter inside the metallic box supplied vide item 11	Nos	2267.86	272.14	2540	9	22860
13	Supply of 25 mm PVC Conduit Pipe ISI Mark & Installation , Clamping of the same on wall, pole etc. with required clamps & all other installation material as required.	mtr	23.22	2.79	26.01	15300	397953
14	Supply and fixing of 25 mm flexible pipe	mtr	45.74	5.49	51.23	1800	92214
15	Supply and fixing of PVC trough of 50X50 mm with cover of 2mm thick	mtr	204.32	24.52	228.84	180	41191.2
16	Blowing & Drawing of OFC Cable 24F/12F/6F, Power cable and CAT cable through PVC Conduit already installed.	mtr	3.13	0.38	3.51	15300	53703
17	Splicing / Termination of 12 F OFC in FDMS (Splicing /termination of two nos of 12F splicing will be consider as 1 nos of 24F Splicing)	nos	2813.50	337.62	3151.12	54	170160.48
18	Supply of 6U Racks	nos	5134.82	616.18	5751	18	103518
19	Supply of 15U Racks	nos	6065.64	727.88	6793.52	9	61141.68
20	Fixing or mounting of 6U/15U size Rack at suitable height on Wall, Pole. All sorts of Angles, Nuts, Bolts, Clamps and other accessories required for installation to be supplied by Contractor including extension of earth inside the rack with suitable lugs.	nos	1958.04	234.96	2193.00	27	59211
21	Supply and Installation of 1KVA UPS with 3 nos 12 V 65 AH of Battery bank and Battery rack of APC/ Libert/ Statcon Energiaa/Microtek/ Luminous/ Su-Kam or any equivalent make including extension of earth inside the rack with suitable lugs as per the technical specification	nos	26726.79	3207.21	29934.00	9	269406

22	Fixing or mounting of UPS in 15U size Rack on wall /pole . All sorts of Angles, Nuts, Bolts, Clamps and other accessories required for installation to be supplied by contractor this includes collection of material from railtel Store and installation at site and earthing arrangement with suitable lugs.	nos	2565.18	307.82	2873.00	9	25857
23	Supply and installation of metal cage for WIFI Access point as per the diagram available in the tender document, fixing of Access point inside the cage including earthing arrangement with suitable lugs.	nos	1814.29	217.71	2032.00	36	73152
24	Installation of switches/routers, end to end testing of the network & commissioning of network, submission of reports containing OFC (24F/12F) and power cable route, Power tapping point position of Rack, UPS, Fiber switches, Access switches, Access Points and routers. This includes submission of As Build Drawing.	Ls	12823.60	1538.83	14362.43	9	129261.87
25	Supply and installation of GI Pipe 40 / 50 / 75 mm as per site requirements	mtr	411.13	49.34	460.46	225	103603.5
26	Trenching by HDD Machine at depth 1.65 Mtr. for Road/ Track crossing	mtr	621.51	74.58	696.09	45	31324.05
27	Concreting in Rocky areas for OFC protection and to keep the route marker in position	Mtr	166.96	20.04	187.00	45	8415
28	Breaking of pucca road/CC, PF Cutting, Laying of OFC in Trenches and through all types of protections viz HDPE/GI/RCC Pipes etc. as the case may be. This includes restoration of surface.	mtr	242.37	29.08	271.45	180	48861
29	Laying of over head OFC on Electrical poles/existing support.	mtr	6.41	0.77	7.18	2700	19386
30	Earthing arrangement at station	nos	12823.21	1538.79	14362.00	9	129258
31	Supply and installation of Surge protection class B&C of havells / legrands or equivalent	Nos	22227.68	2667.32	24895.00	9	224055
32	Supply of 6 feet Aluminum ladder	Nos	5990.18	718.82	6709.00	9	60381

33	Supply, Installation & Commissioning of Solar Power System- 1 KVA/ 48V/ 1-phase (including PCU/UPS- 1KVA/48V/1-Phase, Battery 48V/100 Ah PV (Solar Panels)-1KWp, Array Junction Box, ACDB, GI structure, Cables, Earthing & lightning arrangement Makes: APC/ Libert/ Statcon Energiaa/Microtek/Luminous / Su-Kam or any equivalent make including extension of earth inside the rack with suitable lugs as per the technical specification at page no 69 to 71	set	135518.75	16262.25	151781.0	9	1366029
34	Supply and installation of poles including earth work and concreting	Nos	2566.96	308.04	2875.00	9	25875
35	Cost of survey & submission of drawings for permissions from Authorities	Job	8558.04	1026.96	9585.00	9	86265
36	Trenching and Laying of HDPE Duct in normal soil and blowing of OFC Cable.	Mtr	95.94	11.51	107.45	180	19341
Total in figures							46,85,651
Total in Words: Rupees Forty Six lakh Eighty Five thousand six hundred fifty one only							
Contractor Quote % percentage on Total Amount (At Par/ above / below) in figures							
Contractor Quote % percentage on Total Amount (At Par/ above / below) in words							

Note:

1. If there is any discrepancy in the Quoted percentage rates both in figures and words, the percentage rates Quoted in words will be taken as final.
2. The percentage rate Quoted should be inclusive of all taxes. **Break-up of taxes to be specified in a separate sheet showing Basic Price, GST@ and others if any etc.**
3. **Imp:** it may please be noted that Locations/Stations mentioned above are indicative and can be vary at the time of execution of contract. However, the location/station will be in the same section or adjacent section

Signature of Tenderer with Seal

SCHEDULE OF REQUIREMENT

Name of the Work: Provision of Wi-Fi services at Rural Railway Stations as per Scope of work, Schedule of Requirement & Specifications given in the Tender Document.

Tender No. RailTel/Tender/OT/SR/HQ/2017-18/60

Locations: 1. Gannavaram 2 Pedda Avutapalle 3 Telaprolu 4 Nuzivedu 5. Vatlur 6. Power Pet
7.Denduluru & 8. Bhimadolu

S No	Description (SAC code for all line items is 9954)	Unit	Base Price	GST@12 %	Rate (Rs)	Qty	Amount (Rs)
1	Supply of Cat 6 LAN cable	Drum	4877.84	585.34	5463.18	8	43705.44
2	Supply of 12F unarmored OFC (metal free) for laying over the Plate form shed (Make: Make: Finolex , Fincabe ,ASKH, Sterlite or equivalent)	Mtrs	17.98	2.16	20.14	8000	161120
3	Supply of 24 Fibre (2*12 , (SC type) FMS with all accessories (TVS,Veekey , R&M or equivalent)	Nos	3534.82	424.18	3959	24	95016
4	Supply of SC - LC Patch Cord (3 Mtr.) (3M, TE Connectivity, R&M make or equivalent)	Nos	97.32	11.68	109	128	13952
5	Supply of SC - SC Patch Cord (1 Mtr.), (3M, TE Connectivity, R&M make or equivalent)	Nos	97.32	11.68	109	128	13952
6	Supply of PVC insulated 3 Core 4 Sqmm, 12 AWG , 12.1 KV grade outdoor strengthened Copper cable for UPS supply distribution (Make: Finolex , Fincabe or equivalent)	Mtrs	76.30	9.16	85.46	4000	341840
7	Supply of PVC insulated 3 Core 6 Sqmm 12 AWG , 12.1 KV grade outdoor strengthened Copper cable for UPS supply distribution (Make: Finolex , Fincabe or equivalent)	Mtrs	112.50	13.50	126	1600	201600
8	Supply & Installation of 3 pin socket protected by 6/10A MCB as per ISI Standard in suitable PVC/Metallic Box for each Access Switch racks, Fiber Switch racks and UPS racks (of reputed make)	nos	635.71	76.29	712	16	11392
9	Supply and Installation of Power Distribution Board inside the 15U rack along with 6 nos of 6 Amps 3 Pin sockets of reputed make with 16 Amps MCB.	Nos	658.04	78.96	737	8	5896
10	Supply & Installation of 1 nos of 32 Amps dual pole MCB at Energy meter as per ISI Standard in suitable PVC/Metallic Box	Nos	594.76	71.37	666.13	16	10658.08

11	Metallic box of dimension (600 mmX 450mmX 200 mm) of gauge 16 mm for housing electric meter and other items ,along with lock and key facility and powder quoted	Nos	5129.46	615.54	5745	8	45960
12	Supply and installation of single phase Energy meter inside the metallic box supplied vide item 20	Nos	2267.86	272.14	2540	8	20320
13	Supply of 25 mm PVC Conduit Pipe ISI Mark & Installation , Clamping of the same on wall, pole etc. with required clamps & all other installation material as required.	mtr	23.22	2.79	26.01	13600	353736
14	Supply and fixing of 25 mm flexible pipe	mtr	45.74	5.49	51.23	1600	81968
15	Supply and fixing of PVC trough of 50X50 mm with cover of 2mm thick	mtr	204.32	24.52	228.84	160	36614.4
16	Blowing & Drawing of OFC Cable 24F/12F/6F, Power cable and CAT cable through PVC Conduit already installed.	mtr	3.13	0.38	3.51	13600	47736
17	Splicing / Termination of 12 F OFC in FDMS (Splicing /termination of two nos of 12F splicing will be consider as 1 nos of 24F Splicing)	nos	2813.50	337.62	3151.12	48	151253.8
18	Supply of 6U Racks	nos	5134.82	616.18	5751	16	92016
19	Supply of 15U Racks	nos	6065.64	727.88	6793.52	8	54348.16
20	Fixing or mounting of 6U/15U size Rack at suitable height on Wall, Pole. All sorts of Angles, Nuts, Bolts, Clamps and other accessories required for installation to be supplied by Contractor including extension of earth inside the rack with suitable lugs.	nos	1958.04	234.96	2193.00	24	52632
21	Supply and Installation of 1KVA UPS with 3 nos 12 V 65 AH of Battery bank and Battery rack of APC/ Libert/ Statcon Energiaa/Microtek/ Luminous/ Su-Kam or any equivalent make including extension of earth inside the rack with suitable lugs as per the technical specification	nos	26726.79	3207.21	29934.00	8	239472

22	Fixing or mounting of UPS in 15U size Rack on wall /pole . All sorts of Angles, Nuts, Bolts, Clamps and other accessories required for installation to be supplied by contractor this includes collection of material from railtel Store and installation at site and earthing arrangement with suitable lugs.	nos	2565.18	307.82	2873.00	8	22984
23	Supply and installation of metal cage for WIFI Access point as per the diagram available in the tender document, fixing of Access point inside the cage including earthing arrangement with suitable lugs.	nos	1814.29	217.71	2032.00	32	65024
24	Installation of switches/routers, end to end testing of the network & commissioning of network, submission of reports containing OFC (24F/12F) and power cable route, Power taping point position of Rack, UPS, Fiber switches, Access switches, Access Points and routers. This includes submission of As Build Drawing.	Ls	12823.60	1538.83	14362.43	8	114899.4
25	Supply and installation of GI Pipe 40 / 50 / 75 mm as per site requirements	mtr	411.13	49.34	460.46	200	92092
26	Trenching by HDD Machine at depth 1.65 Mtr. for Road/ Track crossing	mtr	621.51	74.58	696.09	40	27843.6
27	Concreting in Rocky areas for OFC protection and to keep the route marker in position	Mtr	166.96	20.04	187.00	40	7480
28	Breaking of pucca road/CC, PF Cutting, Laying of OFC in Trenches and through all types of protections viz HDPE/GI/RCC Pipes etc. as the case may be. This includes restoration of surface.	mtr	242.37	29.08	271.45	160	43432
29	Laying of over head OFC on Electrical poles/existing support.	mtr	6.41	0.77	7.18	2400	17232
30	Earthing arrangement at station	nos	12823.21	1538.79	14362.00	8	114896
31	Supply and installation of Surge protection class B&C of havells / legrands or equivalent	Nos	22227.68	2667.32	24895.00	8	199160
32	Supply of 6 feet Aluminum ladder	Nos	5990.18	718.82	6709.00	8	53672

33	Supply, Installation & Commissioning of Solar Power System- 1 KVA/ 48V/ 1-phase (including PCU/UPS-1KVA/ 48V/1-Phase, Battery 48V/100 Ah PV (Solar Panels)-1KWp, Array Junction Box, ACDB, GI structure, Cables, Earthing & lightning arrangement Makes: APC/ Libert/ Statcon Energiaa /Microtek/Luminous / Su-Kam or any equivalent make including extension of earth inside the rack with suitable lugs as per the technical specification at page no 69 to 71	set	135518.75	16262.25	151781.0	8	1214248
34	Supply and installation of poles including earth work and concreting	Nos	2566.96	308.04	2875.00	8	23000
35	Cost of survey & submission of drawings for permissions from Authorities	Job	8558.04	1026.96	9585.00	8	76680
36	Trenching and Laying of HDPE Duct in normal soil and blowing of OFC Cable.	Mtr	95.94	11.51	107.45	160	17192
Total in figures							41,65,023
Total in Words: Rupees Forty one lakh sixty five thousand twenty three only							
Contractor Quote % percentage on Total Amount (At Par/ above / below) in figures							
Contractor Quote % percentage on Total Amount (At Par/ above / below) in words							

Note:

1. If there is any discrepancy in the Quoted percentage rates both in figures and words, the percentage rates Quoted in words will be taken as final.
2. The percentage rate Quoted should be inclusive of all taxes. **Break-up of taxes to be specified in a separate sheet showing Basic Price, GST@ and others if any etc.**
3. **Imp:** it may please be noted that Locations/Stations mentioned above are indicative and can be vary at the time of execution of contract. However, the location/station will be in the same section or adjacent section

Signature of Tenderer with Seal

SCHEDULE OF REQUIREMENT

Name of the Work: Provision of Wi-Fi services at Rural Railway Stations as per Scope of work, Schedule of Requirement & Specifications given in the Tender Document.

Tender No. RailTel/Tender/OT/SR/HQ/2017-18/61

Locations: 1 Pulla 2 Chebrolu 3 Badampudi 4 Navabpalem 5 Nidadavolu 6 Chagallu 7 Kovvur 8 Godavari

S No	Description (SAC code for all line items is 9954)	Unit	Base Price	GST@12 %	Rate (Rs)	Qty	Amount (Rs)
1	Supply of Cat 6 LAN cable	Drum	4877.84	585.34	5463.18	8	43705.44
2	Supply of 12F unarmored OFC (metal free) for laying over the Plate form shed (Make: Make: Finolex , Fincabe , ASKH, Sterlite or equivalent)	Mtrs	17.98	2.16	20.14	8000	161120
3	Supply of 24 Fibre (2*12 , (SC type) FMS with all accessories (TVS,Veekey , R&M or equivalent)	Nos	3534.82	424.18	3959	24	95016
4	Supply of SC - LC Patch Cord (3 Mtr.) (3M, TE Connectivity, R&M make or equivalent)	Nos	97.32	11.68	109	128	13952
5	Supply of SC - SC Patch Cord (1 Mtr.), (3M, TE Connectivity, R&M make or equivalent)	Nos	97.32	11.68	109	128	13952
6	Supply of PVC insulated 3 Core 4 Sqmm, 12 AWG , 12.1 KV grade outdoor strengthened Copper cable for UPS supply distribution (Make: Finolex , Fincabe or equivalent)	Mtrs	76.30	9.16	85.46	4000	341840
7	Supply of PVC insulated 3 Core 6 Sqmm 12 AWG , 12.1 KV grade outdoor strengthened Copper cable for UPS supply distribution (Make: Finolex , Fincabe or equivalent)	Mtrs	112.50	13.50	126	1600	201600
8	Supply & Installation of 3 pin socket protected by 6/10A MCB as per ISI Standard in suitable PVC/Metallic Box for each Access Switch racks, Fiber Switch racks and UPS racks (of reputed make)	nos	635.71	76.29	712	16	11392
9	Supply and Installation of Power Distribution Board inside the 15U rack along with 6 nos of 6 Amps 3 Pin sockets of reputed make with 16 Amps MCB.	Nos	658.04	78.96	737	8	5896
10	Supply & Installation of 1 nos of 32 Amps dual pole MCB at Energy meter as per ISI Standard in suitable PVC/Metallic Box	Nos	594.76	71.37	666.13	16	10658.08

11	Metallic box of dimension (600 mmX 450mmX 200 mm) of gauge 16 mm for housing electric meter and other items ,along with lock and key facility and powder quoted	Nos	5129.46	615.54	5745	8	45960
12	Supply and installation of single phase Energy meter inside the metallic box supplied vide item 20	Nos	2267.86	272.14	2540	8	20320
13	Supply of 25 mm PVC Conduit Pipe ISI Mark & Installation , Clamping of the same on wall, pole etc. with required clamps & all other installation material as required.	mtr	23.22	2.79	26.01	13600	353736
14	Supply and fixing of 25 mm flexible pipe	mtr	45.74	5.49	51.23	1600	81968
15	Supply and fixing of PVC trough of 50X50 mm with cover of 2mm thick	mtr	204.32	24.52	228.84	160	36614.4
16	Blowing & Drawing of OFC Cable 24F/12F/6F, Power cable and CAT cable through PVC Conduit already installed.	mtr	3.13	0.38	3.51	13600	47736
17	Splicing / Termination of 12 F OFC in FDMS (Splicing /termination of two nos of 12F splicing will be consider as 1 nos of 24F Splicing)	nos	2813.50	337.62	3151.12	48	151253.8
18	Supply of 6U Racks	nos	5134.82	616.18	5751	16	92016
19	Supply of 15U Racks	nos	6065.64	727.88	6793.52	8	54348.16
20	Fixing or mounting of 6U/15U size Rack at suitable height on Wall, Pole. All sorts of Angles, Nuts, Bolts, Clamps and other accessories required for installation to be supplied by Contractor including extension of earth inside the rack with suitable lugs.	nos	1958.04	234.96	2193.00	24	52632
21	Supply and Installation of 1KVA UPS with 3 nos 12 V 65 AH of Battery bank and Battery rack of APC/ Libert/ Statcon Energiaa/Microtek/ Luminous/ Su-Kam or any equivalent make including extension of earth inside the rack with suitable lugs as per the technical specification	nos	26726.79	3207.21	29934.00	8	239472

22	Fixing or mounting of UPS in 15U size Rack on wall /pole . All sorts of Angles, Nuts, Bolts, Clamps and other accessories required for installation to be supplied by contractor this includes collection of material from railtel Store and installation at site and earthing arrangement with suitable lugs.	nos	2565.18	307.82	2873.00	8	22984
23	Supply and installation of metal cage for WIFI Access point as per the diagram available in the tender document, fixing of Access point inside the cage including earthing arrangement with suitable lugs.	nos	1814.29	217.71	2032.00	32	65024
24	Installation of switches/routers, end to end testing of the network & commissioning of network, submission of reports containing OFC (24F/12F) and power cable route, Power tapping point position of Rack, UPS, Fiber switches, Access switches, Access Points and routers. This includes submission of As Build Drawing.	Ls	12823.60	1538.83	14362.43	8	114899.4
25	Supply and installation of GI Pipe 40 / 50 / 75 mm as per site requirements	mtr	411.13	49.34	460.46	200	92092
26	Trenching by HDD Machine at depth 1.65 Mtr. for Road/ Track crossing	mtr	621.51	74.58	696.09	40	27843.6
27	Concreting in Rocky areas for OFC protection and to keep the route marker in position	Mtr	166.96	20.04	187.00	40	7480
28	Breaking of pucca road/CC, PF Cutting, Laying of OFC in Trenches and through all types of protections viz HDPE/GI/RCC Pipes etc. as the case may be. This includes restoration of surface.	mtr	242.37	29.08	271.45	160	43432
29	Laying of over head OFC on Electrical poles/existing support.	mtr	6.41	0.77	7.18	2400	17232
30	Earthing arrangement at station	nos	12823.21	1538.79	14362.00	8	114896
31	Supply and installation of Surge protection class B&C of havells / legrands or equivalent	Nos	22227.68	2667.32	24895.00	8	199160
32	Supply of 6 feet Aluminum ladder	Nos	5990.18	718.82	6709.00	8	53672

33	Supply, Installation & Commissioning of Solar Power System- 1 KVA/ 48V/ 1-phase (including PCU/UPS- 1KVA/48V/1-Phase, Battery 48V/100 Ah PV (Solar Panels)-1KWp, Array Junction Box, ACDB, GI structure, Cables, Earthing & lightning arrangement Makes: APC/ Libert/ Statcon Energiaa/Microtek/Luminous / Su-Kam or any equivalent make including extension of earth inside the rack with suitable lugs as per the technical specification at page no 69 to 71	set	135518.75	16262.25	151781.0	8	1214248
34	Supply and installation of poles including earth work and concreting	Nos	2566.96	308.04	2875.00	8	23000
35	Cost of survey & submission of drawings for permissions from Authorities	Job	8558.04	1026.96	9585.00	8	76680
36	Trenching and Laying of HDPE Duct in normal soil and blowing of OFC Cable.	Mtr	95.94	11.51	107.45	160	17192
Total in figures							41,65,023
Total in Words: Rupees Forty one lakh sixty five thousand twenty three only							
Contractor Quote % percentage on Total Amount (At Par/ above / below) in figures							
Contractor Quote % percentage on Total Amount (At Par/ above / below) in words							

Note:

1. If there is any discrepancy in the Quoted percentage rates both in figures and words, the percentage rates Quoted in words will be taken as final.
2. The percentage rate Quoted should be inclusive of all taxes. **Break-up of taxes to be specified in a separate sheet showing Basic Price, GST@ and others if any etc.**
3. **Imp:** it may please be noted that Locations/Stations mentioned above are indicative and can be vary at the time of execution of contract. However, the location/station will be in the same section or adjacent section

Signature of Tenderer with Seal

SCHEDULE OF REQUIREMENT

Name of the Work: Provision of Wi-Fi services at Rural Railway Stations as per Scope of work, Schedule of Requirement & Specifications given in the Tender Document.

Tender No. RailTel/Tender/OT/SR/HQ/2017-18/62

Locations: 1 Charlapalli 2 Moula Ali 3 Malkajgiri 4 Cavalry Barracks 5 Bolarum 6 Gundla Pochampalli
7 Medchal 8 Manoharabad 9 Masaipet

S No	Description (SAC code for all line items is 9954)	Unit	Base Price	GST@12 %	Rate (Rs)	Qty	Amount (Rs)
1	Supply of Cat 6 LAN cable	Drum	4877.84	585.34	5463.18	9	49168.62
2	Supply of 12F unarmored OFC (metal free) for laying over the Plate form shed (Make: Make: Finolex , Fincabe ,ASKH, Sterlite or equivalent)	Mtrs	17.98	2.16	20.14	9000	181260
3	Supply of 24 Fibre (2*12 , (SC type) FMS with all accessories (TVS,Veekay , R&M or equivalent)	Nos	3534.82	424.18	3959	27	106893
4	Supply of SC - LC Patch Cord (3 Mtr.) (3M, TE Connectivity, R&M make or equivalent)	Nos	97.32	11.68	109	144	15696
5	Supply of SC - SC Patch Cord (1 Mtr.), (3M, TE Connectivity, R&M make or equivalent)	Nos	97.32	11.68	109	144	15696
6	Supply of PVC insulated 3 Core 4 Sqmm, 12 AWG , 12.1 KV grade outdoor strengthened Copper cable for UPS supply distribution (Make: Finolex , Fincabe or equivalent)	Mtrs	76.30	9.16	85.46	4500	384570
7	Supply of PVC insulated 3 Core 6 Sqmm 12 AWG , 12.1 KV grade outdoor strengthened Copper cable for UPS supply distribution (Make: Finolex , Fincabe or equivalent)	Mtrs	112.50	13.50	126	1800	226800
8	Supply & Installation of 3 pin socket protected by 6/10A MCB as per ISI Standard in suitable PVC/Metallic Box for each Access Switch racks, Fiber Switch racks and UPS racks (of reputed make)	nos	635.71	76.29	712	18	12816
9	Supply and Installation of Power Distribution Board inside the 15U rack along with 6 nos of 6 Amps 3 Pin sockets of reputed make with 16 Amps MCB.	Nos	658.04	78.96	737	9	6633
10	Supply & Installation of 1 nos of 32 Amps dual pole MCB at Energy meter as per ISI Standard in suitable PVC/Metallic Box	Nos	594.76	71.37	666.13	18	11990.34

11	Metallic box of dimension (600 mmX 450mmX 200 mm) of gauge 16 mm for housing electric meter and other items ,along with lock and key facility and powder quoted	Nos	5129.46	615.54	5745	9	51705
12	Supply and installation of single phase Energy meter inside the metallic box supplied vide item 20	Nos	2267.86	272.14	2540	9	22860
13	Supply of 25 mm PVC Conduit Pipe ISI Mark & Installation , Clamping of the same on wall, pole etc. with required clamps & all other installation material as required.	mtr	23.22	2.79	26.01	15300	397953
14	Supply and fixing of 25 mm flexible pipe	mtr	45.74	5.49	51.23	1800	92214
15	Supply and fixing of PVC trough of 50X50 mm with cover of 2mm thick	mtr	204.32	24.52	228.84	180	41191.2
16	Blowing & Drawing of OFC Cable 24F/12F/6F, Power cable and CAT cable through PVC Conduit already installed.	mtr	3.13	0.38	3.51	15300	53703
17	Splicing / Termination of 12 F OFC in FDMS (Splicing /termination of two nos of 12F splicing will be consider as 1 nos of 24F Splicing)	nos	2813.50	337.62	3151.12	54	170160.48
18	Supply of 6U Racks	nos	5134.82	616.18	5751	18	103518
19	Supply of 15U Racks	nos	6065.64	727.88	6793.52	9	61141.68
20	Fixing or mounting of 6U/15U size Rack at suitable height on Wall, Pole. All sorts of Angles, Nuts, Bolts, Clamps and other accessories required for installation to be supplied by Contractor including extension of earth inside the rack with suitable lugs.	nos	1958.04	234.96	2193.00	27	59211
21	Supply and Installation of 1KVA UPS with 3 nos 12 V 65 AH of Battery bank and Battery rack of APC/ Libert/ Statcon Energiaa/Microtek/ Luminous/ Su-Kam or any equivalent make including extension of earth inside the rack with suitable lugs as per the technical specification	nos	26726.79	3207.21	29934.00	9	269406

22	Fixing or mounting of UPS in 15U size Rack on wall /pole . All sorts of Angles, Nuts, Bolts, Clamps and other accessories required for installation to be supplied by contractor this includes collection of material from railtel Store and installation at site and earthing arrangement with suitable lugs.	nos	2565.18	307.82	2873.00	9	25857
23	Supply and installation of metal cage for WIFI Access point as per the diagram available in the tender document, fixing of Access point inside the cage including earthing arrangement with suitable lugs.	nos	1814.29	217.71	2032.00	36	73152
24	Installation of switches/routers, end to end testing of the network & commissioning of network, submission of reports containing OFC (24F/12F) and power cable route, Power tapping point position of Rack, UPS, Fiber switches, Access switches, Access Points and routers. This includes submission of As Build Drawing.	Ls	12823.60	1538.83	14362.43	9	129261.87
25	Supply and installation of GI Pipe 40 / 50 / 75 mm as per site requirements	mtr	411.13	49.34	460.46	225	103603.5
26	Trenching by HDD Machine at depth 1.65 Mtr. for Road/ Track crossing	mtr	621.51	74.58	696.09	45	31324.05
27	Concreting in Rocky areas for OFC protection and to keep the route marker in position	Mtr	166.96	20.04	187.00	45	8415
28	Breaking of pucca road/CC, PF Cutting, Laying of OFC in Trenches and through all types of protections viz HDPE/GI/RCC Pipes etc. as the case may be. This includes restoration of surface.	mtr	242.37	29.08	271.45	180	48861
29	Laying of over head OFC on Electrical poles/existing support.	mtr	6.41	0.77	7.18	2700	19386
30	Earthing arrangement at station	nos	12823.21	1538.79	14362.00	9	129258
31	Supply and installation of Surge protection class B&C of havells / legrands or equivalent	Nos	22227.68	2667.32	24895.00	9	224055
32	Supply of 6 feet Aluminum ladder	Nos	5990.18	718.82	6709.00	9	60381

33	Supply, Installation & Commissioning of Solar Power System- 1 KVA/ 48V/ 1-phase (including PCU/UPS-1KVA/ 48V/1-Phase, Battery 48V/100 Ah PV (Solar Panels)-1KWp, Array Junction Box, ACDB, GI structure, Cables, Earthing & lightning arrangement Makes: APC/ Libert/ Statcon Energiasa/Microtek/Luminous / Su-Kam or any equivalent make including extension of earth inside the rack with suitable lugs as per the technical specification at page no 69 to 71	set	135518.75	16262.25	151781.0	9	1366029
34	Supply and installation of poles including earth work and concreting	Nos	2566.96	308.04	2875.00	9	25875
35	Cost of survey & submission of drawings for permissions from Authorities	Job	8558.04	1026.96	9585.00	9	86265
36	Trenching and Laying of HDPE Duct in normal soil and blowing of OFC Cable.	Mtr	95.94	11.51	107.45	180	19341
Total in figures							46,85,651
Total in Words: Rupees Forty Six lakh Eighty Five thousand six hundred fifty one only							
Contractor Quote % percentage on Total Amount (At Par/ above / below) in figures							
Contractor Quote % percentage on Total Amount (At Par/ above / below) in words							

Note:

1. If there is any discrepancy in the Quoted percentage rates both in figures and words, the percentage rates Quoted in words will be taken as final.
2. The percentage rate Quoted should be inclusive of all taxes. **Break-up of taxes to be specified in a separate sheet showing Basic Price, GST@ and others if any etc.**
3. **Imp:** it may please be noted that Locations/Stations mentioned above are indicative and can be vary at the time of execution of contract. However, the location/station will be in the same section or adjacent section

Signature of Tenderer with Seal

SCHEDULE OF REQUIREMENT

Name of the Work: Provision of Wi-Fi services at Rural Railway Stations as per Scope of work, Schedule of Requirement & Specifications given in the Tender Document.

Tender No. RailTel/Tender/OT/SR/HQ/2017-18/63

Locations: 1 Wadiaram 2 Mirzapalli 3 Akanapet 4 Bhiknur 5 Talmadla 6 Kamareddy 7 Uppalavai
8 Indalvai 9 Dichpalli 10 Jankampet

S No	Description (SAC code for all line items is 9954)	Unit	Base Price	GST@12 %	Rate (Rs)	Qty	Amount (Rs)
1	Supply of Cat 6 LAN cable	Drum	4877.84	585.34	5463.18	10	54631.8
2	Supply of 12F unarmored OFC (metal free) for laying over the Plate form shed (Make: Make: Finolex , Fincabe ,ASKH, Sterlite or equivalent)	Mtrs	17.98	2.16	20.14	10000	201400
3	Supply of 24 Fibre (2*12 , (SC type) FMS with all accessories (TVS,Veekey , R&M or equivalent)	Nos	3534.82	424.18	3959	30	118770
4	Supply of SC - LC Patch Cord (3 Mtr.) (3M, TE Connectivity, R&M make or equivalent)	Nos	97.32	11.68	109	160	17440
5	Supply of SC - SC Patch Cord (1 Mtr.) , (3M, TE Connectivity, R&M make or equivalent)	Nos	97.32	11.68	109	160	17440
6	Supply of PVC insulated 3 Core 4 Sqmm, 12 AWG , 12.1 KV grade outdoor strengthened Copper cable for UPS supply distribution (Make: Finolex , Fincabe or equivalent)	Mtrs	76.30	9.16	85.46	5000	427300
7	Supply of PVC insulated 3 Core 6 Sqmm 12 AWG , 12.1 KV grade outdoor strengthened Copper cable for UPS supply distribution (Make: Finolex , Fincabe or equivalent)	Mtrs	112.50	13.50	126	2000	252000
8	Supply & Installation of 3 pin socket protected by 6/10A MCB as per ISI Standard in suitable PVC/Metallic Box for each Access Switch racks, Fiber Switch racks and UPS racks (of reputed make)	nos	635.71	76.29	712	20	14240
9	Supply and Installation of Power Distribution Board inside the 15U rack along with 6 nos of 6 Amps 3 Pin sockets of reputed make with 16 Amps MCB.	Nos	658.04	78.96	737	10	7370
10	Supply & Installation of 1 nos of 32 Amps dual pole MCB at Energy meter as per ISI Standard in suitable PVC/Metallic Box	Nos	594.76	71.37	666.13	20	13322.6

11	Metallic box of dimension (600 mmX 450mmX 200 mm) of gauge 16 mm for housing electric meter and other items ,along with lock and key facility and powder quoted	Nos	5129.46	615.54	5745	10	57450
12	Supply and installation of single phase Energy meter inside the metallic box supplied vide item 20	Nos	2267.86	272.14	2540	10	25400
13	Supply of 25 mm PVC Conduit Pipe ISI Mark & Installation , Clamping of the same on wall, pole etc. with required clamps & all other installation material as required.	mtr	23.22	2.79	26.01	17000	442170
14	Supply and fixing of 25 mm flexible pipe	mtr	45.74	5.49	51.23	2000	102460
15	Supply and fixing of PVC trough of 50X50 mm with cover of 2mm thick	mtr	204.32	24.52	228.84	200	45768
16	Blowing & Drawing of OFC Cable 24F/12F/6F, Power cable and CAT cable through PVC Conduit already installed.	mtr	3.13	0.38	3.51	17000	59670
17	Splicing / Termination of 12 F OFC in FDMS (Splicing /termination of two nos of 12F splicing will be consider as 1 nos of 24F Splicing)	nos	2813.50	337.62	3151.12	60	189067.2
18	Supply of 6U Racks	nos	5134.82	616.18	5751	20	115020
19	Supply of 15U Racks	nos	6065.64	727.88	6793.52	10	67935.2
20	Fixing or mounting of 6U/15U size Rack at suitable height on Wall, Pole. All sorts of Angles, Nuts, Bolts, Clamps and other accessories required for installation to be supplied by Contractor including extension of earth inside the rack with suitable lugs.	nos	1958.04	234.96	2193.00	30	65790
21	Supply and Installation of 1KVA UPS with 3 nos 12 V 65 AH of Battery bank and Battery rack of APC/ Libert/ Statcon Energiaa/Microtek/ Luminous/ Su-Kam or any equivalent make including extension of earth inside the rack with suitable lugs as per the technical specification	nos	26726.79	3207.21	29934.00	10	299340

22	Fixing or mounting of UPS in 15U size Rack on wall /pole . All sorts of Angles, Nuts, Bolts, Clamps and other accessories required for installation to be supplied by contractor this includes collection of material from railtel Store and installation at site and earthing arrangement with suitable lugs.	nos	2565.18	307.82	2873.00	10	28730
23	Supply and installation of metal cage for WIFI Access point as per the diagram available in the tender document, fixing of Access point inside the cage including earthing arrangement with suitable lugs.	nos	1814.29	217.71	2032.00	40	81280
24	Installation of switches/routers, end to end testing of the network & commissioning of network, submission of reports containing OFC (24F/12F) and power cable route, Power tapping point position of Rack, UPS, Fiber switches, Access switches, Access Points and routers. This includes submission of As Build Drawing.	Ls	12823.60	1538.83	14362.43	10	143624.3
25	Supply and installation of GI Pipe 40 / 50 / 75 mm as per site requirements	mtr	411.13	49.34	460.46	250	115115
26	Trenching by HDD Machine at depth 1.65 Mtr. for Road/ Track crossing	mtr	621.51	74.58	696.09	50	34804.5
27	Concreting in Rocky areas for OFC protection and to keep the route marker in position	Mtr	166.96	20.04	187.00	50	9350
28	Breaking of pucca road/CC, PF Cutting, Laying of OFC in Trenches and through all types of protections viz HDPE/GI/RCC Pipes etc. as the case may be. This includes restoration of surface.	mtr	242.37	29.08	271.45	200	54290
29	Laying of over head OFC on Electrical poles/existing support.	mtr	6.41	0.77	7.18	3000	21540
30	Earthing arrangement at station	nos	12823.21	1538.79	14362.00	10	143620
31	Supply and installation of Surge protection class B&C of havells / legrands or equivalent	Nos	22227.68	2667.32	24895.00	10	248950
32	Supply of 6 feet Aluminum ladder	Nos	5990.18	718.82	6709.00	10	67090

33	Supply, Installation & Commissioning of Solar Power System- 1 KVA/ 48V/ 1-phase (including PCU/UPS-1KVA/48V/1-Phase, Battery 48V/100 Ah PV (Solar Panels)-1KWp, Array Junction Box, ACDB, GI structure, Cables, Earthing & lightning arrangement Makes: APC/ Libert/ Statcon Energiaa/Microtek/Luminous / Su-Kam or any equivalent make including extension of earth inside the rack with suitable lugs as per the technical specification at page no 69 to 71	set	135518.75	16262.25	151781.00	10	1517810
34	Supply and installation of poles including earth work and concreting	Nos	2566.96	308.04	2875.00	10	28750
35	Trenching and Laying of HDPE Duct in normal soil and blowing of OFC Cable.	Mtr	95.94	11.51	107.45	200	21490
36	Cost of survey & submission of drawings for permissions from Authorities	Job	8558.04	1026.96	9585.00	10	95850
Total in figures							52,06,279
Total in Words: Rupees Fifty two lakh six thousand two hundred and seventy nine only							
Contractor Quote % percentage on Total Amount (At Par/ above / below) in figures							
Contractor Quote % percentage on Total Amount (At Par/ above / below) in words							

Note:

1. If there is any discrepancy in the Quoted percentage rates both in figures and words, the percentage rates Quoted in words will be taken as final.
2. The rates specified in SOR are inclusive of GST@12%. Break up Rates with HSN Code is at Annexure-1 & percentage rate Quoted should be inclusive of all taxes. **Break-up of taxes to be specified in a separate sheet showing Basic Price, GST@ and others if any etc.**
3. **Imp:** it may please be noted that Locations/Stations mentioned above are indicative and can be vary at the time of execution of contract. However, the location/station will be in the same section or adjacent section

Signature of Tenderer with Seal

SECTION - II

CHAPTER - I

INSTRUCTIONS TO TENDERERS

AND

CONDITIONS OF TENDERING

SECTION - II CHAPTER - I

INSTRUCTIONS TO TENDERERS AND CONDITIONS OF TENDERING INDEX

1. **General Instructions**
2. **Interpretations**
3. **Local Conditions**
4. **Compliance to Tender Conditions, Specifications and Drawings**
5. **Earnest Money/Bid Guarantee**
6. **Submission of Offers**
7. **Constitution of Firm and Power of Attorney**
8. **Unit Prices**
9. **Validity of Offer**
10. **Rates During Negotiations**
11. **Income Tax Clearance Certificate**
12. **Period of Completion and Time Progress Graph**
13. **Non-transferability and Non-refundability**
14. **Errors, Omissions and Discrepancies**
15. **Wrong Information by Tenderer**
16. **Qualifying Criteria**
17. **Meaning of similar Work**
18. **System Performance Guarantee**
19. **Authority for Acceptance**
20. **Agreement**
21. **Foreign Exchange**
22. **Tenderer' Address**

SECTION - II
CHAPTER-I

INSTRUCTIONS TO TENDERERS AND CONDITIONS OF TENDERING

1. GENERAL INSTRUCTIONS

Tenders are invited on behalf of M/s. RailTel Corporation of India Limited, Secunderabad -500071 from established and reliable contractors for the work of Provision of Wi-Fi services at Rural Railway Stations as per scope of work, Schedule of Requirement and Specifications given in this Tender Document

- 1.1 The Special Conditions of Contract, Instructions to Tenderers and Conditions of Tendering, Technical Specifications & Supplement, Preamble including Schedule of Requirements and all Annexure & Forms etc. shall, hereafter, be collectively referred to as the **"Tender Papers"**.
- 1.2 **Percentage offer:** The tenderers are required to quote **percentage rate** At Par/Above/Below over the total value of Schedule of Requirement separately both in figures and words as indicated in the schedule. If there is any discrepancy in the Quoted rates both in figures and words, the rates Quoted in words will be taken as final

2. INTERPRETATIONS

The following terms wherever occurring in the tender papers and wherever used throughout the execution of the work, shall, unless excluded by or repugnant to the context, have the meaning attributed thereto as follows:

"CONTRACT" Means the Contract resulting from the acceptance by the Purchaser of this Tender whether in whole or in part.

"CONTRACTOR" Means the successful Tenderer, i.e., the Tenderer whose Tender has been accepted either in whole or in part.

"CONTRACTOR'S REPRESENTATIVE" Shall mean a person in supervisory capacity who shall be so declared by the Contractor and who shall be authorized under a duly executed power of attorney to receive materials issued by the Purchaser to the Contractor for the works. He shall be responsible for proper execution of works at each or all places and shall take orders from Purchaser's Engineers and carry out the same.

"ENGINEER / ENGINEER-IN-CHARGE" Shall mean an executive of RailTel In-charge of works and shall include the superior executives of RailTel. He is responsible for ensuring that all field works covered by the contract are carried out in accordance with approved designs, drawings & specifications and conditions of contract as agreed to.

"ENGINEER'S REPRESENTATIVE" Shall mean the supervisor of RailTel in direct charge of the works.

"EQUIPMENT" Means all or any equipment considered necessary by the Purchaser's Engineers for satisfactory operation, as a whole, of the installations.

"MONTH" Means any consecutive period of thirty days.

"MATERIALS" Means all equipments, components, fittings and other materials including raw materials required to complete the work..

"PURCHASER" Means M/S RailTel Corporation of India Limited, 2nd Floor, 'B' Block, Rail Nilayam, Secunderabad – 500 071.

"PURCHASER'S ENGINEER" Means the Regional General Manager of RailTel or successor who will decide all matters relating to design, manufacture, installation and commissioning of the plant and equipment at site.

"SUB-CONTRACTOR" Means an individual or a firm of Contractor or a Company registered

under Indian Company Act or an approved supplier of materials to whom the Contractor sublets portions of the contract.

"CONSIGNEE" Means the person specified in the Acceptance of Tender to whom Stores are to be delivered at the destination.

"INSPECTING OFFICER" Means the person, or organization specified in the contract for the purpose of inspection of stores of work under the contract and includes his/their-authorized representative.

"RailTel" Means M/s. RailTel Corporation of India Limited, Southern Region, 2nd Floor, 'B' Block, Rail Nilayam, Secunderabad – 500 071.

"SITE" Means the areas to be taken up by the permanent works, together with any other area or areas as shall be determined by the Purchaser's Engineer, which may be placed at the disposal of the Contractor for the purpose of the contract and also such area or areas used for store yards, works yards or workshop in proximity of the works as the Purchaser's Engineer may have authorized as an extension of the site, irrespective of the terms and conditions under which they are occupied by the Contractor.

"BLOCK SECTION" Means the distance along the railway track between two consecutive Railway stations.

"TENDERER" Means and includes any firm of engineers or Contractors or any company or body, corporate or otherwise, who submit the Tender which has been invited.

"WORK OR WORKS" Means all or any of the items of the work for which the Tenderer /Contractor has Tendered/contracted according to the specifications, drawings and Annexure hereto annexed or to be implied there from, or incidental thereto or to be hereafter specified or required in such explanatory instructions and drawings, being in conformity with the original specifications, drawings, Annexure and schedules and also such instructions and drawings additional to the aforementioned as may from time to time be issued by the Purchaser's Engineer during the progress of the contracted work.

"WRITING" Includes all matters written, typewritten or printed either in whole or in part.

3. LOCAL CONDITIONS

3.1 It will be imperative on each tenderer to fully acquaint himself with all the local conditions and factors, which would have any effect on the performance of the contract and cost of the stores. The purchaser shall not entertain any request for clarifications from the tenderer regarding such local conditions. No request for the change of price or time schedule of delivery of stores shall be entertained after the offer is accepted by the purchase on account of any local condition or factor.

3.2 The intending tenderer is advised to study the tender papers carefully. Any submission of a quotation by the tenderer shall be deemed to have been done after a careful study and examination of these documents with full understanding of the implication thereof. These conditions and specifications shall be deemed to have been accepted unless otherwise, specifically commented upon by the Tenderer in his quotation. Failure to adhere to anyone or all these instructions may render his offer liable to be ignored without any reference.

3.3 Should a tenderer find discrepancies in, or omission from, the drawings or any of the Tender papers or he has any doubt to their meaning, he should at once notify the RailTel who may send a written clarification to all tenderers.

4. COMPLIANCE TO TENDER CONDITIONS, SPECIFICATIONS & DRAWINGS

4.1 The tenderer shall indicate paragraph by paragraph for each section of the tender document that

either his tender complies in every respect with the requirements of each clause and sub clause or if not, precisely how they differ from the requirements of the tender. In later case, the tenderer shall enclose a separate statement as per proforma given, indicating only the deviations for any clause or sub clause of Special Conditions of Contract, Instructions to Tenderers and Conditions of Tendering, Technical Specifications, Preamble etc. which he proposes with justifications for deviations proposed. The purchaser reserves the right to accept or reject these deviations and his decision thereon shall be final (see Form 5).

- 4.2 The equipment offered shall be in accordance with the drawings and specifications. Details of variation from the drawings and specifications, if any, should be clearly indicated separately for each annexure with justification for deviations proposed. The Purchaser reserves the right to accept or reject these deviations and his decision thereon shall be final.
- 4.3 Firms should give details of similar works carried out giving details of the name of the project, date of award, length of the section, value of the contract, the original execution period and the actual execution time taken.

5 EARNEST MONEY/ BID GUARANTEE

- 5.1 The tenderer shall submit demand draft/bankers cheque for an amount mentioned in preamble for each tender from any scheduled bank along with the tender towards earnest money in favour of RailTel Corporation of India Limited, payable at Secunderabad.

- 5.2 The tenderers shall hold the offer open till such date as specified in Para 9 of this chapter. It being understood that the tender documents have been sold/issued to the tenderer and the tenderer has been permitted to tender in consideration of the stipulation on his part that after submitting his tender he will not rescile from his offer or modify the terms and conditions thereof in a manner not acceptable to RailTel. If the tenderer fails to observe or comply with the foregoing stipulation, the aforesaid amount deposited as Earnest Money shall be liable to be forfeited by the RailTel.

- 5.2.a. No interest is allowed on this Deposit and RailTel Corporation reserves the right to forfeit this Deposit if the successful tenderer fail to submit the Performance Guarantee required by the terms and conditions of the tender. Tenders not accompanied by Earnest Money will be rejected. No bank guarantee for EMD is accepted

5.3 The earnest money may be forfeited:

- 5.3.1 If a tenderer withdraws its tender during the period of tenders validity specified in Clause 9 of Instructions to Tenderers and Conditions of Tendering.
- 5.3.2 In the case of successful tenderer, if the tenderer fails to Sign the contract in accordance with clause 2 of Special Conditions of Contract.
- 5.3.3 To furnish performance guarantee in accordance with clause 3.1 of Special Conditions of Contract.
- 5.4 The earnest money of unsuccessful tenderer will be returned within reasonable time to the unsuccessful tenderer but the RailTel shall not be responsible for any loss or depreciation that may happen to the security for the due performance of the above stipulation to keep offer open for the period specified in the tender documents or to the Earnest Money while in their possession nor be liable to pay interest thereon.
- 5.5 If the tender is accepted, the amount of Earnest Money will be held as security deposit for due and faithful fulfillment of contract. The Earnest Money of successful tenderer will be returned after the Contract Performance Guarantee (Security Deposit) as required under para 3 of Special Conditions of Contract is furnished and formal contract duly signed is received by the purchaser.
- 5.6 Any tender not accompanied by Earnest Money in the approved forms as mentioned in para 5 above will be **summarily rejected**.
- 5.7 The firm registered with National Small Industries Corporation (NSIC) under its Single point registration scheme or registered with any other body specified by Ministry of Micro, Small &

Medium Enterprise (MSME) will be exempted from submission of EMD provided they are registered for the tendered supply/work/service and valid. The documents submitted by the firm shall be duly certified/attested.

6 SUBMISSION OF OFFERS

6.1 All offers in the prescribed forms should be submitted before the time and date fixed for the receipt of the offers. Offers received after the stipulated time and date will be **summarily rejected**.

6.2 In case the date of opening mentioned in the preamble happens to be a holiday, the tender will be received and opened at the same time on the **next working day**.

6.3 All offers shall be either type written or written neatly in indelible ink in English. Each page of the offer must be numbered consecutively. A reference to total number of pages comprising the offer must be made at the top right hand corner of the top page. The supporting documents should be submitted either in original or duly signed by the authorized signatory of the tenderer. The original documents shall be produced for verification when called for.

6.4 All copies of the tender papers shall be signed by the tenderer, on each page including closing page in token of his having studied the tender papers carefully.

6.5 RATES IN FIGURES & WORDS:-

6.5.1 All percentage prices and other information like discounts etc., having a bearing on the price shall be written both in figures and in words in the prescribed offer form. In case of difference in words and figures the amount written in words will be taken in to consideration.

6.5.2 In the event of any discrepancy between unit rate and total cost, the value shown in unit rate will be taken for evaluation purpose.

6.5.3 In case the schedule of requirement Quoted by tenderer is incomplete with reference to tender document, the offer is liable to be rejected.

6.6 ATTESTATION OF ALTERATION: No scribbling is permissible in the tender documents. Tender containing erasures and alterations in the tender documents are liable to be rejected. Any correction made by the tenderer/tenderers in his/their entries must be signed in full (not initialed) by him/them.

6.7 The bid shall consist of the following:

- i) Tender document original signed in all pages
- ii) Offer letter complete. (Form No.1)
- iii) Schedule of Requirements) with percentage rate and amount along with summary duly signed by the tenderer in figures and words.
- iv) Earnest Money in prescribed form
- v) Clause wise compliance to tender conditions & statement of deviations (Para 4). Form No.5
- vi) Supporting documents for eligibility criteria
- vii) Any other information desired to be submitted by the tenderer.

7.1 CONSTITUTION OF FIRM AND POWER OF ATTORNEY- Any individual(s) signing the tender or other documents connected therewith should specify whether he is signing: -

- (a) As sole proprietor of the concern or as attorney of the sole proprietor;
- (b) As a partner or partners of the firm;
- (c) As a Director, Manager or Secretary in the case of Limited Company duly authorized by a resolution passed by the Board of Directors or in pursuance of the authority conferred by Memorandum of Association

- 7.2 In the case of a firm not registered under the Indian Partnership Act, all the partners or the attorney duly authorized by all of them should sign the tender and all other connected documents. The original Power of Attorney or other documents empowering the individual or individuals to sign should be furnished to the Purchaser for verification, if required.
- 7.3 The RailTel will not be bound by Power of Attorney granted by the tenderer or by the changes in the composition of the firm made subsequent to the execution of the contract agreement.
- 7.4 In case where the Power of Attorney partnership deed has not been executed in English, the true and authenticated copies of the translation of the same by Advocate, authorized translators of Courts and Licensed Petition Writers should be supplied by the Contractor(s) while tendering for the work.
- 7.5 The duly notarized Power of Attorney, Partnership Deed, Memorandum of Joint Venture as the case may be in original or duly signed.
8. **PRICES:** The Percentage prices should be Quoted by the Contractor after taking all the relevant factors into consideration and these should be Firm and all-inclusive without any variation clauses. The prices shall be Quoted in rupees for the units under metric system. Reference may be made Special Conditions of Contract (Chapter II Section II). The percentage prices shall be inclusive of all taxes and statutory payments.
9. **VALIDITY OF OFFER:** The tenderer shall keep the offer open for a minimum period of 90 (Ninety) days, from the date of opening of tender. Within that period the tenderer cannot withdraw his offer subject to the period being extended further, if required, by mutual agreement from time to time. Any contravention of the above condition will make the tenderer liable for forfeiture of his Earnest Money.
10. **RATES DURING NEGOTIATION:** The tenderer/s shall not increase his/their Quoted rates in case the RailTel Administration negotiates for reduction of rates. Such negotiations shall not amount to cancellation or withdrawal of the original offer and the rates originally Quoted will be binding on the tenderer/s.
11. **PERIOD OF COMPLETION AND TIME PROGRESS GRAPH:** The works/work to be completed within a period as mentioned in preamble from the date of issue of PO Letter of Acceptance of the tender.
12. **ERRORS, OMISSIONS & DISCREPANCIES:** The Contractor(s) shall not take any advantage of any mis-interpretation of the conditions due to typing or any other error and if in doubt shall bring it to the notice of the Engineer without delay. In case of any contradiction only the printed rules, and books should be followed and no claim for the mis-interpretation shall be entertained.
13. **WRONG INFORMATION BY TENDERER:** If the tenderer/s deliberately give wrong information in his/their tender which creates circumstances for the acceptance of his/their tender the RailTel reserves the right to reject such tender at any stage.
14. **PERFORMANCE GUARANTEE:** The tenderer shall give unqualified and unconditional guarantee that when the equipment / material supplied (or work executed) by him is installed and commissioned at site, it shall achieve the desired objective and that in the event of performance of the system when installed not complying with the end objective or with the specifications, he shall provide further inputs to enable the RailTel to realize the end objectives with full compliance of the specifications contained in these documents. No additional payment will be made to the contractor

for supply of any additional goods and service required in this regard.

15. QUALIFYING CRITERIA PER TENDER:

15.1 General:

15.1.1 Qualifying criteria under this para lays down minimum acceptable qualifications in various areas to ensure that qualified bidder has necessary experience, technical expertise, equipments and financial and human resources to successfully complete the project. In case of a consortium bid the qualification document details etc. must be provided for each member of consortium.

15.1.2 If the tenderer proposes to buy any equipment from other suppliers/ sources, documents indicating the willingness to supply the equipment and provide technical support to the tenderer that may be required during installation, commissioning and warranty period and later on directly to the RailTel, shall be included in the tender.

15.1.3 The tenderer should submit the details of experience of similar works or services in the projects executed / under execution which should clearly bring out expertise in the equipment manufacture or installation etc. as per form no. 10.

15.1.4 For supply of critical materials, the contractor, if he is not a manufacturer, shall submit a certificate from the manufacturer, whose material he intends to supply, to the effect that the manufacturer is willing and capable to supply the material in time so as to enable the contractor to complete the work within the time frame mentioned in the contract.

15.1.5 The tenderer/s must submit along with his/their tender, certificates from the original user for whom the project was undertaken certifying the date of award of contract, date of completion, date of commissioning and the present working state of the system so established. The tenderer shall submit these certificates for all the projects that he has executed which only satisfy the minimum requirements in each case. **The certificates are to be submitted in original or their true copies duly signed by the tenderer to contain the information as per form no. 2.**

15.2 Technical Capability: Tenderer must have completed works of similar nature, as indicated in para 16 below, successfully and satisfactorily of values as indicated below:

(a)Tenderer must have completed successfully and satisfactorily at least one single similar work costing not less than 35 % of the advertised tender value of work during the preceding three years (i.e. current financial year and three previous financial years). Offers not accompanied by user certificates as per Form no 2, will not be considered.

15.3 Financial:

15.3.1 The total contract amount received by the tenderer during the last three years as per current Audited balance sheet should be a minimum of 150% of advertised Tender Value of work. Offers not accompanied by Audited balance sheet will not be considered.

In case the tenderer is quoting for more number of TENDERS, the technical & Financial capability as given in eligibility criteria under cl.no.15, will be multiplied in the same proportion e.g., if the tenderer wants to quote for two tenders, the figures indicated shall be two times in eligibility criteria and so on. Each tender shall be treated as independent tender and evaluated accordingly.

Plant & machinery: The tenderer should furnish the details of the machinery and plant to be deployed, in case the tenderer plans to use mechanized trenching.

If any Tenderer submitting offers for more than one tender then the firm should submit

- a. Separate sealed cover for each tender participating consisting of schedule of requirement of tender, Covering letter with the details of that tender no, DD for EMD, Credential information and supporting documents towards eligibility criteria
- b. One no Tender Document in complete duly signed can be submitted along with any tender schedule i.e. firm who participates in 2/all 5 tenders need not submit 5-tender documents. They have to submit tender schedules and supporting documents i.e. DD, eligibility criteria documents etc in 5 separate covers but one tender document in any of those covers.

- 16. MEANING OF SIMILAR WORKS:** Works similar to the scope of work as contained in this tender shall mean that

"Building of Local Area Network or Campus Area Network or Public Wi-Fi using single mode OFC structured UTP cabling including installation of network, UPS & system integration. In case the PO/Agreement submitted for the above is composite in nature the value of the similar portion of work should meet the prescribed monetary value as per Technical eligibility clause 15 of tender document".

The work should have been executed for Govt/Public sector/reputed telecom service providers/Infrastructure providers

- 17. AUTHORITY OF ACCEPTANCE/EVALUATION OF OFFERS:** The authority for the acceptance of the tender rests with the Purchaser. The tenders received will be evaluated by the Purchaser to ascertain the best acceptable tender in the interest of the Purchaser. However, the purchaser shall not be bound to accept the lowest or any tender or to assign any reason for non-acceptance or rejection of a tender. The purchaser reserves the right to accept any tender in respect of the whole or any portion of the work specified in the tender paper or to sub-divide the work among different Tenderers or to reduce the work or to accept any tender for less than the tendered quantities without assigning any reason whatsoever.

- 18. AGREEMENT:** The successful tenderer/s shall be required to execute an agreement with the representative of RailTel for carrying out the work according to the tender documents as indicated in para 2 of Special Conditions of Contract (Section II Chapter II).

- 19. TENDERER'S ADDRESS:** Tenderer shall state in the tender his postal address fully and clearly. Any communication sent to the tenderers by post at his said address shall be deemed to have reached the tenderer duly & timely, notwithstanding the fact that the communication could not reach the tenderer at all or in time for whatever reason. Important documents shall be sent by Registered Post.

SECTION- II
CHAPTER - II

Special Conditions of Contract I N D E X

Para Subject

1. Tender Document
2. Agreement
3. Security Deposit
4. Contractor's Office & Stores depot
5. Use of Railway Land
6. Program of work.
7. Competent Supervisors
8. Test & Measuring Instruments, Special tools & Installation Material
9. Stores to be supplied by contractor
10. Supply of Technical Literatures, Documentation Drawings & Completion Plan etc.
11. Quality assurance
12. Inspection of materials
13. Inspection of works
14. Quantum of work and variation in Quantities
15. Subletting and assignment
16. Execution of works
17. Maintenance of works
18. Clearance of site
19. Provisional Acceptance
20. Placing in Service & Maintenance Supervision
21. Final Acceptance
22. Warranty
23. Infringement of Patents
24. License as per Govt. of India Contract Labour Act
25. Defaults and Delays
26. Loss Sustained Due to Default and Delay
27. Penalty for Delay in Completion
28. Adherence of time schedule
29. Contractors liabilities for Costs and Damages
30. Unit prices
31. Measurement of works
32. Meaning and interpretation by RailTel to be final
33. Terms of Payments
34. On account payment
35. Final Payments
36. Final Settlement
37. Certificate for MODVAT BENEFITS on bills
38. Deductions from On Account Payment Bills
39. Taxes
40. Insurance
41. Force Majeure Clause
42. Settlement of dispute and Arbitration
43. Termination of Contract

SPECIAL CONDITIONS OF CONTRACT (SCC)

1. TENDER DOCUMENTS

- 1.1 The goods and services required, bidding procedure and contract terms are prescribed in the tender documents. The set of tender documents issued for the purpose of bidding includes the following together with any addendum and corrigendum thereto.

Section-I: Preamble along with schedule of requirements, annexure etc.

Section-II: I) Instructions to tenderers and conditions of tendering.

II) Special conditions of contract.

III) Forms of Tender and annexure etc.

Section-III: Technical specifications and drawings etc.

- 1.2 If the Tender submitted by a Tenderer is accepted and the contract awarded to the Tenderer the various works coming under the purview of the contract shall be governed by tender documents mentioned above.
- 1.3 Any special conditions stated by the Tenderer in the covering letter submitted along with the tender shall be deemed to be a part of the Contract to such extent only as have been explicitly accepted by the RailTel.

2. AGREEMENT

The successful Tenderer shall within 15 days after having been called upon by notice to do so be bound to execute an agreement based on accepted rates and conditions, in such form as the RailTel may prescribe, and lodge the same with the RailTel together with the conditions of contract, specifications and Schedule of prices referred to therein duly complete. The form for agreement is included in Section II, Chapter III (Form No.3).

3. SECURITY DEPOSIT

- 3.1 The security deposit amount will be equal to 5% of contract value for due fulfillment of the contract.
- 3.2 The Earnest Money already paid by the successful Tenderer (see Clause 5 Chapter-I Section-II Instructions to Tenderers and Conditions of Tendering) will be adjusted towards payment of this Security deposit
- 3.3 Balance amount towards SD shall be recovered from the contractor's "on account" bills as under:
- (a) The rate of recovery should be at the rate of 10% of the bill amount till 5 % contract value is achieved.
 - (b) Security Deposit shall be returned to the contractor after the complete physical completion of the complete work as certified by the competent authority and issue of final PAC.
 - (c) No interest will be payable upon the Earnest Money and Security Deposit.

3.4 CONTRACT PERFORMANCE GUARANTEE (PBG)

- 3.4.1 On receipt of the Letter of Acceptance of Tender from the RailTel, the successful Tenderer should give a Performance Guarantee in the form of irrevocable bank guarantee from any Nationalized Bank or Scheduled Bank in the Form given in Tender document amounting to **5% of the contract value.**
- 3.4.2 The Performance Guarantee should be furnished by the successful contractor after letter of acceptance has been issued, but before signing of the agreement. The agreement should normally be signed within 15(fifteen) days after issue of LOA and Performance Guarantee should also be submitted within this time limit. The Instruments for Performance Guarantee should be valid for three months beyond the warranty period (Clause 22 of SCC)
- 3.4.3 Performance Guarantee shall be released after satisfactory completion of the work, and on expiry of the warranty period and on issue of final FAC .The procedure for releasing should be same as

for Security Deposit.

- 3.4.4 Wherever the contracts are rescind, the security deposit should be forfeited and the Performance Guarantee shall be en-cashed.
- 3.4.5 The balance work shall be got done independently without risk and cost of the original contractor.
- 3.4.6 The original contractor shall be debarred from participating in the tender for executing the balance work. If the failed contractor is a Joint Venture (JV) or a partnership firm, then every member/partner of such a firm would be debarred from participating in the tender for the balance work either in his/her individual capacity or as a partner of any other JV/partnership firm.
4. **CONTRACTOR'S OFFICE & STORES DEPOT:** The Contractor shall within ten days of issue of letter of acceptance of tender establish an office and store depot at a convenient place for receiving and storing equipments and materials and progressing field work expeditiously in consultation and with the approval of the purchaser's Engineer. He shall intimate the purchaser's Engineer address thereof to which all correspondence should be sent. Any communication sent to the contractor by post at his said address shall be deemed to have 09.11.2017ed the contractor duly and in time. Important documents shall be sent by Registered post.
5. **USE OF RAILWAY LAND:** Use of Railway land required by the Contractor for construction of temporary offices, quarter(s), hutments etc. for the staff and for storing materials etc., will be permitted to him/them subject to approval by Railways, if available at the charges prescribed by the Railways. The land will be restored to Railways by the Contractor(s) in the same condition as when taken over or in vacant condition as desired by the Engineer after completion of the work or at any earlier day as specified by the Engineer. Failure to do so will make the Contractor(s) liable to pay the cost incurred by the Railway for getting possession of land.
6. **PROGRAMME OF WORK**
 - 6.1 The Contractor shall have necessary resources to execute the work so that the entire work is completed within a period as mentioned in the preamble from the date of issue of Letter of Acceptance of the tender. He shall also have necessary resources to take up the work simultaneously at more than one independent place in order to expedite the completion of work.
 - 6.2 Within a period of 7 days beginning from the date of issue of Letter of Acceptance of Tender the Contractor shall submit the detailed time Schedule for the execution of work based on the conditions in consultation with RailTel to the authority mentioned in the Preamble and approved by the later in writing before commencement of the work.
 - 6.3 The Contractor shall be held responsible for the execution of the work according to the Program given above in full compliance of the various clauses of the Technical specifications, instructions / drawings etc. Failure to comply with any of these will be dealt with as per provision laid down in Conditions of Tendering.
 - 6.4 Approach roads, where ever available can be used for carting materials. While RailTel may facilitate the contractor for getting approval from the Railways, if required, for carting the material to the site, the responsibility for ensuring that the material 09.11.2017es the site on time, lies entirely with the contractor. The contractor has to bear the necessary expenses for carting the material to the site.
 - 6.5 The contractor will program his work in such a manner so as not to interfere in the working and movement of trains.
7. **COMPETENT SUPERVISORS:** The Contractor shall place and keep competent representatives/Supervisors /Engineers as his representative on the works who will be authorized

to receive and acknowledge materials issued by the RailTel and take all orders issued by the RailTel. The said representatives shall be present at site during working hours and any written orders or instructions which the purchaser's Engineer may give to the said representatives of the contractor shall be deemed to have been duly given or communicated to the contractor.

8. TEST & MEASURING INSTRUMENTS AND SPECIAL TOOLS ETC.

8.1 Special tools & instruments required for installation and commissioning of the work as detailed in preamble shall be arranged by contractor at his own cost.

8.2 All tests and measuring instruments and other arrangements required for carrying out all the acceptance tests etc shall be provided by the contractor at his own cost.

9. **STORES TO BE SUPPLIED BY CONTRACTOR:** All materials required for the execution of the contract shall be arranged and supplied by the Contractor as detailed in the scope (Preamble) so as to realize the end objective. The supply of equipments and materials shall also include required installation and other materials and documents etc which may not be specifically mentioned herein but which are usually necessary for completing the work in all respects.

10. **SUPPLY OF TECHNICAL LITERATURES, DOCUMENTATION, DRAWINGS, INSTRUCTION BOOK & COMPLETION PLANS ETC:** The supply of equipment and materials shall include supply of two sets of printed documents from original equipment manufacturers with each equipment as given in technical supplement.

11 **QUALITY ASSURANCE:** In the event of RailTel waving off the inspection, the quality assurance department of the manufacturer shall carry out all the tests as per the specification and issue a certificate indicating clearly the test results and the adherence to the technical specifications. This is without prejudice to the purchaser's right to accept or reject the supplies if not found in conformity to its requirement

12 INSPECTION OF MATERIALS

12.1 All equipments materials fittings and components will be subject to inspection by the purchaser or his representative at the manufacturer's factory/tenderer works before dispatch and no materials shall be dispatched until these are inspected and/or approved. The materials may also be inspected by the purchaser or his representative again at the contractor's depot.

12.2 All materials shall be procured from the manufacturers of repute/their-authorized dealers. Such materials are to be accepted by the Engineer. The Contractor may be required to produce test certificate from the manufacturer wherever called for by the Engineer.

12.3 The cost of equipment and materials, all tests and/or analysis performed for inspection shall be borne by the Contractor.

12.4 The inspection charges, if any, payable to the purchaser's representative for carrying out the inspection shall be borne by the purchaser.

13. **INSPECTION OF WORKS:** The Engineer or his representative may inspect and test the various portions of the work at all stages and shall have full power to reject all or any portion of the work that he may consider to be defective or inferior in quality of materials, workmanship or design in comparison to what is called for in the specification. In the event of rejection of any work already executed and not in accordance with specification as in this tender and/or as determined by the Engineer or which the Contractor has been apprised, the Contractor shall carry out alterations/ replacements to such works to the satisfaction of the Engineer for which no additional expenses will be borne by the RailTel.

14. CHANGES IN THE WORK&VARIATION OF QUANTITIES:

If it becomes necessary or desirable to modify the contract and the specifications and the drawings etc; which may result in quantity variation beyond plus or minus 25 % of the original scope, **RAILTEL** may,

without invalidating the contract, direct that changes shall be made accordingly and no increase in Rates shall be given.

The rates for quantity variations, substituted items and new items of work shall be based on the following in the order indicated:

- i) If a rate exists in the contract for an item having the same or similar specifications as proposed in the revised specifications, the Contractor shall carry out the work at the same rates as already existing in the contract.
- ii) If the rates cannot be determined as at (i) above, or do not exist, the rates shall be derived from the rates for a similar class of work in the contract.
- iii) If the rates cannot be determined as at (i) and (ii) above, the **Contractor** shall be paid after negotiation based on market rate and contractors profit not more than 10%.

Except for minor modifications in the work, not involving extra cost and not inconsistent with the purposes of the work and except on an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order from **RAILTEL** authorizing the extra work or change and no claim for any addition to the contract amount shall be valid unless so ordered.

The quantities quoted in the Schedule are not firm and may be varied.

The Purchaser reserves the right to increase or decrease by up to 25 % of the quantity of goods and services specified in the Schedule of Requirements without any change in unit price of the ordered quantity or other terms and conditions.

However, for variation beyond (+) 25%, the rates shall be negotiated

During course of execution of the main work, if any new works to be carried over in the same Letter of Acceptance/Work Order, Contractor need to execute the same on issuing of Letter of Acceptance/Work Order amendment or any deviation note or LOI for the same

15. SUBLETTING AND ASSIGNMENT: No sub-contracts are permitted.

- a) The **Contractor** shall not sub-contract any part or the whole of the work, without the prior consent of RAILTEL. The **Contractor** may sub-contract parts of the contract, if necessary and in the interest of the project and only to sub- Contractors approved in advance in writing by RAILTEL. The **Contractor** shall be responsible for transmitting specifications and pertinent data to sub- Contractors and ensuring full compliance by them. In such cases even if written permission is given, it shall not relieve the **Contractor** from his obligations under the contract and he shall be fully responsible for all supplies / work done by his sub-Contractors. The **Contractor** shall also be exclusively responsible for the effective planning and co-ordination of the work from sub-Contractors. to ensure proper integration with all works.
- b) It shall be as per the specifications of **RAILTEL** and **RAILTEL** shall have sole discretion to withdraw its consent and have the remaining part performed or executed by any other party of RAILTEL's choice.
- c) Notwithstanding anything contained herein, RAILTEL shall have sole discretion to nominate sub-contractors for specialized activities/works or even for part of specified works, before or during the course of Work, wherever required in the opinion of RAILTEL on account of slow progress, poor quality or Contractor's lack of sufficient mobilization.

16. EXECUTION OF WORK: All the works shall be executed in strict conformity to the provisions of the contract document and with such explanatory detailed drawings, specifications and instructions as may be approved from time to time based on detailed design and engineering carried out by contractor in line with requirements as per contract document. The contractor shall be responsible for ensuring that the work throughout are executed in the most substantial,

proper and workmanlike manner with the quality of material and workmanship in strict accordance with the specifications and as per sound industrial practices and to the entire satisfaction of the RailTel.

17. **MAINTENANCE OF WORKS:** The contractor shall at all times during the progress and continuance of the works and also for the period of maintenance specified in the tender form and after the date of passing of the certificate of completion by the RailTel's representative or any other earlier date subsequent to the completion of the works that may be fixed by RailTel's representative be responsible for and effectively maintain and uphold in good, substantial, sound and perfect condition all and every part of the works and shall make good from time to time and at all times, as often as the RailTel's representative shall require, any damage or defect that may, during the above period, arise in or be discovered or be in any way connected with the works provided that such damage or defect is not directly caused by errors in the contract documents, act of providence or insurrection or civil riot and the contractor shall be liable for and shall pay and make good to the RailTel or other persons legally entitled thereto whenever required by the RailTel's representative so to do, all losses, damages, costs and expenses they or any of them may incur or be put or be liable to, by reason or inconsequence of the operations of the contractor or his failure in any respect.
18. **CLEARANCE OF SITE:** At the end of the work at each location the Contractor shall as a part of his Contractual obligation leave the area completely neat and clean.
19. **PROVISIONAL ACCEPTANCE**
 - 19.1 Immediately after the completion of the work at each block section or after completion of work in a Zonal Rly/Division/Railway Station/Location hereinafter referred as sub-section the contractor shall certify and advise the purchaser in writing that the installation is (i) complete (ii) ready for satisfactory commercial service and (iii) ready to be handed over.
 - 19.2 The test or tests specified in Technical supplement (section III) will be conducted jointly by purchaser and contractor as soon as possible after receipt of advice of completion of one sub - section by purchaser from the contractor. The test schedule shall be finalized by mutual discussion between the contractor and M/S RailTel Corporation of India Limited, Secunderabad. Any component, modules, sub assemblies or equipment failing during the commissioning test shall be replaced/repared free of cost by tenderer.
 - 19.3 Purchaser's Engineer shall issue a **Provisional Acceptance certificate** for successful commissioning of a section covering all materials and services included in the Schedule of works after the final acceptance test as per the approved test procedures have been completed and the performance has been found to meet the specifications. RailTel's decision in this respect shall be final. The Provisional Acceptance Certificate shall be signed by both the parties. The period of maintenance of works shall commence from the date of issue of last Provisional Acceptance Certificate.
20. **PLACING IN SERVICE & MAINTENANCE SUPERVISION :** Deleted
21. **FINAL ACCEPTANCE**
 - 21.1 The final acceptance of the works completed shall take effect from the date of expiry of warranty period after issue of Provisional Acceptance Certificates are issued or brought into commercial operation, provided in any case that the contractor has complied fully with his obligations in respect of each item under the contract.
 - 21.2 Notwithstanding the issue of Final Acceptance Certificate the contractor and the purchaser (subject to Sub Clause as above) shall remain liable for fulfillment of any obligation incurred under the provision of the contract prior to the issue of Final Acceptance Certificate which remains unperformed at the time such certificate is issued and for determining the nature and extent of such obligation the contract shall be deemed to remain in force between the parties hereto.

22. WARRANTY

- 22.1 The work carried out and equipment supplied by the Contractor shall be guaranteed against the defects for a period of **twelve months** from the date of issue of Provisional Acceptance Certificate. The contractor shall provide comprehensive warranty maintenance for all the items supplied and work carried out by him against this tender.
- 22.2 The replacement of defective materials supplied by contractor at site shall be undertaken by RailTel. However, incase RailTel representative is unable to rectify the defects , maintenance engineers of the contractor shall go to the site immediately on receipt of the intimation to assist RailTel representative for diagnostic and rectification of the fault. RailTel shall not bear any expenditure for any such traveling or during the maintenance and warranty period.
- 22.4 During the free warranty maintenance period contractor should stabilize the working of the system. RailTel has the right to extend the period of supervision of the maintenance free of cost till the system stabilizes and works satisfactorily for a reasonable period of time. If during the time any equipment etc. is to be added or deficiencies are to be rectified to make the system work trouble free the same also will have to be done by the contractor free of cost as to make good of all the deficiencies.

23. INFRINGEMENTS OF PATENTS:

- (a) The Contractor is forbidden to use any patents or registered drawings, processes or patterns in fulfilling his contract without prior consent in writing of the owner of such patents, drawings, patterns or trade marks except where these are specified by the Purchaser himself. Royalties where payable for the use of such patented processes, registered drawings or patterns shall be borne exclusively by the Contractor. The Contractor shall advise the Purchaser of any proprietary rights that may exist on such processes, drawings or patterns, which he may use of his own accord.
- (b) In the case of patents taken out by the Contractor of the drawings or patterns registered by him or of those patents, drawings or patterns for which he holds a license, the signing of the contract automatically gives the Purchaser the right to repair by himself the purchased articles covered by the patent or by any person or body chosen by him and to obtain from any sources he desires the component parts required by him for carrying out the repair work. In the event of infringement of any patent rights due to above action of the Purchaser he shall be entitled to claim damages from the Contractor on the grounds of any loss of any nature which he may suffer e.g. in the case of attachment because of counterfeiting.

- 24. LICENSE AS PER GOVT. OF INDIA CONTRACT LABOUR ACT:** The Contractors are required to produce license as enjoined in the Government of India Contract Labour (Regulation and Abolition) Act (1978) with latest amendments, if any. They shall not be allowed to undertake or execute any work through contract Labour except under and in accordance with a license issued under the said Act in that behalf by the authorized licensing Officer.

- 25. DEFAULTS AND DELAYS:** The Contractor shall execute the work with due diligence and expedition, keeping to the approved time schedule. Should he refuse or neglect to comply with any reasonable orders given to him in writing by the Purchaser's Engineers in connection with the work or contravene the provision of the Contract or the progress of work lags persistently behind the time schedule due to his neglect, the Purchaser shall be at liberty to give seven days notice in writing to the Contractor requiring him to make good the neglect or contravention complained of and should the Contractor fail to comply with the requisitions made in the notice within seven days from the receipt thereof, it shall be lawful for the purchaser to take the work wholly or in part out of the Contractor's hands without any further reference and get the work or any part thereof, as the case may be, completed by other agencies at the expense of the Contractor without prejudice to any other right or remedy of the Purchaser.

26. LOSS SUSTAINED DUE TO DEFAULTS AND DELAYS: In the event of any loss to the purchaser on account of execution and/or completion of the work or any part thereof by agencies other than the contractor, in terms of para above the contractor shall be liable to reimburse the loss to purchaser without prejudice to the other rights and remedies of the purchaser and the reimbursement in full or in part, as the case may be, shall be met at the option of the purchaser from out of all or any of the following sources viz:

- (a) i) Any amount due and payable to the contractor by the purchaser on any account whatsoever;
- ii) The Contractor's security deposit in the hands of the purchaser as far as available, and;
- iii) Any other assets whatsoever of the contractor;
- (b) In the event of re-imbursement from out of sources (i) and/or (ii) above mentioned, the purchaser shall have the right of appropriation suo moto.

27. PENALTY FOR DELAY IN COMPLETION

- 27.1 The contractor fails to execute and complete the work within the time specified in the Agreement or within the period of extension granted the contractor shall accept reduction in the total amount payable to him by the purchaser at the rate of **0.5% per week or part thereof** (rounded off to the nearest whole number) of the total value of the contract for the actual delay occasioned beyond the appointed time by which the work shall have been completed under the contract.
- 27.2 The total value of penalty on account of above shall be **limited to maximum of 10% (Ten percent)** of the total contract value.
- 27.3 Such reduction shall be accepted by the purchaser in full satisfaction of the contractor's liability arising from delay only. This penalty for delay in completion will be applicable separately for each stage of completion of work when two or more stage of completion, are specified in the contract. The purchaser's engineer shall at his sole discretion specify a time limit within which the unfinished portion of the work shall be completed after serving on the contractor a notice of Purchaser's intention to recover the said penalty in Form 11. In the event of failure of the contractor, the purchaser shall be at liberty to take action in accordance with provisions in Para 33 and 34.

NOTE: For purpose of this para the value of work shall be calculated on the basis of unit prices included in schedule of requirements.

27.4 **Maintenance Block:** deleted

28 ADHERENCE OF TIME SCHEDULE

- 28.1 Timely completion of the work is the essence of the contract. While delay in execution will attract penalty, early completion will be rewarded.
- 28.2 If any delay as aforesaid shall have arisen from any cause which the Purchaser may agree as being a reasonable ground for extension of time the purchaser's engineer or his representative may allow such additional time as he may in his absolute discretion consider to be reasonably justified by the circumstances of the case. Such extensions shall be granted, on request from contractor, with liquidated damages in the Form No.11.

29 CONTRACTOR'S LIABILITIES FOR COSTS AND DAMAGES

29.1 **WITHHOLDING AND LIEN IN RESPECT OF SUMS CLAIMED**

- a) Whenever any claim or claims for payment of a sum of money arises out of or under the contract against the contractor, the Purchaser shall be entitled to withhold and also have lien to retain such sum or sums in whole or in part from the security, if any, deposited by the contractor and for the purpose aforesaid the purchaser shall be entitled to withhold the said cash security

deposit or the security, if any, furnished as the case may be and also have lien over the sum pending finalization or adjudication of any such claim.

b) In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the Contractor, the Purchaser shall be entitled to withhold and have lien to retain to the extent of such claim amount or amounts referred to from any sum or sums found payable or which at any time thereafter may become payable to the Contractor under the same contract or any other department of the Central Government pending finalization or adjudication of any such claims.

c) It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to by the purchaser till the claim arising out of or under the contract is determined by the Arbitrator (if the contract is governed by the Arbitration clause) or by the competent court, as the case may be, and that the contractor will have no claim for interest of damages whatsoever on any account in respect of such withholding or retention under the lien referred to supra and duly notified as such to the Contractor.

d) For the purpose of this clause, where contractor is a partnership firm or a limited company, the purchaser shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company, as the case may be, whether in his individual company or otherwise.

30. Rate, Taxes & Duties

- i. The price quoted in the offer should be firm, fixed indicating the breakup and inclusive of all taxes & duties like import, custom, Anti Dumping, CGST,SGST, IGST, UTGST etc. The offer should be inclusive of packing, forwarding, freight up to destination, insurance charges.
- ii. Bidder shall issue a valid tax invoice to RailTel for availing proper credit of CGST,SGST, IGST, UTGST in case of award of contract. GST will not be reimbursed in the absence of valid tax invoice.
- iii. For all the taxable supplies made by the vendor, the vendor shall furnish all the details of such taxable supplies in the relevant returns to be filed under GST Act.
- iv. If the vendor fails to comply with any of the above, the vendor shall pay to purchaser any expense, interest, penalty as applicable under the GST Act.
- v. In case of incorrect reporting of the supply made by the vendor in the relevant return, leading to disallowance of input credit to purchaser, the vendor shall be liable to pay applicable interest under the GST Act to the credit of purchaser. The same provisions shall be applicable in case of debit/credit notes.
- vi. Tenderer shall quote all inclusive rates, but there shall be break up of basic price and all type of applicable taxes such as SGST,CGST, IGST, UT GST along with respective HSN/SAC code under GST Law (including tax under reverse charges payable by the recipient)
- vii. Wherever the law makes it Statutory for the purchaser to deduct any amount towards GST at sources, the same will be deducted and remitted to the concerned authority.
- viii. In regards to works contract, the tenderer should have registration no for GST in respective State where work is to be executed and shall furnish GST registration certificate along with Tender.
- ix. The imposition of any new tax and /or increase in the aforesaid taxes, duties levies after the last stipulated date for the receipt of tender including extensions if any and the bidder thereupon necessarily and properly pays such taxes/ levies / cess, the bidder shall be reimbursed the amount so paid, provided such payments, if any, is not, in the opinion of RailTel attributable to delay in execution of work within the control of bidder. The bidder shall, within a period of 30 days of the imposition of any such tax or levy or cess, give a written notice thereof to RailTel that the same is given pursuant to this condition, together with all necessary information including details of input credit relating thereto. In the event of non-payment/ default in payment of any of

the above taxes, RailTel reserves the right to with-hold the dues / payments of bidder and make payment to State / Central Government authorities as may be applicable. However, if the rates are reduced after the last stipulated date of tender, bidder has to pass on the benefits to RailTel.

- x. In case of imported equipment: Anti dumping duty if applicable on the equipment proposed to be supplied by OEM/Tenderer as per extant instructions of Ministry of Commerce/Finance Government of India has to be borne by the tenderer and shall be deducted from the amount payable to the bidder at the time of making payment to the firm, if this duty amount is paid to Custom Authority by RailTel.
- xi. Evaluation Criteria: inter se position of the offers will be determined on total unit rate on CIP destination basis which will include basic rate, custom duty GSST, SGST, IGST, GST, freight, insurance and any other charge or cost quoted by the tenderer, including GST payable. On reverse charge by RailTel, wherever applicable.

Note: "In case the successful tenderer is not liable to be registered under CGST/IGST/UTGST/SGST Act, the RailTel shall deduct the applicable GST from his/their bills under reverse charge mechanism (RCM) and deposit the same to the concerned tax authority."

31 MEASUREMENT OF WORKS: Payments for the works shall be made in accordance with approved designs & drawings and measured in relevant units except where provided or otherwise. The measurements will be made generally in accordance with standard engineering practices.

32 MEANING AND INTERPRETATION BY RAILTEL TO BE FINAL: All measurement, method of measurement, meaning intent of specifications and interpretation of Special Conditions of Contract, given and made by the Purchaser or by the Purchaser's Engineer shall be final and binding.

33 TERMS OF PAYMENT:

33.1 All bills shall be submitted to the authority mentioned in Preamble.

33.2 Subject to any deductions or recovery which the RailTel may be entitled to make under contract, the Contractor will be entitled to be paid from time to time by way of 'on account payment' for supply of goods and 'progress payment' for works as in the opinion of the Engineer he has executed in terms of Contract.

34 ON ACCOUNT PAYMENT FOR SUPPLY OF EQUIPMENT & MATERIAL :

34.1 deleted

34.2 PROGRESS PAYMENT

'Progress payment' shall be made separately for each location after completion of work in all respects in particular location.

34.2.1 **90%** (Ninety percent) of the progress payment for **each location/station** shall be made after successful completion of work, joint measurement and testing to the satisfaction of Engineer.

34.2.2 **5%** (Five percent) value of the work completed for **each location/station** shall be made after the issue of Provisional Acceptance Certificate

35 FINAL PAYMENT

35.1 Final payment of **5%** of the contract value shall be made after satisfactory operation and expiring of warranty period of one year after commissioning and issue of Final Acceptance Certificate for all locations/stations.

- 35.2 On the basis of Final Acceptance Certificate from the Purchaser's Engineer for all the works at all the locations covered in this contract and reconciliation of materials issued, the final bill for the balance payment for each item of work shall be submitted by the Contractor along with a clear 'No Claim Certificate'. The Final Acceptance Certificate shall be issued by the Purchaser's Engineer only when he has accepted the work wholly after conducting the acceptance tests as per the details given in the technical specification and supplement.
- 35.3 **VITIATION CLAUSE:** Quantities shown in the schedule are approximate and can vary depending on site conditions. If any vitiation arises on account of variation of quantities, the contractor shall not be paid more than the lowest rate obtained after working out with the final operated quantities.
- 36 FINAL SETTLEMENT**
On expiry of the warranty period and issue of the certificate of final acceptance of the entire installations, the security deposit (Para 3) will be refunded or Bank Guarantee released to the Contractor after adjustment of any dues payable by the contractor to the purchaser.
- 37 CERTIFICATE FOR MODVAT /VAT BENEFITS ON BILLS : deleted**
- 38 DEDUCTION FROM ON ACCOUNT PAYMENT BILLS**
(i) All costs, damages or expenses, which RailTel may have been paid or incurred which under the provisions of contract are Contractor's obligations will be deducted by RailTel from progress payment Bills/Invoice of Contractor, as and when it is understood that such an expense has been incurred or paid for.
(ii) All such claims of RailTel shall, however, be duly supported by appropriate and certified vouchers, receipts or explanations as are available to enable the Contractor to identify such claims.
- 39 TAXES**
- 39.1 The Contractor and all personnel employed by him shall pay such taxes like Income Tax as are payable under statutory laws of India and the Purchaser **WILL NOT ACCEPT** any liability for the same.
- 39.2 Deduction of Income Tax at source as per provisions of Finance Act and Income Tax in force shall be made from the Contractor/Sub-Contractor and the amount so deducted may be credited to the Central Government.
- 39.3 Wherever the law makes it statutory for the Purchaser to deduct any amount towards GST/Sales Tax on Works Contract, the same will be deducted and remitted to the concerned authority.
- 40 INSURANCE**
- 40.1 The Contractor shall take out and keep in force a policy or policies of insurance against all liabilities of the Contractor or the Purchaser at common law or under any statute in respect of accidents to persons who shall be employed by the contractor in or about the site for the purpose of carrying out the works on the site. The Contractor shall also take out and keep in force a policy or policies of Insurance against all recognized risks to their offices and depots. Such insurance shall in all respects be to the approval of the Purchaser and if he so requires in his name.
- 40.2 **INSURANCE OF MATERIALS & INSTALLATIONS:** The Contractor shall take out and keep in force a Policy or policies of Insurance for all materials including RailTel supply materials/equipments irrespective of whether used up in the portion of work already done or kept for the use in the balance portion of the work until such works are provisionally handed over to the Railways. For this purpose, the works are deemed to have been provisionally handed over

- when provisional acceptance certificate is issued for the locations as per para 26.
- 40.3 The Contractor shall not be liable for losses/damages to the materials either used up in the portion of work done or his material kept for use at site, in consequence of Mutiny, or other similar causes over which the Contractor has no control and which cannot be insured. Such losses or damages shall be the liability of the Purchaser and if required by the Purchaser, be made good by the contractor at the cost of the Purchaser.
- 40.4 The Contractor should, however, insure the stores brought to site, against risks in consequence of war and invasion, as required under the Emergency Risk (Goods) Insurance Act in force from time to time.
- 40.5 It may be noted that the beneficiary of the insurance policy should be RailTel or the policies should be pledged in favour of RailTel. The contractor shall keep the policy/policies current till the installations are provisionally handed over to the purchaser. It may also be noted that in the event of contractor's failure to keep the policy current and alive, renewal of policy will be done by purchaser for which the cost of the premium plus 20% of premium shall be recovered from the contractor.
- 40.6 For the purpose of enabling the contractor to take the insurance cover in connection with this contract, the purchaser's Engineer will advise the approximate price of all the RailTel supply materials to the Contractor.
- 41 FORCE MAJEURE CLAUSE:** If at any time, during the continuance of this Contract, the performance, in whole or part, by either party, of any obligation under this contract shall be prevented or delayed by reason of any war, hostility, act of the public enemy, Civil Commotion, Sabotage, Fires, Floods, Earth quakes, explosions, strikes, epidemics, quarantine restrictions, lockouts, any statute, statutory rules/ regulations, order of requisitions issued by any Government Department or Competent Authority of acts of God here-in-after referred to as event) then provided notice of the happening of any such event is give by either party to the other within twenty one days from the date of occurrence thereof, neither party shall, by reason of such event, be entitled to terminate this Contract nor shall either party have any claim for damage against the other in respect of such non-performance or delay in performance, and the obligations under the Contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, PROVIDED FURTHER that if the performance in whole or part of any obligation under this Contract is prevented or delayed by reason of any such event beyond a period as mutually agreed to by the Railways and the Contractor after any event or 60 days in the absence of such an agreement whichever is more, either party may at its option terminate the Contract provided also that if the contract is so terminated under this clause the Railways may at the time of such termination take over from the Contractor at prices as provided for in the contract, all works executed or works under execution.
- 42 SETTLEMENT OF DISPUTE AND ARBITRATION**
- 42.1 Any dispute or difference whatsoever arising between the parties out of or relating to the construction, meaning, scope, operation or effect of this contract or the validity or the breach thereof shall be settled by a sole arbitrator in accordance with provisions contained in Arbitration and Conciliation Act, 1996 as amended and the award made in pursuance thereof shall be binding on the parties. The venue of such arbitration or proceedings thereof shall be New Delhi.
- 4.53.2 All arbitration proceedings shall be conducted in English. Resources against any Arbitral award so rendered may be entered into court having jurisdiction or application may be made to such court for the order of enforcement as the case may be.
- 4.53.3 The Arbitral Tribunal shall consist of the sole Arbitrator if the value of claim is upto Rs. 10 Lakhs. The arbitrator will be appointed by the Chairman cum Managing Director of RailTel Corporation of India Ltd. If the value of claim or amount under dispute is more than Rs. 10 Lakhs, the matter shall be referred to the adjudication of arbitral council. Chairman cum Managing Director/RailTel

shall furnish a panel of three names to the contractor, out of which the contractor will recommend one name to be his nominee and then Chairman cum Managing Director/RailTel shall appoint out of the panel, one name as RailTel's nominee and these two arbitrators with mutual consent appoint a third arbitrator who shall act as deciding. The award of the sole arbitrator or the Arbitral council, as the case may be, shall be final and binding on both the parties, i.e. Contractor and RailTel Corporation of India Ltd.

- 4.53.4 Each of the parties agree that notwithstanding that the matter may be referred to Arbitrator as provided therein, the parties shall nevertheless pending the resolution of the controversy or disagreement continue to fulfill their obligation under this Agreement so far as they are reasonably able to do so.

43 TERMINATION OF CONTRACT OWING TO DEFAULT OF CONTRACTOR

43.1 If the Contractor should:

- (i) Become bankrupt or insolvent or
- (ii) Make an arrangement with or assignment in favour of his creditors, or agree to carry out the contract under a committee of inspection of his creditors, or
- (iii) Being a Company or Corporation, go into liquidation (other than voluntary Liquidation for the purpose of amalgamation or reconstruction) , or
- (iv) Have an execution levied on his goods or property on the works, or
- (v) Assign the contract or any part thereof otherwise than as provided in clause-21 of SCC, or
- (vi) Abandon the contract, or
- (vii) Persistently disregard the instructions of the RailTel's Engineer or contravene any provision of the contract, or
- (viii) Fail to adhere to the agreed programme of work by a margin of 10% of the Stipulated period, or
- (ix) Fail to remove materials from the site or to pull down and replace the work after receiving from the Engineer's notice to the effect that the said materials or works have been condemned or rejected, or
- (x) Fail to take steps to employ competent or additional staff and labour as required under clause 7 of SCC, or
- (xi) Fail to supply material and/or carry out the works as per contractual specifications, or
- (xii) Promise offer or give any bribe, commission, gift or advantage either himself or through his partner, agent or servant to any officer or employee of RailTel or any person on his or on their behalf in relation to the execution of this or any other contract with the RailTel, then and in any of these said cases, the Engineer on behalf of the RailTel may serve the Contractor with a notice in writing to that effect and if the Contractor does not, within 7 days after the delivery to him of such notice, proceed to make good his default in so far as the same is capable of being made good and carry on the work or comply with such directions as aforesaid to the entire satisfaction of the Engineer, the RailTel shall be entitled after giving 48 hours notice in writing under the hand of the Engineer to rescind the contract as a whole or in part or parts (as may be specified in such notice) and adopt either or both the following courses: A final termination notice will be issued by RailTel after expiry of 48 hrs, notice.

(a) To carry out the whole or part of the work from which Contractor has been removed by the employment of the required labour and materials, the cost of which shall include lead, lift, freight, supervision and all incidental charges.

(b) To measure up the whole or part of the work from which the Contractor has been removed and to get it completed by another contractor, the manner and method in which such work is completed shall be in the entire discretion of the Engineer whose decision shall be final; and in both cases (a) and (b) mentioned above the RailTel shall be entitled (i) to forfeit the whole or such portion of the security deposit as it may consider fit, and (ii) to recover from the

Contractor the cost of carrying out the work in excess of the sum which would have been payable according to the certificate of the Engineer to the Contractor if the works had been carried out by the Contractor under the terms of the Contract, such certificate being final and binding upon the Contractor, provided, however, that such recovery shall be made only when the cost incurred in excess is more than the security deposit proposed to be forfeited and shall be limited to the amount by which the cost incurred in excess exceeds the security deposit proposed to be forfeited. The amount thus to be forfeited or recovered may be deducted from any moneys then due which at any time thereafter may become due to the Contractor by the RailTel under this or any other contract or otherwise.

43.2 Provided always that in any case in which any of the powers conferred upon the RailTel by Sub-clause above shall have become exercisable and the same shall not be exercised, the non-exercise thereof shall not constitute a waiver of any of the conditions thereof and such power shall notwithstanding be exercisable in the event of any future case of default by the Contractor for which his liability for past and future shall remain unaffected.

43.3 **RIGHT OF RAILTEL AFTER TERMINATION OF CONTRACT OWING TO DEFAULT OF CONTRACTOR:** In the event of any or several of the courses, referred in Sub-clause 43 above, being adopted:

(a) The Contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any commitments or made any advances on account of or with a view to the execution of the works or the performance of the contract and Contractor shall not be entitled to recover or be paid any sum for any works thereto not actually performed under the contract, unless or until the Engineer shall have certified the performance of such work and the value payable in respect thereof and the Contractor shall only be entitled to be paid the value so certified.

(b) The Engineer or Engineer's Representative shall be entitled to take possession of any materials, tools, implements, machinery or buildings on the works or on the property on which these are being or ought to have been executed, and to retain the employ the same in the further execution of the works or any part thereof until the completion of the works without the Contractor being entitled to any compensation for the use and employment thereof or for wear and tear or destruction thereof.

(c) The Engineer shall, as soon as may be practicable after removal of the Contractor fix and determine exparte or by or after reference to the parties or after such investigation or enquiries as he may consider fit to make or institute and shall certify what amount (if any) has at the time of termination of the contract been reasonably earned by or would reasonably accrue to the Contractor in respect of the work then actually done by him under the contract what was the value of any unused or partially used materials, any constructional plants and any temporary works upon the site.

(d) The RailTel shall not be liable to pay to the Contractor any moneys on account of the contract until the expiration of the period of maintenance and thereafter until the cost of completion and maintenance damages for delay in completion (if any) and all other expenses incurred by the RailTel have been ascertained and the amount thereof certified by the Engineer. The Contractor shall have no claim to any payment of compensation or otherwise howsoever on account of any profit or advantage which he might have derived from execution of the work in full but he did not derive in consequence of termination of the contract. The Contractor shall then be entitled to receive only such sum or sums (if any) as the Engineer may certify would have been due to him upon due completion by him after deduction of the said amount; but if such amount shall exceed the sum which would have been payable to the Contractor, then the Contractor shall upon demand pay to the RailTel the amount of such excess and it shall be deemed a debt due by the Contractor to the RailTel and shall be recoverable accordingly.

SECTION-II

CHAPTER-III		
FORMS OF TENDER		
Form No. 1	:	Offer Letter
Form No. 2	:	User's Certificate
Form No. 3	:	Agreement
Form No. 4	:	Guarantee Bond for Security Deposit/PBG
Form No. 5	:	Statement of Deviations
Form No. 6	:	Standing Indemnity Bond
Form No. 8	:	Acknowledgement for receiving materials from RailTel
Form No. 9	:	Extension of period of completion of work on account of contractor
Form No. 10	:	Qualification /Experience statement

FORM –I

PARA 6.7 (i) Section-II Chapter –I

OFFER LETTER

To
Regional General Manager (Southern Region)
RailTel Corporation of India Limited.,
2nd Floor, 'B' Block, Rail Nilayam,
Secunderabad – 500 071

1. I/We _____ have read the various conditions to tender attached here to and hereby agree to ABIDE BY THE SAID CONDITIONS. I/We also agree to keep this tender open for acceptance for a period of 90 days from the date fixed for opening the same and in default thereof, I/We will be liable for forfeiture of my/our Earnest Money. I/We offer to do the work of "Provision of Wi-Fi services at Rural Railway Stations as per scope of work, Schedule of Requirement and Specifications for Tender no RailTel/Tender/OT/SR/HQ/2017-18/59/60/61/62/63 given in this Tender Document" and the rates Quoted in the attached schedules are hereby bind myself/ourselves to complete the work within 60 days & permissions form concerned authorities I/We also hereby agree to abide by the Various Conditions of Contract and to carry out the work according to the Specifications for materials and works laid down by the RailTel for the present contract.

2. A sum of Rs.-----/-(Rupees ----- thousand only) is herewith forwarded as "Earnest Money". The full value of Earnest Money shall stand forfeited without prejudice to any other rights or remedies if,

a) I/We do not execute the contract agreement within 15 days after receipt of notice issued by the Railways that such documents are ready or, b) I/We do not commence the work within 15 days after receipt of orders to that effect.

3. Until a formal agreement is prepared and executed the acceptance of this tender shall constitute a binding contract between us subject to modifications, as may be mutually agreed to between us and indicated in the "Letter of Acceptance" of my/our offer for this work.

SIGNATURE OF CONTRACTOR (S) Date

CONTRACTOR (S) ADDRESS

SIGNATURE OF WITNESS

- 1.
- 2.

ACCEPTANCE OF TENDERS

I accept the tender as above and agree to pay the rate as entered in Schedule of requirements. WITNESS

1. for and on behalf of
2. RailTel Corporation of India Limited Southern Region, Secunderabad

Date

Form- 2 Para 15.1.5 Section-II Chapter - I

QUALIFYING CRITERIA USER'S CERTIFICATE

Name of the Firm Contract No. & date

Scope of Work

Contract Amount (in Indian Rupees)

Completion Period as per contract Data of Commencement

Actual date of Successful Completion

Quality of work : Satisfactory / unsatisfactory
(Please specify)

Name:

Dated:

Designation:

Signature of the User with Company Seal

रेलटेल
RAILTEL

AGREEMENT

An agreement made this ---- day of ----- 2017, between RailTel Corporation of India Ltd, a company incorporated under the companies Act 1956 and having its Regional Office at 2nd Floor, 'B' Block, Rail Nilayam Building, Secunderabad (here in after referred as RailTel) of the One part; and M/s ----- (Hereinafter referred to as 'contractor') of the other part.

Whereas in response to a call for Tender for "Provision of Wi-Fi services at Rural Railway Stations as mentioned in schedule of requirement as per Tender papers, the Contractor has submitted his offer. The Contractor has submitted his offer.

Whereas the Contractor has agreed with RailTel Corporation of India Ltd for carrying out the work of "Provision of Wi-Fi services at Rural Railway Stations as per scope of work, Schedule of Requirement and Specifications in -----locations as per the Tender document No. RailTel/Tender/OT/SR/HQ/2017-18/59 to 63 for Rs.----- (Rupees ----- only) as per copy of Letter of Acceptance (LOA) of limited tender issued vide letter No. RailTel/Tender/OT/SR/HQ/2017-18/59 to 63 & ERP LOA no -----dt.---.2017 at accepted rates as contained in the said LOA (Annexure-3 hereto) issued by RailTel with schedule of requirement and terms and conditions.

Now this agreement witnesses that in consideration of the payment to be made by RailTel to the Contractor provided, the Contractor shall execute the work of "Provision of Wi-Fi services at Rural Railway Stations mentioned in schedule of requirement as per Schedule of Requirement and Specifications for which the said tender of Contractor has been accepted strictly according to the Annexure-1,2 and 3 hereto and upon such work of "Provision of Wi-Fi services at Rural Railway Stations mentioned in schedule of requirement as per Schedule of Requirement and Specifications & satisfactory completion of work and performance of the system to the satisfaction of the RailTel, the RailTel shall pay to the Contractor at the rates accepted as per the said Annexure-1 and in terms of conditions contained in Annexure-1, 2 & 3.

Whereas M/s. ----- has submitted ---- no. --- dt.----- for Rs.----- drawn on ---- Bank , -----branch, ---- valid till ----- towards the security deposit and submitted ----- no. ---- dt.----- for Rs.----- drawn on ---- Bank-----branch, --- valid till ---towards Performance Bank Guarantee for due fulfillment of the contract.

In the witness where of the parties have hereinto set and subscribed their respective hands and/or seals day and year respectively mentioned against their respective signatures.

Signed and delivered at _____ by Shri _____ for and on behalf of M/s. _____

The contractor within named in the presence of:

1. Signatures Date Name in Block Capitals Address
2. Signatures

Date

Name

in

Block

Capitals

Address

Signed and delivered at _____ for and on behalf of RailTel by Shri _____ {General Manager (Southern Region) or his successor} in the presence of:

1. Signatures Date Name in Block Capitals
 2. Signature Date Name in Block Capitals
- Address:

Annexure '1' Schedule of Works/rates. Annexure' Tender Document. Annexure 'C': copy of PO

(Signature)_____ Dated: Complete with enclosures

Form- 4 Para 3.5/Section-II Chapter – II

GURANTEE BOND FOR SECURITY DEPOSIT/PBG (Form-4)

(On Stamp Paper of requisite value) (To be used by approved Scheduled Banks)

1. In consideration of the Regional General Manager (Southern Region), RailTel Corporation of India Limited, Secunderabad – 500 071 (Herein after called RailTel) having agreed to exempt(Hereinafter called "the said Contractor(s)") from the demand, under the terms and conditions of a Letter of Acceptance No. dated made between and for (hereinafter called " the said Agreement") of security deposit for the due fulfillment by the said Contractor (s) of the terms and conditions contained in the said Agreement, or production of a Bank Guarantee for Rs. (Rs. only). We,(indicate the name of the Bank) hereinafter referred to as " the Bank") at the request of Contractor(s) do hereby undertake to pay the RailTel an amount not exceeding Rs. Against any loss or damage caused to or suffered or would be caused to or suffered by the RailTel by reason of any b09.11.2017 by the said Contractor(s) of any of the terms or conditions contained in the said Agreement.
 2. We, Bank do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on demand from the RailTel stating that the amount is claimed is due by way of loss or damage caused to or would be caused to or suffered by the RailTel by reason of b09.11.2017 by the said Contractor(s) of any of terms or conditions contained in the said Agreement or by reason of the Contractor(s) failure to perform the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.
 3. We, bank undertake to pay to the RailTel any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) / Supplier(s) in any suit or proceedings pending before any court or Tribunal relating thereto our liability under this present being, absolute and unequivocal.
- The payment so made by us under this Bond shall be a valid discharge of our liability for payment thereunder and the Contractor(s) / Supplier(s) shall have no claim against us for making such payment.
4. We,Bank further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the RailTel under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till RailTel certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this Guarantee. Unless a demand or claim under the Guarantee is made on us in writing on or before the (1) We shall be discharged from all liability under this Guarantee thereafter.
 5. We, We, (indicate the name of Bank) Further agree with the RailTel that the RailTel shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the Agreement or to extend time of to postpone for any time or from time to time any of the powers exercisable by the RailTel against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension to the said Contractor(s) or for any forbearance, act or omission on the part of RailTel or any indulgence by the RailTel to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have affect of so relieving us.
 6. This Guarantee will not be discharged due to the change in the Constitution of the Bank or the Contractor(s) Supplier(s).
 7. (Indicate the name of Bank) lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the RailTel in writing.

Dated the day of 2017 for (Indicate the name of the Bank)

Witness 1. Signature&Name

2. Signature&Name

Para 4 Section-II Chapter-I

Statement of Deviations

PROFORMA FOR STATEMENT OF DEVIATIONS

1. The following are the particulars of deviations from requirement of the Instructions to Tenderers and Conditions of Tendering, Preamble and Special conditions of Contract.

1.1	Instructions to Tenderers and Conditions of Tendering			
	Clause	Deviation		Remarks
		(Including Justification)		

1.2	Preamble			
	Clause	Deviation		Remarks
			(Including Justification)	

1.3	Special conditions of Contract.			
	Clause	Deviation		Remarks
			(Including Justification)	

2. The following are the particulars of deviations from requirement of the technical specifications.
Annexure Clause Deviation Remarks (Including Justification)

Note:

Where there is no deviation, the statement should be returned duly signed with an endorsement indicating no deviations.

SIGNATURE AND SEAL OF THE
MANUFACTURER / TENDERER

FORM – 6
Section-II Chapter –II

STANDING INDEMNITY BOND

(For on Account Payments and Stores supplied by RailTel)

(On Stamp paper of Requisite Value)

We, M/s _____ hereby undertake that we hold at our Stores Depot/s at _____ for and on behalf of RailTel Corporation of India Limited in the premises through RGM/RailTel/Southern Region or his successor hereinafter referred to as "the Purchaser" all materials for which 'On Account' payments have been made to us against the Contract for ----- vide letter of Acceptance of Tender No. RailTel/Tender/OT/SR/HQ/2017-18/59 to 63 and the materials handed over to us by the Purchaser for all purpose of execution of the said Contract, until such time the materials are duly erected or otherwise handed over to him.

We shall be entirely responsible for the safe custody and protection of said materials against all risk till they are duly delivered as erected equipment to the purchaser or as he may direct otherwise and shall indemnify the Purchaser against any loss, damage or deterioration whatsoever in respect of the said materials while in our possession and against disposal of surplus materials. The said materials shall at all times be open to inspection by any engineer authorized by the Regional General Manager/Southern Region (whose address will be intimated in due course).

Should any loss, damage or deterioration of materials occur or surplus materials disposed off and refund becomes due, the purchaser shall be entitled to recover from us the full cost as per prices included in the Contract (as applicable) and also compensation for such loss or damage, if any, along with the amount to be refunded without prejudice to any other remedies available to his by deduction from any sum due or any sum which at any time hereafter becomes due to us under the said or any other Contract.

Dated this _____ day of _____

for and on behalf of M/s _____
(Contractor)

Signature of witness

Name and witness in Block letters

Address



FORM – 8 PARA
8.3 of Section-II Chapter – II

ACKNOWLEDGMENT FOR RECEIVING MATERIALS FROM RAILTEL

Station: Date:

Sub: Receipt of Material from RailTel

It is hereby acknowledged that the following materials have been received in full and good condition by me on -----at----- for the work under the Agreement no.-----
-----dated-----

Sl. No.

Description of Material

Quantity Remarks (Meter/No.) if any

Witnessed by:

(Signature of Engineer's Representative)

(Signature of Contractor Representative with or Contractor's Designation)



FORM - 9

Para - 35 Section-II Chapter - I I

EXTENSION OF PERIOD OF COMPLETION OF WORK ON CONTRACTOR'S ACCOUNT

No. Date:

To,

Sub: (i) Name of Work:

(ii) Acceptance Letter No.

(iii) Undertaking / Agreement No.

Ref: (Quote specific application of the Contractor for extension to date, if received).

Dear Sir,

The stipulated date for completion of the work mentioned above isfrom the progress made so far and the present rate of progress, it is unlikely that the work will be completed by the above date (or However, the work was not completed on this date)

Expecting that you may be able to complete the work if some time is given the Regional General Manager (Southern Region), RailTel Corporation of India Limited, Secunderabad although not bound to do so, hereby extends the time for completion from to

Please note that an amount equal to 0.5% of the total value of the contract per week or part thereof (rounded off to the nearest whole number) subject to a maximum of 10% of the total contract value of the works as a recovery for delay in the completion of the work after the expiry of (1) will be recovered from as mentioned in para 35 chapter II, section II of the special conditions of contract for the extended period notwithstanding the grant of this extension. You may proceed with the work accordingly.

The above extension of the completion date will also be subject to the further condition that no increase in rates on any account will be payable to you.

Please intimate within a week of the receipt of this letter your acceptance of the extension on the conditions stated above.

Please note that in the event of declining to accept the extension on the above said conditions or, in the event of your failure after accepting or acting up to this extension to complete the work by (2) here mention the extended date), further action will be taken in terms of relevant para of special conditions of contract.

Yours faithfully, for & on
behalf of RailTel Corporation of India Limited

Note:

1. Give here the stipulated date for completion without any penalty fixed earlier.
2. Here mention the extended date.

FORM - 10**QUALIFICATION / EXPERIENCE**

Details of works executed and under execution during the last 3 financial years and the current financial year should be furnished in the following format.

S.No.	Name of Project and description of work.	Party's Address of whom the work was done	Total value (in Indian Rupees)	Year of completion and schedule period of execution (in months)	Year of completion and actual period of execution (in months)	Remarks

Note: A certificate from the organization, for which the work was executed, should preferably be enclosed to indicate that the contract was satisfactorily performed.

Signature and Seal of the Tenderer

रेलटेल
RAILTEL

SECTION III
CHAPTER 1
Specification of Work/Material

- 1) Conduit pipe : 25 mm diameter and 2 mm thickness of reputed make. PVC should be ISI Mark.
- 2) GI pipe : B Class 40/50/75 mm dia as per site requirement.
- 3) Power cable: 3 core 6 Sq mm and 4 Sq mm of Finolex, Finacab, poly cab or reputed make or equivalent.
- 4) Power socket : should have 2 nos three pin socket ,two nos of switches with MCB/Fuse protection of reputed make with ISI certification .
- 5) SC-LC patch cord : 3 mtr length (3M, TE Connectivity, R&M Make or equivalent)
- 6) SC-SC patch Cord: 1 Mtr Length (3M, TE Connectivity, R&M Make or equivalent)
- 7) **Concreting with CC of 1:2:4** The contractor has to do the protective works of concreting as per requirement. The OFC has to be protected with Concreting 0.3 x 0.3 to the approaches of bridges and culverts in the ratio (PCC 1:2:4 mix) wherever necessary as per the technical specification and as directed by RailTel Engineer-in-Charge at site.
- 8) Specification 12F as per attached construction sheet .
- 9) Earthing arrangement inside the rack to be made by earthing cable and suitable luxes as per requirement
- 10) **Power distribution board:** 6 nos. of 6Amps 3 Pin sockets of reputed make with 16Amps MCB, all enclosed in a powder coated metallic enclosure.
- 11) **FDMS:** 24F FDMS, SC type, telescopic FDMS single mode with 24no's of SC/PC 0(Zero) dB connector & 1.5M length pigtails & two number of Slice trays (each tray can hold 12 splices), suitable for mounting on 19" rack 1U size. The FDMS should be rodent proof with all accessories for rack fixing hardware, splice, protection, sleeves, routing, clamps, cable ties, hose clamps for cable, buffer tubes, IPA etc. Insertion loss 0.3dB for pigtail & less than 0.1dB for adaptor, return loss >=60dB.
- 12) Specification for 6U and 15U Rack

Sl no	Item	Description for 06 U and 15 U racks
1	Sheet thickness and specification	<p>1)Main frame constructed from internal stress free CRC / G.I. / Aluzinc Steel</p> <p>2)The main cabinet shall be made of minimum 1.5 mm thick metal sheet.</p> <p>3)The thickness of front door should be 1.0 mm. Slots should be provided at side of doors so that thickness of hole is not more than 4 mm. Main door should have toughened glass door minimum 3 mm thickness. OEM test certificate for same required with each cabinet.</p> <p>4)Single door opening with one side removable hinges, door with lever lock, soft closing type</p> <p>Thickness of 1.2 mm Fixed Sides covers – perforated at top & bottom, 2 nos 19" adjustable Rail angles of 2 mm thickness of full height of cabinet , Depth member (2 sets),</p> <p>All the cable inlet / outlets shall be provided with removable plate and beading on the edges. All cable holes to have rubber grommets</p>
2	FAN arrangement	<p>Two fans wired through a thermostat & 6 A MCB required at top of rack. Fan should be of minimum 70,000 hours MTTF at 50 degree C, 90 CFM AC 220 -250 V type. MCB to be Schneider / ABB make only</p>

3	Rack Coating	Powder coating colour Siemens grey RAL 7032 epoxy polyester within minimum coating thickness of 60 microns & average coating thickness better than 70 microns
4	Accessories	Bolt Anchor Fasteners: M 8x60 mm (Set of 4) for fixing on Rack /Wall mountable. Cabinet Installation accessories set like grouting plugs, bolts, nuts etc, Cage Nut set 10 sets, one Cable outlet plate each at top & bottom of the cabinet.
5	Feature	Mu marking at front mounting channels The front opening of the rack is envisaged and handling of the system shall be from front side only. Rack should have lock and key facility
6	Power display unit	One 19" mountable PDU with 3 meter power cord & plug. PDU to have 5 nos of 5/15 A universal sockets & one 32 A SP Curve C MCB. MCB to be Schneider / ABB make only
7	Weight	For 15 U size rack : 20 kg +-10% For 06 U Size rack : 15 kg +-10%
8	Size	1) 15 U Rack : Rack 19" (W X D) (600mm x 500mm). 2) 06 U Rack : Rack 19" (W X D) (600mm x 500mm).
9	Earthing Arrangement	Copper Earthing bar 19" mounting 465 X 25 X 3 mm with plated M 6 Nuts & Screws for Lugs (minimum 6). Along with 4 mtrs copper wire for extending Earthing and other related items
10	Front Door Glass	toughened glass door minimum 3 mm thickness

13) UPS: Technical Specification for 1kva Online UPS with one year warranty

Make: Emerson/APC/Compact systems

Input

Power Factor	0.99 at full load
Voltage range(V)	220/230/240 (120-276 @ 50% load) (140-290@ 75% load)
Input CKT breaker	To protect against Input surge
Frequency range (Hz)	50/60 \pm 6% (50/60 Hz settings)
Battery voltage	36 vdc

Output

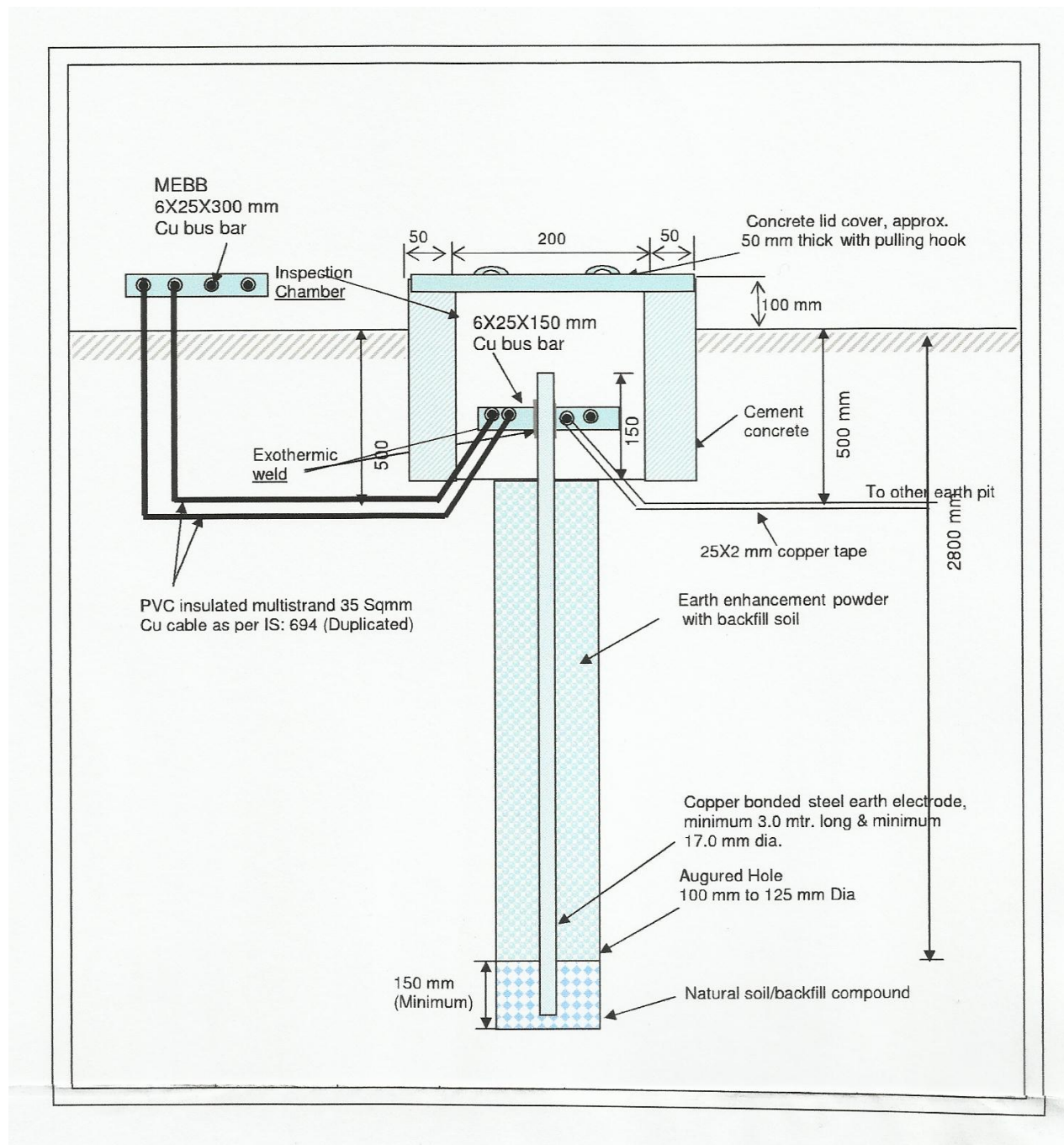
Power (VA)	1000
Power Factor	0.8/800 watt
Voltage(V)	220/230/240 \pm 1%(selectable)
Output Sockets	3 Indian 3 Pin sockets
Frequency(Hz)	50/ 60 \pm 0.5% (Battery mode)
Waveform	Pure Sine Wave
ECO Mode	Must required
Mute botton	Must required to shut off beep sound as on when required
THD	THD < 3% (Linear Load), <6% (no Linear Load)
Overload	105% ~ 130% for 10 minutes. 131% ~ 150% for 1 minute. > 150% for 300 ms

Rack Installation as per site condition.



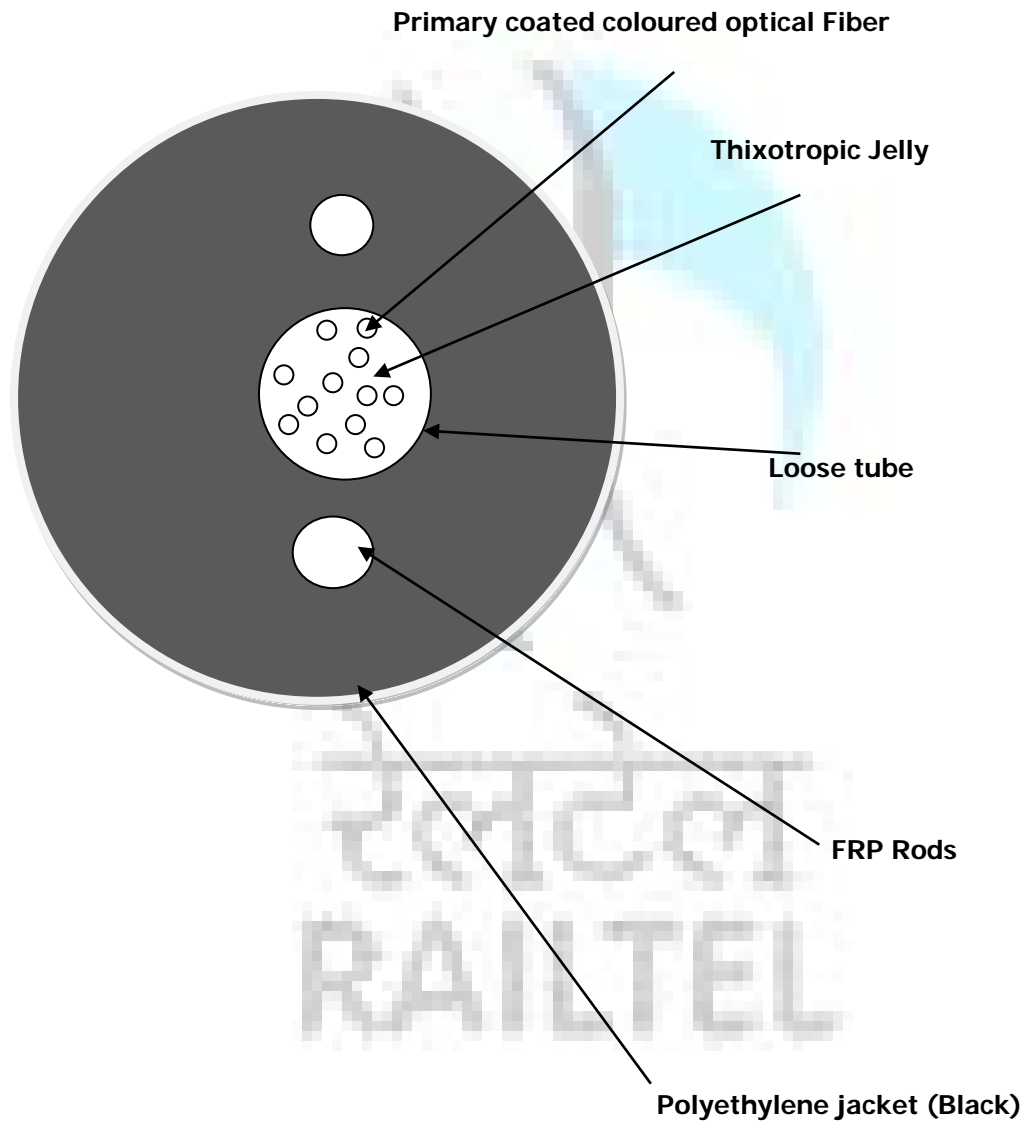
Photograph of Rack(installation)at Railway station FOB/Platform shed as per site condition and as per Instruction of section/site in charge.Installation includes supply of material and proper fixture required for installation as per Railway standard.

Earthing arrangement at railway station



Specification for 12F Fiber Fiber Optic Cable

Construction of OFC 12F



Specification for 12F Fiber (G-652 D) Single mode Fiber Optic Cable

Attenuation of Cabled Fiber:

At 1310nm : ≤ 0.40 dB/KM

At 1550nm : ≤ 0.25 dB/KM

Construction:

Primary Coated Fiber : Single Mode (As per G-652)

Type : Uni-tube

Tube filling compound : Thixotropic Gel

Loose Tube : PBTP

Strength Member (D=1.0mm) : FRP rod (2 nos)

Jacket : Black HDPE with Anti termite

Drum Length

(a) Drum Length: 2 KMs +/- 10%.

(b) Tolerance : Total Quantity can vary 5% of order quantity.



**TECHNICAL DETAILS / SPECIFICATIONS FOR SOLAR POWER PLANT (SPP) BASED
POWER SUPPLY SYSTEM FOR TELECOM INSTALLATION**

1) BACKGROUND:

The proposed Wi-Fi system is proposed to be installed at rural stations where general power supply is not very reliable with the Grid condition also very unreliable in terms of its voltage, load supplying capacity with probability of getting a DG back up being very remote.

The proposed telecom installations use 48V DC for their DC Load requirements and in addition some of them including the Computer terminals also work on need 230V, 50 Hz, 1 Ph AC supply.

Power Supply system consisting of a Solar Power Plant which takes into account the unreliable commercial power supply system.

2) TECHNICAL SPECIFICATION:

The Power supply should be an integrated unit comprising MPPT solar charger, Grid Charger and Hybrid Inverter capable of catering to all equipment loads, charging battery and exporting back excess PV power into the grid at the same time. the brief description of the product is furnished below:

- i. PCU-1KVA/48V/1-Phase
- ii. Battery 48V/100 Ah PV (Solar Panels)-1KWp,
- iii. Array Junction Box, ACDB, GI structure, Cables,
- iv. Earthing & lightning arrangement
- v. Makes: APC/ Libert/ Statcon Energiaa/Microtek/Luminous / Su-Kam or any equivalent make including extension

Details of the proposed system shall be as under:

i) SOLAR CHARGE CONTROLLER:

Solar Charge controller should be an MPPT based charge controller which tracks the maximum power point of PV panels all the time with the following minimum parameters / features:

- a) 3 stage battery charging (float, boost & equalize stages) for long life of the battery
- b) Battery current limiting feature to avoid over charge into the batteries
- c) Battery & PV reverse polarity protection
- d) Rated MCCB/ MCB on PV as well as battery inputs.
- e) MOV type surge arrestors on PV inputs for overvoltage protection against lightening induced surges.
- f) KWH meter showing PV Voltage, PV amps, Instantaneous PV Power, daily PV generated & cumulative PV generated. All these parameters should be displayed and logged in the KWH meter.

ii) HYBRID INVERTER:

The below minimum features should be ensured in the inverter unit:

- a) The inverter output should be able to synchronize with the grid supply as long as the grid is available and is within the range. The same unit should act as Inverter or Grid charger depending upon the state of Battery.
- b) The DC power requirement of Battery plus Equipment Loads should be met by PV power and grid power together such at PV should always be 1st priority and balance should be drawn from grid. There should be active current sharing between MPPT charger and the grid charger. In case PV power is excess and battery charged, PV power should be exported beyond the grid terminals. However there should be a possibility to change this mode and block export of excess PV power

to grid if net metering is not permitted. This feature should be settable from the front panel of the PCU.

- c) In case of three phase supply, unit should continue to operate even if one of the phases is not available or out of range. Under such a scenario, grid charger should continue to draw power from the phases available.
- d) Grid synchronization voltage range should be as wide as possible with a minimum window of 150V-265V.
- e) In cases where Grid voltage tends to fall whenever power is drawn, feature of AC current limiting should be provided such that only that much power is drawn from grid so as to keep the voltage within allowed band (Min 150V-265V).
- f) Operation without any de rating from 0 to 50 degrees of ambient temperature.
- g) Performance record of Inverters using High Frequency Transformer less technology is not good and in case it is used, it should be IP65 compliant so that no dust etc. enters the control boards/power boards. Considering the grid quality in India, there should be galvanic isolation between AC and DC using a 50Hz power transformer. In case of high frequency topology, separate isolation transformer should be provided on the grid side.
- h) There should be facility to connect AC loads as well which can run during grid outage without using DG power. There should be a No-break changeover (hit-less) at the load terminals between inverter and mains (and vice versa).
- i) Battery condition should be monitored under all conditions and whenever it falls below a certain voltage, DG ON command (wherever available) should be generated to charge the battery via grid charger.
- j) Automatic reset of all non critical faults such as overloads, AC over voltage/ under voltage etc. once the fault has been cleared.

iii) REMOTE MONITORING

All the relevant parameters of PCU should be available for remote monitoring/ controlling over internet using GPRS / VPN based monitoring solution. The list of parameters should include:

5.1	Solar Charge Controller	PV Voltage, PV Current, PV power, Daily Generation, Total Generation. (all above parameters to be included for all MPPT channels individually)
5.2	Inverter/ Mains Charger	<ul style="list-style-type: none"> - Inverter Voltage, Current, Frequency - Mains Voltage, Current, Frequency - Battery Voltage, Current - Active Faults

There should be facility to turn on/ off the unit remotely using GPRS based monitoring solution.

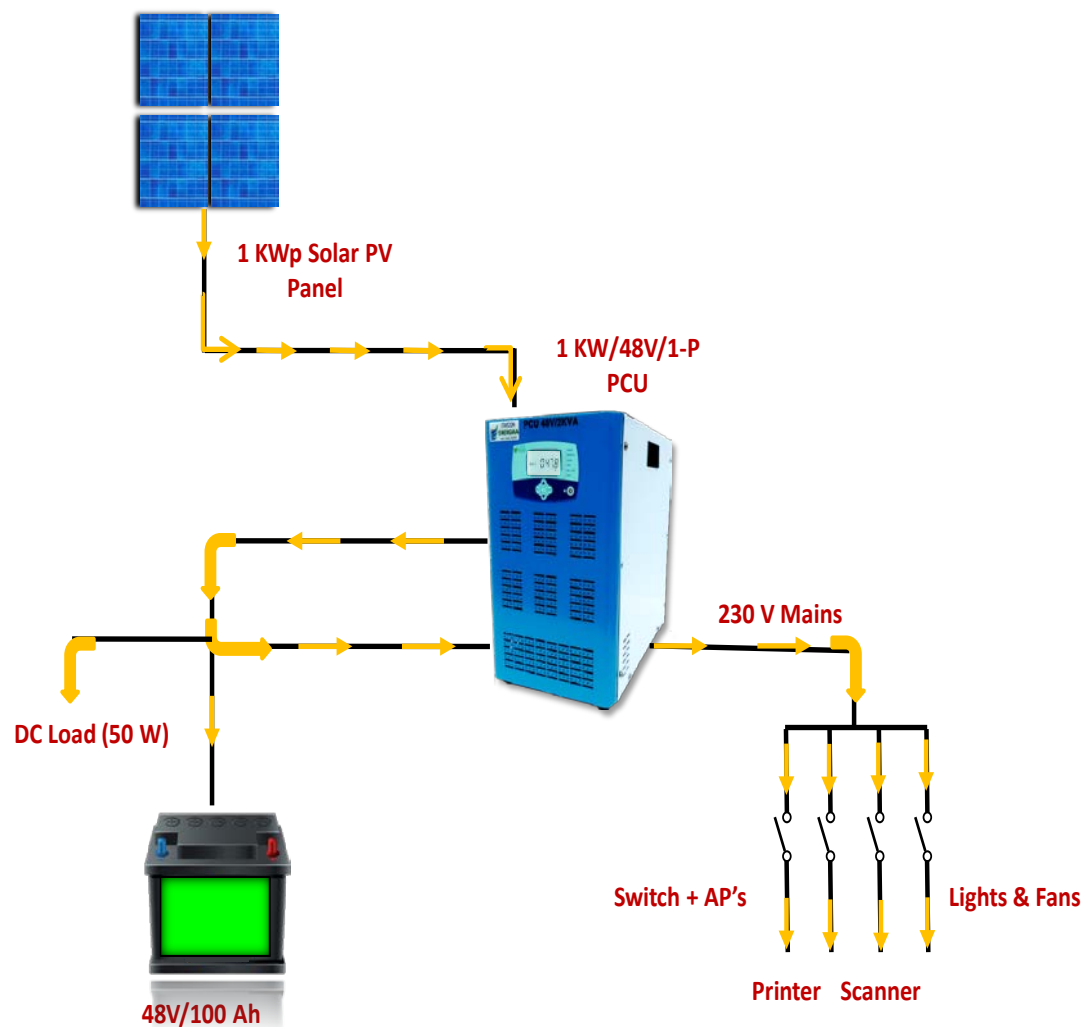
iv) MECHANICAL

The PCU should be having IP 54 degree of protection .It should be Free standing cubical with min 300 mm clearance from ground so that rain water does not enter from bottom. It should have provision of incoming and outgoing cables from bottom through suitable size glands which includes:

- a) PV cables from AJB
- b) 4 Core cable for incoming AC supply
- c) Four core cable for outgoing AC supply
- d) Two core DC cable for DC Load
- e) Two core DC cable for connecting battery Bank.
- f) Extra Gland hole with cover for any future cable requirement.

The Unit should be painted such that it does not get corroded while working under open sky and Indian environmental conditions.

Block schematic of the proposed system is shown below:



Proposed Loading:

It is assumed that following loads are to be catered by the (SPP) system:

- Router : 50W for 6-7 hrs
- Switch+4 Ap's: 150W for 6-7 hrs
- @ PC's + Printer+Scanner : 1-2 hrs daily
- Small Fan + LED light : 2-3 hrs

The system shall be such that Solar Panels can be fitted on the roof of the building (approx. 100 Sq. Ft.) and Battery + Inverter etc can be placed inside the room.

CODE OF PRACTICE FOR EARTHING AND BONDING SYSTEM FOR EQUIPMENTS

1. Scope

This document covers earthing & bonding system to be adopted for Telecom & Wi-Fi equipments with solid state components which are more susceptible to damage due to surges, transients and over voltages being encountered in the system due to lightning, sub-station switching etc. These equipments include SDH, Metro Ethernet switches, Fiber/Access Switch, Access Point etc.

2. References

IS 3043	<i>Code of practice for earthing.</i>
ANSI/UL 467	<i>Grounding & bonding equipment.</i>
IEEE 80	<i>IEEE guide for Safety in AC sub-station grounding.</i>
IEEE 837	<i>Standard for qualifying permanent connections used in sub-station grounding.</i>
IEC 62305	<i>Protection against lightning.</i>

3. Importance of Earthing

The installation and maintenance of an effective low resistance earthing system is essential due to the following -

- Efficiently dissipate heavy fault currents and electrical surges, both in magnitude and duration, to protect equipment being damaged so as to minimize down time, service interruption and replacement cost.
- Provide a stable reference for electrical and RF circuits at the installation to minimize noise during normal operation.
- Protection of personnel who work within the area from dangerous electric shock caused due to "step potential" or "touch potential".

4. Characteristics of good Earthing system

- Excellent electrical conductivity
- Low resistance and electrical impedance.
- Conductors of sufficient dimensions capable of withstanding high fault currents with no evidence of fusing or mechanical deterioration.
- Lower earth resistance ensures that energy is dissipated into the ground in the safest possible manner.
- Lower the earth circuit impedance, the more likely that high frequency lightning impulses will flow through the ground electrode path, in preference to any other path.
- High corrosion resistance
The choice of the material for grounding conductors, electrodes and connections is vital as most of the grounding system will be buried in the earth mass for many years. Copper is by far the most common material used. In addition to its inherent high conductivity, copper is usually cathodic with respect to other metals in association with grounding sites, which means that it is less likely to corrode in most environments.
- Mechanically robust and reliable.

5. Location for Earth

- Low lying areas close to the building or equipment are good for locating Earth Electrodes.
- The location can be close to any existing water bodies or water points but not naturally well-

drained.

- Dry sand, lime stone, granite and any stony ground should be avoided.
- Earthing electrode should not be installed on high bank or made-up soil.

6. Acceptable Earth Resistance value

The acceptable Earth Resistance at earth bus bar shall not be more than 1 ohm.

7. Components of Earthing & Bonding system

The components of Earthing & Bonding system are-

Earth electrode, Earth enhancement material, Earth pit, Equi-potential earth busbar, connecting cable & tape/strip and all other associated accessories.

8. Design of Earthing & Bonding system

8.1 Earth Electrode

- The earth electrode shall be made of high tensile low carbon steel circular rods, molecularly bonded with copper on outer surface to meet the requirements of Underwriters Laboratories (UL) 467-2007 or latest. Such copper bonded steel cord rod is preferred due to its overall combination of strength, corrosion resistance, low resistance path to earth and cost effectiveness.
- The earth electrode shall be UL listed and of minimum 17.0mm diameter and minimum 3.0mtrs long.
- The minimum copper bonding thickness shall be of 250 microns.
- Marking: UL marking, Manufacturer's name or trade name, length, diameter, catalogue number must be punched on every earth electrode.
- Earth electrode can be visually inspected, checked for dimensions and thickness of copper coating using micron gauge. The supplier shall arrange for such inspection at the time of supply, if so desired.

8.2 Earth Enhancement material

Earth enhancement material is a superior conductive material that improves earthing effectiveness, especially in areas of poor conductivity (rocky ground, areas of moisture variation, sandy soils etc.). It improves conductivity of the earth electrode and ground contact area. It shall have following characteristics-

- Shall mainly consist of Graphite and Portland cement. Bentonite content shall be negligible.
- Shall have high conductivity, improves earth's absorbing power and humidity retention capability.
- Shall be non-corrosive in nature having low water solubility but highly hygroscopic.
- Shall have resistivity of less than 0.2 ohms-meters. Resistivity shall be tested by making a 20cm. cube of the material and checking resistance of the cube at the ends. The supplier shall arrange for such testing at the time of supply, if so desired. Necessary certificate from National/ International lab for the resistivity shall also be submitted.
- Shall be suitable for installation in dry form or in a slurry form.
- Shall not depend on the continuous presence of water to maintain its conductivity.
- Shall be permanent & maintenance free and in its "set form", maintains constant earth resistance with time.
- Shall be thermally stable between -10 °C to + 60 °C ambient temperatures.
- Shall not dissolve, decompose or leach out with time.
- shall not require periodic charging treatment nor replacement and maintenance.
- Shall be suitable for any kind of electrode and all kinds of soils of different resistivity.
- Shall not pollute the soil or local water table and meets environmental friendly requirements for landfill.
- Shall not be explosive.
- Shall not cause burns, irritation to eye, skin etc.

- Marking: The Earth enhancement material shall be supplied in sealed, moisture proof bags. These bags shall be marked with Manufacturer's name or trade name, quantity etc.

8.3 Backfill material

The excavated soil is suitable as a backfill but should be sieved to remove any large stones and placed around the electrode taking care to ensure that it is well compacted. Material like sand, salt, coke breeze, cinders and ash shall not be used because of its acidic and corrosive nature.

8.4 Earth Pit

8.4.1 Construction of unit earth pit: Refer typical installation drawing.

- A hole of 100mm to 125mm dia shall be augured /dug to a depth of about 2.8 meters.
- The earth electrode shall be placed into this hole.
- It will be penetrated into the soil by gently driving on the top of the rod. Here natural soil is assumed to be available at the bottom of the electrode so that min. 150 mm of the electrode shall be inserted in the natural soil.
- Earth enhancement material (minimum approx. 30-35 kg) shall be filled into the augured/dug hole in slurry form and allowed to set. After the material gets set, the diameter of the composite structure (earth electrode + earth enhancement material) shall be of minimum 100mm dia covering entire length of the hole.
- Remaining portion of the hole shall be covered by backfill soil, which is taken out during auguring /digging.
- A copper strip of 150mmX25mmX6mm shall be exothermically welded to main earth electrode for taking the connection to the main equipotential earth bus bar in the equipment room and to other earth pits, if any.
- Exothermic weld material shall be UL listed and tested as per provisions of IEEE 837 by NABL/ ILAC member labs.
- The main earth pit shall be located as near to the main equi-potential earth bus bar in the equipment room as possible.

8.4.2 Construction of loop Earth by providing multiple earth pits

- At certain locations, it may not be possible to achieve earth resistance of $\leq 10\Omega$ with three earth electrodes /pits due to higher soil resistivity. In such cases, provision of loop earth consisting of more than one earth pit shall be done. The number of pits required shall be decided based on the resistance achieved for the earth pits already installed. The procedure mentioned above for one earth pit shall be repeated for other earth pits.
- The distance between two successive earth electrodes shall be min. 3mtrs and max. up to twice the length of the earth electrode i.e. 6 mtrs. approx.
- These earth pits shall then be inter linked using 25X2 mm. copper tape to form a loop using exothermic welding technique.
- The interconnecting tape shall be buried at depth not less than 500mm below the ground level. This interconnecting tape shall also be covered with earth enhancing compound.
- Main Equi-potential Earth Busbar (MEEB) of size 300X25X6 mm copper strip shall be installed to the wall of prefab/room on suitable insulators.
- For connecting earth pit and Main Equi-potential Earth Busbar (MEEB) 16 Sq.mm dia multi-strand single core PVC insulated copper cable with suitable copper lugs and stainless steel nuts and bolts shall be used. This cable shall be protected with GI pipe with clamping while entering into the prefab.
- The MEEBs shall have pre-drilled holes of suitable size for termination of bonding conductors. The MEEBs shall be insulated from the building walls. Each MEEB shall be installed on the wall with low voltage insulator spacers of height 60mm. The insulators used shall have suitable insulating and fire resistant properties for this application. The MEEBs shall be

installed at the height of 0.5m from the room floor surface for ease of installation & maintenance. All terminations on the MEEBs shall be by using copper lugs with spring washers.

8.4.3 Measurement of Earth resistance

The earth resistance shall be measured at the Main Equi-potential Earth Busbar (MEEB) with all the earth pits interconnected using Fall of Potential method as per Para 37 of IS: 3043.

8.4.4 Inspection Chamber

- A 300X300X300 mm (inside dimension) concrete box with smooth cement plaster finish shall be provided on the top of the pit. A concrete lid, painted black, approx. 50 mm. thick with pulling hooks, shall be provided to cover the earth pit.
- Care shall be taken regarding level of the floor surrounding the earth so that the connector is not too deep in the masonry or projecting out of it.
- On backside of the cover, date of the testing and average resistance value shall be written with yellow paint on black background.

8.5 Warranty

The supplier shall be responsible for complete supply, installation & commissioning of the earthing & bonding system. The warranty of such system shall be 12 months from date of commissioning. During this period, any failure of earthing system due to improper materials & bad workmanship shall be attended free of cost by the supplier.

