

Information to Bidder for the “Supply of OTDR, Splicing Machine, Cable Locator, Laser Source, Power Meter, Tool Kit, FMS & Joint Enclosures through GeM Bid ”

Ref: GeM Bid No. GEM/2024/B/*** dated:**

- The item/items in this bid should be quoted as per the technical specifications. *The details of the specifications along with consignee/site details are also available on website www.railtelindia.com*

(The technical specs which are not available on GeM portal for the required product, same will be uploaded in ATC/ITB as one time exercise. In future all the specs will be available on GeM portal.)

1. In the specification wherever support for a feature has been asked for, it will mean that the feature should be available without RailTel requiring any other hardware/software/licenses. Thus, all hardware/software/licenses required for enabling the support/feature shall be included in the offer. The technical specifications are mentioned in **Annexure-I**.
2. OEM or Authorized distributor/Partner of OEM should have a registered office in India to provide sales and 24x7 support in India. The certificate to this effect should be submitted. The bidder should be either OEM or his authorized dealer/distributor.
3. In case of the authorized distributor/partner certificate from the OEM to this effect should be submitted. If OEM is quoting then OEM should submit the certificate. **In the tender, either the manufacturer or its authorized dealer will be considered as valid bidders. In cases where the manufacturer has submitted the bid, the bids of its authorized dealer will not be considered and EMD will be returned. And in case of violations, both infringing bids will be rejected.**
4. Equipment offered shall have complete data sheets and detailed description on OEM web sites.
5. Bidder shall submit the detailed BOM of the equipment offered duly verified and certified by the respective OEM.
6. GSTIN RC of vendor for state should be provided from where goods will be supplied.
7. **Validity of offer, Delivery Period, Consignee Address, Inspection**

7.1 Validity of Offer: 45 days from the date of opening.

7.2 Delivery Period: The supplier will have to supply the material within 45 days from the date of issue of confirmed LOA/PO. If material is not supplied within the approved delivery period then penalty of 0.5% of undelivered/uninstalled

quantity per week to the maximum to the 10% of the contract value will be levied.

7.3 Consignee Address:

**(1) Sr. Manager/Stores,
RailTel Office, New Delhi,
Microwave Complex, Thompson Road
Northern Region.**

**(2) Sr. Mgr/JP(only for the supply of 250 nos of Joint Enclosure)
RailTel Corporation of India Ltd.
Microwave Tower Complex,
Railway Colony, Ganapati Nagar
Jaipur (Raj.) - 302006**

7.4 Inspection: Inspection shall be carried out by authorized representative of RailTel's.

8. Estimated cost of tender & Earnest Money Deposit (EMD)/ Bid Security:

8.1 Estimated cost of tender: Estimated cost of the Tender is Rs. **33,49,254/-**(Incl. GST).

8.2 Earnest Money Deposit (EMD)/ Bid Security: Earnest Money Deposit (EMD)/ Bid Security: Bid Security: Rs. 66,985/- in the form of Pay Order/ Demand Draft drawn in favor of RailTel Corporation of India Ltd. payable at New Delhi on or before 15:00 Hrs of Bid Opening Date. **The Bid received without EMD will be summarily rejected.**

8.3 In addition to clause 8.2 above, Tenderer has an option for online submission of EMD also. The EMD should be remitted in following account of RailTel Corporation of India Limited before the stipulated time and date of bid submission:

Name of bank & address	Union Bank of India, 14/15-F, Connaught Place, New Delhi- 110001.
Name of Account holder	RAILTEL CORPORATION OF INDIA LIMITED N R COLLECTION A/C (RCIL)
Account No.	307801010917906
IFSC Code	UBIN0530786
Branch/MICR Code	Connaught Place/110026006

8.4 Eligible MSEs are exempted from EMD.

- 8.5 Start-ups as recognized by Department for Promotion of Industry and Internal Trade (DPIIT), holding valid Startup Recognition Certificate which is to be uploaded while bidding and claiming EMD exemption and to be validated by the Buyer. Bidder to ensure that turnover for any of the financial years has not exceeded beyond limits prescribed in the certificate / Start Up scheme of DPIIT
- 8.6 Any bid not accomplished with a valid EMD shall be summarily rejected.
- 8.7 The EMD may be forfeited if a bidder withdraws his offer or modifies the terms and conditions of the offer during validity period and in the case of a successful bidder, if the bidder fails to accept the Letter of Acceptance (LOA) and fails to furnish performance bank guarantee (security deposit) in accordance with clause 10.
- 8.8 Earnest Money of the unsuccessful bidder will be discharged / returned as promptly as possible but not later than 30 days after the expiry of the period of offer / bid validity prescribed by the Purchaser.
- 8.9 The successful bidder's EMD will be discharged upon the bidder's acceptance of the Advanced purchase order satisfactorily and furnishing the performance bank guarantee in accordance with clause 10.
- 8.10 Earnest Money will bear no interest.

Note : In case of any wrong information submitted by tenderer, the contract shall be terminated. Earnest Money Deposit (EMD), Performance Guarantee (PG) and Security Deposit (SD) of contract forfeited and agency barred for doing business on RailTel(RCIL) for 2 (two) years.

9. This bid complies with "Public Procurement (preference to make in India) Policy Order, 2017 issued by DIPP and Public Procurement Policy for Micro and Small Enterprises (MSEs) order,2012" issued by MoSME."

The bidders claiming the preference have to submit relevant documents prescribed under relevant order.

10. Security Deposit/Performance Guarantee:

The successful tenderer shall submit security deposit in the form of DD/irrevocable BG from any scheduled bank for due fulfillment of contract as per the Performance Guarantee details given below:

i. Security Deposit/Performance Guarantee @ 10 % of total value of Purchase Order is required to be submitted within 30 days of issue of Purchase Order with validity of 3 months beyond warranty period, failing which a penal interest of 15% per annum shall be charged for the delay period i.e. beyond 30 (thirty) days from the date of issue of LOA/PO.

ii. The security deposit/PG shall be submitted to RCIL/RO/NR, Shastri Park, Delhi.

iii. A separate advice of the PG will invariably be sent by the PG issuing bank to the RailTel's Bank through SFMS and only after this the BG will become acceptable to RailTel. It is therefore in own interest of bidder to obtain RailTel's bank IFSC code, its branch and address and advise these particulars to the BG issuing bank and request them to send advice of PG through SFMS to the RailTel's Bank.

The security deposit/Performance Guarantee shall be refunded to the contractor without interest after duly performs and complete the contract in all respect after 60 days of completion of all such obligations including the warranty under the contract,duly adjusting any dues recoverable from the successful tenderer. Payment of Security Deposit in the form of Pay Order/Demand Draft should be made in favor of "RailTel Corporation of India Ltd" payable at New Delhi.

Note: (1) In case value of PG comes to Rs. 5 Lakhs or less, same should be submitted in the form of DD/Banker cheque only.

(2) Performa for bank guarantee. (Annexure-III)

11. Eligibility Criteria for OEM:

- The equipment offered by the OEM or equipment of the same series/family from the same OEM should have been satisfactorily working in Government /PSUs/Telecom Service Providers network for at least 12 months as on opening of bid, in India or Abroad. The certificates from the actual users will have to be submitted online.
- The OEM should have supplied at least 35% of the tendered quantity (rounded to the nearest whole number) of the equipment offered or equipment of the same series/family during last preceding 3 financial years (i.e. current year and three previous financial years) as on opening of bid to Government/PSUs/Telecom Service Providers. OEM should submit self-certificate with proper contact detail of clients along with quantities supplied (Firm Name, Contact person, Designation, Telephone Number, Fax, Official mail id etc.). The same should be issued by authorized signatory.
- The OEM should have proven facilities for Engineering /manufacture/ assembly/ integration and testing of **OTDR, Splicing Machine, Cable Locator,Laser Source,Power Meter,Joint Enclosure** and basic facilities with respect to space, Engineering, Personnel, Test equipment, Manufacture, Training, Repair, Service Center Supports for at least past three years in the country from where the proposed equipment are planned to be supplied. In case OEM is located outside India, it should have training repair and service center facilities in India also. The certificates/Undertaking for the same will have to be submitted online.

(The bidder will have to submit the proof of establishment for the facility)

12. Eligibility Criteria:

12.1 Technical Eligibility for Bidder:

The Bidder/OEM{themselves or through reseller(s)},should have executed project for supply and installation/commissioning of same or similar category

products during preceding 3 financial years(i.e. current year and three previous financial years) as on opening of bid, as per the following criteria:

- Single order of at least 35% of estimated bid value ; or
- Two orders of at least 20% each of estimated bid value ; or
- Three orders of at least 15% each of estimated bid value

Satisfactory performance certificate issued by respective buyer organization for the above orders bunch bids should be uploaded with bid.

In case of, the category related to primary product having highest bid value should meet this criterion.

In case of contract is started prior to 03 yers, ending on the date of opening of bid, but completed 03(three) years,ending on the date of opening of bid,the completed work shall be considered for fulfilment of credentials.

12.2 Definition of Similar Work: Supply of OFC maintenance measuring / testing instruments (OTDR/Splicing Machine/Cable Locator/Laser Source/Power Meter)

Note:Work experience certificate from private individual shall not be considered. However, in addition to work experience certificates issued by any Govt. Organization, PSU or any reputed TELCO, work experience certificate issued by Public listed company having average annual turnover of Rs 500 crore and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange or Bombay Stock Exchange, incorporated/registered at least 5 years prior to the date of opening of tender, shall also be considered provided the work experience certificate has been issued by a person authorized by the Public listed company to issue such certificates. In case tenderer submits work experience certificate issued by public listed company, the tenderer shall also submit along with work experience certificate, the relevant copy of work order, bill of quantities, bill wise details of payment received duly certified by Chartered Accountant, TDS certificates for all payments received and copy of final/last bill paid by company in support of above work experience certificate

12.3 Financial Criteria for Bidder:

The tenderer must have received total contractual payments/operating turnover in the previous three financial years and the current financial year up to the date of inviting of tender, at least 150% of the advertised value of the tender. The tenderers shall submit Certificates to this effect which may be an attested Certificate from the concerned department / client or Audited Balance Sheet /Certificate from Chartered Accountant duly supported by Audited Balance Sheet. (Note: Client certificate from other than Govt. Organization should be duly supported by Form 16A/26AS generated through TRACES of Income Tax Department of India).

Credentials if submitted in foreign currency shall be converted into Indian currency i.e., Indian Rupee as under: The conversion rate of US Dollars into Rupees shall be the daily representative exchange rates published by the Reserve Bank of India for

the relevant date. Where, relevant date shall be as on the last day of month previous to the one in which tender is invited. In case of any other currency, the same shall first be converted to US Dollars as on the last day of month previous to the one in which tender is invited, and the amount so derived in US Dollars shall be converted into Rupees at the aforesaid rate. The conversion rate of such currencies shall be the daily representative exchange rates published by the International Monetary Fund for the relevant date.

12.3.1 Financial Eligibility Criteria of Startup:

The tenderer must have received total contractual payments/operating turnover in the previous three financial years and the current financial year up to the date of inviting of tender, at least 50% of the advertised value of the tender. The tenderers shall submit Certificates to this effect which may be an attested Certificate from the concerned department / client or Audited Balance Sheet /Certificate from Chartered Accountant duly supported by Audited Balance Sheet. (Note: Client certificate from other than Govt. Organization should be duly supported by Form 16A/26AS generated through TRACES of Income Tax Department of India).

Credentials if submitted in foreign currency shall be converted into Indian currency i.e., Indian Rupee as under: The conversion rate of US Dollars into Rupees shall be the daily representative exchange rates published by the Reserve Bank of India for the relevant date. Where, relevant date shall be as on the last day of month previous to the one in which tender is invited. In case of any other currency, the same shall first be converted to US Dollars as on the last day of month previous to the one in which tender is invited, and the amount so derived in US Dollars shall be converted into Rupees at the aforesaid rate. The conversion rate of such currencies shall be the daily representative exchange rates published by the International Monetary Fund for the relevant date.

13. Bidder should have authorization specific to this tender from respective OEM as per Annex-IV.

14. Splitting of Quantity:

14.1 Deleted

14.2 In case bidder claims PMA, Government of India Guideline/Instruction regarding splitting of order to Local supplier shall be applicable. Govt. Guidelines in regard to MSME shall be followed.

15. Warranty:

The materials are to be warranted for **24 months** from the date of delivery to the consignee. The supplier shall warrant that stores to be supplied shall be new and free from all defects and faults in material, workmanship and manufacture and shall be of the highest grade and consistent with the established and generally

accepted standards of materials of the type ordered and shall perform in full conformity with the specifications and drawings.

The supplier shall be responsible for any defects that may develop under the conditions provided by the contract and under proper use, arising from faulty materials, design or workmanship such as corrosion, inadequate quantity of material to meet Cards/Modules requirements, inadequate contact protection, deficiencies in design and/ or otherwise and shall remedy such defects at his own cost when called upon to do so by the Purchaser who shall state in writing in what respect the stores are faulty.

16. SLA:

After having been notified of the defects / service requirement during warranty period, Seller has to complete the required Service / Rectification within time limit of max. 7 days. If the Seller fails to complete service / rectification within defined time limit, a penalty of 0.5% of Unit Price of the product shall be charged as penalty for each week of delay from the seller & upto max. of 100% of Unit Price of the product. Seller can deposit the penalty with the Buyer directly else the Buyer shall have a right to recover all such penalty amount from the Performance Security (PBG) or from the running bills.

17. Purchaser's Right to Vary the quantities:

The purchaser shall be at liberty to enhance or reduce the quantity mentioned in the LOA as indicated in below para without assigning any reasons. The bidder shall comply with such modifications unconditionally provided these are made before completion of the deliveries under the purchase order/LOA.

(A) Upto maximum extent of +/- 50% subject to following condition

- i. Upto +25% with no rebate.
- ii. From +25% to +40% with 2% rebate
- iii. From +40% to +50% with 4% rebate

(B) For variation beyond +50% of the quantity mentioned in the SOR may be done after proper negotiation with the selected bidder.

18. Payment Conditions: -

- (i) 100% payment on full supply.
- (ii) 80% payment against part supply of the ordered quantity. In case bidder completes the supply order for one SOR, he can claim part payment of 80% against each SOR's completed supply of the said SORs. Balance payment shall be made after full supply. The following documents are to be submitted for payment:

- Original Tax Invoice. (With separate Tax amount, containing POS, RailTel GSTN and Supplier GSTN).
 - Delivery Challan.
 - Original Consignee receipt.
 - Original Inspection Certificate.
 - Transit Insurance Certificate.
 - Warranty Certificate of OEM.
 - Proof of SD/PG submitted.
 - Certificate of receipt of Goods in good condition & installation thereof from RailTel.
 - Declaration of non-applicability of e-invoicing, if applicable.
 - Declaration regarding 206AB/206CCA of IT act.
 - Bill passing authority is Sr. DGM/O&M/NR, bill paying authority is JGM/Fin /NR
19. The tenderers shall submit an certificate on paper stating that they are not liable to be disqualified and all their statement/documents submitted along with bid are true and factual. Standard format of the certificate to be submitted online by the bidder is enclosed as **Annexure-V**. **Non submission of certificate by the bidder shall result in summarily rejection of his/their bid.** And it shall be mandatorily incumbent upon the tenderer to identify, state and submit the supporting **documents duly self attested** by which they/he is qualifying the Qualifying Criteria mentioned in the Tender Document. It will not be obligatory on the part of Tender Committee to scrutinize beyond the submitted document of tenderer as far as his qualification for the tender is concerned.

The RailTel(RCIL) reserves the right to verify all statements, information and documents submitted by the bidder in his tender offer, and the bidder shall, when so required by the RailTel(RCIL), make available all such information, evidence and documents as may be necessary for such verification. Any such verification or lack of such verification by the RailTel(RCIL) shall not relieve the bidder of its obligations or liabilities hereunder nor will it affect any rights of the RailTel thereunder.

In case of any wrong information submitted by tenderer, the contract shall be terminated. Earnest Money Deposit (EMD), Performance Guarantee (PG) and Security Deposit (SD) of contract forfeited and agency barred for doing business on RailTel(RCIL) for 2 (Two) years.

20. Power of Attorney:

Power of attorney in favor of the signatory duly authorizing the signatory shall be submitted online before the due date and time of submission of the e-Tender

and Original copy is needed to be submitted by the successful bidder before issuance of PO.

21. On line Submissions:

The bidder is required to upload and submit the following documents on line before due date & time of bid. The due date & time for closing of the bid is ____ Hrs of __.__.____ and the bid will be opened at ____ Hrs of __.__.____.

- (i) Offer letter as per Annexure-II.
- (ii) EMD Submission details.
- (iii) BOQ of offered equipment.
- (iv) Clause wise compliance along with all mentioned documents/annexures for all clauses of GeM Bid and ATC documents.
- (v) Data Sheet of offered equipment.
- (vi) Financial (Certified copies of audited balance sheets/annual reports of last three preceding financial years) and Technical Eligibility Criteria documents.
- (vii) Technical Compliance of all Specification of items as per GeM Bid and ATC documents, as per Annexure-IX (Technical Specification Compliance Sheet)
- (viii) Certificate from the End user against the Eligibility criteria for OEM para 11.
- (ix) Proof of document required against Eligibility criteria of OEM and Bidder vide para 11 & 12 respectively.
- (x) MAF/OEM Authorization as per Annexure-IV.
- (xi) Standard format of certificate as per Annexure-V.
- (xii) Declaration as per Annexure-VI.
- (xiii) Nil Deviation as per Proforma attached in Annexure-VII.
- (xiv) Power of Attorney as per clause 20.
- (xv) Digitally signed copy of ITB.
- (xvi) Bid Security Declaration Form

Scanned copy of the Documents to be uploaded along with offer

SN	Subject/Content	Required Documents/Form	Action if required documents not submitted along with the tender
1	Earnest Money Deposit	<p>Rs. 66,985/- in the form of NEFT/ Demand Draft drawn in favor of RailTel Corporation of India Ltd. payable at New Delhi on or before 15:00 Hrs of DD/MM/YYYY (Bid Opening Date).Bank detail as mentioned in clause 8.</p> <p>Note: (i) In case of NEFT/demand draft scan copy of EMD should be submitted along with offer. (ii) Original copy of demand draft has to be submitted to concern tendering department at RCIL/RO/NR, Shastri Park, Delhi</p>	<p>Summarily Rejected(Small scale Units registered with NSIC/MSEs under single point registration scheme shall be exempted from EMD cost)</p>
2	Constitution of Firm		<p>Liable to be Rejected</p>
A	In case of Sole Proprietorship Concern	Notarised Proprietorship deed on stamp paper.	

	<p>In case of a “Partnership Firm/Concern”</p>	<p>1) Notary certified copy of the Partnership Deed. 2) Document(s) in support of Registration of firm with Registrar of firms which includes Certificate of registration and Register of firm (Form No. may vary from State to State)(as applicable) etc. issued by Registrar of firms. 3) Notarised/Registered Power of Attorney in favour of the individual signing the tender document authorized by all the partners to act on behalf of the firm and create liability against the Firm. 4) An undertaking by all partners of the partnership firm that they are not blacklisted or debarred by Railways/Railtel or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of opening of bids, either in their individual capacity or in any firm in which they were / are partners. Note: Authorisation given in POA only will be considered irrespective of any authorization that may have given in Partnership Deed. In case of non-submission of POA or invalid POA, offer is liable to be rejected.</p>	
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C	In case of a “Company”	(i) Copies of the AOA/MOA (Article of Association / Memorandum of Association) of the Company; (ii) A copy of certificate of incorporation. (iii) A copy of Authorization/Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender on behalf of the company and create liability against the company (iv) An Undertaking that the company is not black listed or debarred by Railways/Railtel or any other Ministry/Department of Govt. of India from participation in tender on the date of opening of bids, either in individual capacity or as a member of the partnership firm.	
3.	Technical Eligibility Criteria	Completion/Performance Certificate in support of similar nature of work as per clause 12.2 of tender document.	Summarily Rejected
4.	Financial Eligibility Criteria	Contractual payment received as per clause 12.3 of tender document.	Summarily Rejected
5.	Annexure -VII	Statement of deviation	Liabile to be Rejected
6.	Annexure-V	Standard format of certificate	Summarily Rejected
7.	Form-I	Bid Security Declaration	Summarily Rejected

Note: 1) The bidder is required to give acceptance of all the clauses mentioned in the “**Information to the Bidders**” document is mandatory. Any deviation / non-acceptance may lead to rejection of the bid.

2) Information to Bidder viz. corrigendum /addendum/ amendments etc. for this bid shall be posted on www.railtelindia.com only.

3) This bid is governed by the Specific Additional Terms & Conditions and General Terms & Conditions laid down by the GeM against **GeM Bid No: _____**.

In case, If any contradiction between GeM Additional Terms & Conditions and General Terms & Conditions, RailTel Terms & Conditions will prevails.

Technical Specifications

1. All Equipment should be:

- i. With 24 month warranty.
- ii. Equipped with necessary hardware/software to comply all above required / support features.
- iii. Back-to-Back warranty with respective OEMs for both Hardware and Software. The certificates/Undertaking for the same will have to be submitted along with bid from respective OEM.
- iv. OEM (**Optical Fiber Splicing, OTDR, Cable Locator ,Laser Light Source, Optical Power meter**) should have its Service Centre at min 04 locations in major cities in India. Service center details to be shared along with address and contact no. and person.
- v. UL, CE and FCC Certification is not required for PMA. However, they have to produce certificate from standard lab approved/ authorized by Govt. of India that their product are equivalent to UL, CE and FCC and meets all standard and specification of UL, CE and FCC.

2. SOR wise details are as:

SOR	Item Description	Unit	Qty.
SOR-1	Optical Fiber Splicing Machine as per technical specifications of SOR-1 of Information to Bidder	Nos.	3
SOR-2	Optical Time Domain Reflectometer (OTDR) as per technical specifications of SOR-2 of Information to Bidder	Nos.	3
SOR-3	Cable Locator as per technical specifications of SOR-3 of Information to Bidder	Nos.	3
SOR-4	Optical Laser Light Source as per technical specifications of SOR-4 of Information to Bidder	Nos.	1
SOR-5	Optical Power Meter as per technical specifications of SOR-5 of Information to Bidder	Nos.	1
SOR-6	Optical Tool Kit as per technical specifications of SOR-6 of Information to Bidder	Nos.	1
SOR-7	Joint Enclosure (24 Fiber) as per technical specifications of SOR-7 of Information to Bidder	Nos.	450
SOR-8	FMS SC/APC (2*24 Port) as per technical specifications of SOR-8 of Information to Bidder	Nos.	4

Note: Evaluation Method: Total Value Wise Evaluation.

Technical Specification of SOR Items

SOR1: Optical Fiber Splicing Machine

Sl No	Technical Specifications/Parameters	Required Value
	Alignment Method	Core to Core alignment
	Fiber cores	Single fiber
	Applied Fiber Category	SM/MM/DS/NZDS
	Diameter of Fiber	Cladding diameter (80-150 μ m),Coating diameter (100 to 1000 μ m)
	Cleave length	5 mm to 16 mm
	Splice program	Max 100
	Heating program	Max 30
	Typical Splice loss	0.02db(SM),0.01db(MM),0.04db(DS) & 0.04db (NZDS)
	Return Loss	\geq 60db
	Loss Estimation	Provided
	Splice Time/Heating Time	Not more than 7 Second/25 Second
	Applicable protection sleeve	40 mm and 60mm
	Storage	10000 records
	Tension Strength	2N
	Camera	Two CMOS Camera
	Electrode life	\geq 5000 ARCS
	Display Size	Min 4.5 inch Color touchscreen LCD display
	Battery	Min 6000 mAh Li-ion rechargeable battery
	Fiber view & Magnification	Min 300 Times Max
	Connectivity interface	High speed USB
	Operating Environments	Altitude 0-5000m,Humidity 0-95%, Temperature -10 to +50 degree Celsius

SOR 2: Optical Time Domain Reflectometer (OTDR)

Sl No	Technical Specifications/Parameters	Required Value
1	Type of Fiber to be tested	Single Mode
2	Wavelength (nm)	1310/1550 \pm 20 nm
3	Display	\geq 7 inch color LCD, Touch screen
4	Dynamic Range (dB)	Min 42 db
5	Event Dead Zone (EDZ)	1.0 m
6	Attenuation Dead Zone (ADZ)	\leq 2.5m
7	Distance Range	User settable 0.1 to \leq 250km
8	Pulse Width	5ns - 20 μ s

9	Distance Accuracy	$\pm(1.0+0.005\% * \text{Testing Distance} + \text{Resolution})$
10	Loss Resolution	0.001
11	Loss Threshold (dB)	0.01
12	Min. Distance Resolution	0.1m
13	Sampling Points	256000
14	Measurement Time	Yes
15	Averaging Time Update	$\leq 180s$
16	Software Output	.sor, pdf
18	Built-in Optical Laser Source (OLS)	Yes
18.a	Optical Laser Source Wavelength	Operating wavelengths will be same as OTDR Wavelength
18.b	OLS Power	$\geq -6dBm$
19	Built-in Optical Power Meter (OPM)	Yes
20	Data Storage	≥ 9000 traces
21	Output Port/Interface	Min 2 x USB 2.0 Port
22	Size (H*W*D) (mm)	Bidder to be mention
23	Weight (kg)	Bidder to be mention.
24	Operating Temp/ RH	Operating : Min – 10 to +50°C Storage: Min -10 to +60°C RH : $\geq 90\%$
25	Power Supply	Rechargeable lithium-ion batteries
26	Certification	CE
27	Standard Accessories	(i) Carrying Bag (ii) AC/DC Adapter (iii) Rechargeable lithium-ion battery (iv) User Manual (v) Calibration Certificate
28	Connector Port	FC/PC or SC/PC

Note: Along with the above mention specification following should also be there in features :

- 1 It should measure single mode optical fiber (G652.D) 9/125micrometer
- 2 It should measure attenuation, length of the fiber, splice loss, connector loss
- 3 It should support Adjustable pulse width, Adjustable detection time
OTDR report data store and transfer feature

SOR 3: Cable Locator

Sl No	Technical Specifications/Parameters	Required Value
Receiver		
1	Display	Graphic/LCD display, Backlit
2	Audio	Equipment should have volume control including in various steps including zero
3	Internal Antennas	Minimum 3 antennas
4	Locating modes	Locating mode- peak, null & differential peak with directional arrow.
5	Operating Modes	Receiver should have Passive mode (i) Power Frequency mode (ii) RF/Radio Frequency mode (iii) Cathodic protection Frequency mode
6	Frequencies	Minimum 10 No. of frequencies in range of 200Hz to 200kHz 1. Low Frequency - Min 7 No. of freq. (200hz to 1kHz) (Mandatory) 2. Mid. Frequency - Min 2 No. of freq. (1khz to 33 kHz) (Mandatory) 3. High Frequency - Min 1 No. of freq. (33kHz to 200 khZ (Mandatory)
7	Guidance	Instrument should have left right arrow function
8	Receiver Display information	Backlit LCD display should provide following information: Locating Mode Indication, Left/Right Arrows or line orientation (compass), depth measurement, Antennae operating mode , Continuous Battery Check, Operating frequency, volume
9	Current Measurement	Receiver should also have current measurement function. There should be option to view the current measurement during route tracing process.
10	Gain control	Semi Auto Gain Adjustment
11	Depth range measurement capability in transmitter mode	Up to 9 Meter
12	Depth range in Passive modes , Power (50 &60Hz) / RF mode	Up to 3 Meter
13	Depth measurement in passive power & RF mode (without use of transmitter)	feature should be available
14	Operating Temperature Range	Operating -20°C to 50°C
15	Environmental rating	Complying to IP54
16	Weight of receiver (with battery)	Bidder to be mention
17	Battery	Rechargeable Battery pack with capability of continuous usage min 20 hrs.

Transmitter		
18	Output power	Min 10 Watt
19	Frequencies available	Minimum 10 No. of frequencies in range of 200Hz to 200kHz 1. Low Frequency - Min 7 No. of freq. (200hz to 1kHz) (Mandatory) 2. Mid. Frequency - Min 2 No. of freq. (1khz to 33 kHz) (Mandatory) 3. High Frequency - Min 1 No. of freq. (33kHz to 200 khZ (Mandatory)
20	Load Matching	Automatic adjustment of output voltage to maximize signal
21	Display type	Graphical/LCD with backlit
22	Multimeter function	Transmitter should have capability to measure and display load, current and voltage to assess earthing condition
23	Internal Battery	Rechargeable Battery pack with capability of continuous usage min 7 hrs.
24	Modes of operation	Direct Connection Mode & Induction mode
25	Controls	Push buttons for Frequency, Output Level and Information
26	Weight	Bidder to be mention
27	Temperature Range	Operating (-20°C to 50°C)
28	Construction & Environmental rating	High Impact ABS. Complying to IP54 water proof & dust proof standard.
29	Standard Accessories	Locating kit (comprising transmitter and receiver) should be provided with accessories like soft carry bag, Instruction manual, Direct connection lead and Ground Rod

SOR 4: Optical Laser Light Source

Sl No	Technical Specifications/Parameters	Required Value
S.No	Parameter	Specification
1	Source type	Laser
2	Fiber type	Single mode
3	Optical interface type	SC or FC
4	Central Wavelength	1310 ± 20nm & 1550 ± 20nm
5	Spectral Width	≤ 5nm
6	Powe Stability	± 0.1 dB
7	Output power	≥ -7dBm
9	Battery	AA/AAA type (At least 10 Hours Backup)
11	Carry case	required

SOR-5: Optical Power Meter

Sl No	Technical Specifications/Parameters	Required Value
Sr. No.	Parameters	Specification
1	Wavelength Range (nm)	830 nm to 1650 nm
2	Wavelength calibrated (nm)	850-1650 nm
3	Measurement Range	Min +10 to –65dBm
4	Protection against high optical power	Min for defined range
5	Calibration	Auto-self check when unit is turned ON
6	Resolution	0.01 dB
7	Accuracy	±5%
8	Sensor Type	To be defined by the manufacturer
9	Display	High Visibilty Graphical display with backlight(four or more digits (excluding `±' sign)
10	Display parameter	Optical Power in dBm, dB, measured wavelength, low battery, etc
11	Display units	dB, dBm, Watt
12	Connector Type	universal 2.5 mm connector
13	Auto Power off	Should be Available
14	Power Supply	Rechargeable Battery with charger
15	Power back up	At least 10 hours for Continious use
16	Interface & Report Generation	USB Type C
17	Storage	Should have storage of at least 1000 results
18	Size and Weight	Handheld, light weight ,compact and rugged
19	Operating Temperature	–10 °C to 50 °C

SOR-6: Optical Tool Kit

The Optical tool kit should have the following:

1.General Purpose Tools

(I)Ratchet Screw Driver (II) Measuring Scale (III) Hack Saw (junior) with blades Section (IV) Scissor Section (V) Tweezer (VI) Cutting Nipper (VII) Snip Nose Plier (VIII) Hammer (IX) Adjustable Spanner.

2.General purpose tools for optical fibre cables

(I)Cable Knife (II) Cable Cutter (III) Cable sheath & Jacket Remover (IV) Scissor Ceramic (V) FRP Cutter (VI) Loose Tube Cutter (VII) Stripper Cutter .

3.Tools for Optical Fibre

(I) Fibre Stripper (Primary Coating) (II) Fibre Stripper (Secondary Coating) (III) Fibre Cleaver

4. Consumable Items

- i. Emery Cloth or Emery Paper (zero grade)
- ii. PVC adhesive tape (5m length of 10 mm width).
- iii. ISO propane (Lab. Grade, 250 ml, for general cleaning)
- iv. Hexane (Lab. Grade, 250 ml, for cleaning the jelly)
- v. Ethyl alcohol (Lab. Grade 250 ml, for cleaning the fibre)
- vi. Tissue / Lens Paper - One Packet
- vii. Cotton Buds (small size)- One Packet
- viii. Torch with cell (Pencil Type)- One

5. Tool Box

SOR-7 : Joint Enclosure-24 Fiber

The Joint Enclosure for SOR-7 should be confirming to TEC no. TEC/GR/TX/OJC-002/03/APR-2010 or latest with all amendments. TEC Specification Document to be submitted by OEM/OEM authorized Seller:

A. For OEM Bidders: Along the Bid, OEM should submit valid "Technical Specification Evaluation Certificate" for Specification no. TEC/GR/TX/OJC-002/03/ APR-2010 or latest amendments if any issued by Competent/Authorized Government Organization i.e. BSNL in favor of OEM.

B. For OEM authorized Seller bidders: Along the Bid, OEM authorized Seller should submit valid "Technical Specification Evaluation Certificate" for Specification no. TEC/GR/TX/OJC-002/03/ APR-2010 or latest amendments if any issued by Competent/Authorized Government Organization i.e. BSNL in favor of OEM who provides Manufacturer Authorization Form (MAF) as per annexure-IV of ATC to Seller.

Bids without "Technical Specification Evaluation Certificate" as mentioned above will be rejected summarily.

SOR 8: FMS SC/APC-48 Port

The FMS for SOR-8 should be confirming to TEC NO.: GR No. GR/FDM-01/02.APR 2007 or latest with all amendments. However, the FMS should have the following:

TECHNICAL REQUIREMENTS FOR FDMS AT BUILDING PREMISES (TYPE - III A & Type III - B):

FDMS at building premises shall provide environmental and mechanical protection for the fibre management system that includes the functions of splicing and passive component integration. The product shall facilitate any required configuration by adding splicing, passive device and/or connector patching subassemblies. This unit shall be mounted on a wall inside the building/customer's premises with proper nuts and bolts above ground applications. The product shall have provision for cable termination and sealing requirements. The cover shall be provided which can be easily opened without disturbing the cables, fibres and pigtailed/patch cords. The system shall be provided along with locking system.

The FDMS at Building Premises shall be of following two types :

- a) Type III-A (For 24 nos. of fibres)
- b) Type III-B (For 48 nos. of fibres)

5.1 Out side dimensions :

Type III-A	Type III-B
a) Width 375 ±2% mm	375 ± 2% mm
b) Height 450 ± 2% mm	600 ± 2% mm

c) Depth $175 \pm 2\%$ mm $175 \pm 2\%$ mm

5.2 Capacity : It shall have the capacity to accommodate the following :

Type III-A Type III-B

a) No. of cables : 2 4

b) No. of fibres : 24 48

c) No. of fibres/cable : 12 12

d) No. of connectors/pigtails : 24 48

e) No. of Splicing trays :

i) For Ribbon splicing 2 4

ii) For Single circuit splicing 12 24

f) Splicing capacity of the tray :

i) 1 Ribbon per tray

ii) 2 Fibre per SC tray

5.3 Cable entry and exit ports :

5.3.1 The Type III-A box shall have the following entry and exit ports :

Number of Ports Usage Cable range in mm

a) 1 Pigtail & / or Patch cord 3 mm dia, Max. 24 pc

b) 2 Drop cable 8 – 25

5.3.2 The Type III-B box shall have the following entry and exit ports :

Number of Ports Usage Cable range in mm

a) 2 Pigtail & / or Patch cord 3 mm dia, Max. 48 pc

b) 4 Drop cable 8 – 25

Note : The out door cable entry ports shall be on the bottom of the both types of boxes.

5.3.3 Sealing Arrangement : Suitable sealing arrangement of the entry and exit ports shall be provided and these shall be opened as and when required.

5.4 Type of connector Adopter : FC-PC/SC-PC/LC-PC

(mounted on suitable panel)

Note: The Pig Tails, Patch cords and connector adopter shall meet the requirement of TEC GR No. GR/OFJ-01/04. APR 04 /GR/OFJ-02/01

MAY 04 and subsequent amendment issued, if any. For ribbon fibre, the ruggedised secondary coated pigtails used shall be with fan out

arrangements. The manufacturer shall indicate the diameter of the pigtails supplied with the system.

5.5 Fibre Arrangement System (FAS):

5.5.1 The sub - assembly shall be installed on a common plate i.e. Fibre Arrangement System. The design feature shall ensure a snap fit mounting and shall ensures that the fibre are routed positively to the selected tray.

5.5.2 Fibre Arrangement System (FAS), the element of the system, shall ensure the fibre management and identification while routing the fibres from the cable to organizer trays. The fibre shall pass through designated path (Grooves) directly leading to the nominated place . The fibre shall not be bare throughout its path. FAS plates shall be pre-installed to accommodate subassemblies. Fibre Distribution Management System (Type-I, Type-II & Type-III) (GR No.GR/FDM-01/02 APR 2007)

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5.5.3 Pre-installed transportation tubing to guide and protect the fibre from the cable to the FAS plate shall be provided.

5.5.4 Pre - installed fibre break - out (a proper arrangement for fanning out of the installed fibers in the FAS and for fanning out of ribbon fibre to connectorised pigtailed) shall be provided.

5.5.5 A mounting bracket for Aramid Yarn termination units (ATU) next to the FAS plate to provide strain relief for pigtailed as needed shall be provided.

5.5.6 Pig tail trumpets or bend control arrangement for guiding pigtailed as they exit, shall be provided.

5.5.7 Mounting screws and nuts shall be provided.

5.6 Tray layout for Individual fibre:

5.6.1 Fibre arrangement System (FAS) shall be fully loaded with single circuit trays to accommodate maximum 24 fibres for Type III-A and maximum 48 fibres for Type III-B.

5.6.2 The FAS shall be used to splice pigtailed/ ruggedised fibre with the external cable.

The unit shall have following special functions and features:

a) Single circuit management i.e. splice & storage of individual circuit (2) fibres.

b) Device management (Splitters, WDMs)

c) Inter connection

d) Cross connection

e) Total fibre management

f) Modularity

g) Commonality

h) Ease of installation

i) High reliability

j) Snap fit arrangement

k) There shall be bend controls both on the trays and chassis to guide and protect the pigtailed.

l) Pigtail retention facility.

m) A tray wedge shall be provided in each shelf to enable working on the lower tray and ease of working.

5.7 Tray Layout for Ribbon Fibre :

5.7.1 Fibre arrangement System (FAS) shall be fully loaded with single element trays to accommodate maximum 24 fibres of ribbon cable for Type III-A and maximum 48 fibres of ribbon cable for Type III-B.

5.7.2 The FAS shall be used to splice ruggedised pigtailed with the external cable. The unit shall have following special functions and features:

Fibre Distribution Management System (Type-I, Type-II & Type-III) (GR No.GR/FDM-01/02 APR 2007)

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a) Ribbon Management i.e. splice & storage of 12 fibre ribbon with fan out arrangement

b) Device management (Splitters, WDMs)

c) Inter connection

d) Cross connection

e) Total fibre management

f) Modularity

g) Commonality

h) Ease of installation

i) High reliability

j) Snap fit arrangement

k) A tray wedge shall be provided in each shelf to enable working on the lower tray and ease of working.

5.8 Splice Holder for Individual fibre :

The single fibre (non-ribbon) splice holder shall be able to hold heat - shrinkable splice protectors. The manufacturer shall give the details of the protection sleeves to be used for the protection of the splice. The heat shrinkable splice protection sleeves shall be as per the TEC GR No. GR/PTS-01/02. APR 2006. If the manufacturer uses any other type of splice protection sleeves the same shall be supplied with the system along with 25 % spares.

5.9 Splice Holder for Ribbon fibre :

The 12 fibre ribbon splice holder shall be able to hold heat - shrinkable splice protectors. The manufacturer shall give the details of the protection sleeves to be used for the protection of the splice. The heat shrinkable splice protection sleeves shall be as per the TEC GR no. GR/PTS-02/01. JAN 2001. If the manufacturer uses any other type of splice protection sleeves the same shall be supplied with the system along with 25 % spares.

5.10 Transport Tubes :

Transport tubes shall be provided to guide the fibres (ribbon and non-ribbon) from terminations point of the cable to the entry port of the FAS. The transport tube shall be made of polyolefin / silicon and shall be non-kinking type. The material of the transport tube shall not affect the primary coated fibres, encapsulated fibre ribbons and other parts of the cable. Diameter of transport tube shall match the dimensions of the funnel and it shall be able to accommodate the fibres. The main transport tube shall be able to accommodate loose tubes (min). Suitable arrangement shall be provided to convert the OF cable into loose tubes for transporting into different FAS and cassette assemblies. The transport tube / flexible tube and the funnel arrangement shall be provided for the full capacity of the system.

Note1: The manufacturer shall test the material and provide the test results. A certificate of recognized testing laboratory may be accepted if in house test facilities are not available with the manufacturer.

Note2: Suitable arrangement for the fibres of different cable construction designs shall be provided for transporting it to cassette assemblies.

Note3: The transport tube shall be examined physically for its non kinking behavior.

5.11 Cable and Strength member termination Arrangement :

5.11.1 A complete arrangement to hold & terminate the cables and strength member(s) shall be provided.

5.11.2 Velcro tape or roll (5 meter X 25 mm) shall be provided to secure the pigtails and cassette assembly.

5.12 Fibre Organizer Tray :

These blocks shall be used to organize fibres, splices etc and shall have following basic features:

- a) Pre- assembled and pre-tested.
- b) Click-on Sub assemblies (snap fit).
- c) Controlled organizer hinging.
- d) Spliced or connectorised patching capability

5.12.1 Type of organizer Tray :

- a) Single Circuit organizer tray