



**ENGINEERING PROJECTS (INDIA) LTD.**

**(A. Govt. of India Enterprise)**

**Strategic Business Unit – 1, Corporate Office**

EPI/CO/ITD/TENDER-BSF-OFC/175/001

Date: 19.06.2025

**Sub: Expression of Interest for “Pre-tender tie-up with Empanelled and Other Agencies for Implementation of a Turnkey Project for providing Voice and Data Network over OFC with futuristic plan for Integration of Surveillance Equipment on 08 Nos. IB deployed Units under BSF Frontier HQ Jammu.”**

**Ref.:** EPI/CO/ITD/TENDER-BSF-OFC/175/001    Date of Issue: 18.06.2025

**Ref.:** CPP Portal Tender ID: 2025\_EPI\_238700\_1

**CORRIGENDUM No. 1**

Expression of Interest (EOI) uploaded to the CPP Portal (Tender ID: 2025\_EPI\_238700\_1) dated 18.06.2025 is hereby superseded by updated Corrigendum No. 1. All prospective bidders must refer Corrigendum No. 1 for the updated terms, specifications and timelines.

**ENGINEERING PROJECTS (INDIA) LIMITED**  
**SBU -1 Division - Corporate Office, New Delhi**

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## **ENGINEERING PROJECTS (INDIA) LTD**

(A Govt. of India Undertaking)  
CORE-3, SCOPE COMPLEX,  
NEW DELHI-110003

PHONE: +91-11-24361666; FAX:+91-11-24363426

E-mail: EPI-SBU1@EPI.GOV.IN ; Web: <https://epi.gov.in>

CIN-U27109 DL1970GOI 117585

**EXPRESSION OF INTEREST (EOI) INVITED FOR “Pre-tender tie-up with Empanelled and Other Agencies for Implementation of a Turnkey Project for providing Voice and Data Network over OFC with futuristic plan for Integration of Surveillance Equipment on 08 Nos. IB deployed Units under BSF Frontier HQ Jammu”.**

**EOI No:** EPI/CO/ITD/TENDER-BSF-OFC/175/001

**Date of Issue:** 19.06.2025

(EPIL reserves the right to cancel this request for EOI and / or invite afresh with or without amendments to this request for EOI, without liability or any obligation for such request for EOI and without assigning any reason. Information provided at this stage is indicative and EPIL reserves the right to amend / add further details in the EOI document. Further, this EOI does not in any way restrict EPIL from collaborating with any other Agency/ Agencies who express their interest for collaboration at a later stage after end of EOI).

Contact: For any clarification **Mr. Rajendra Yadav, Asstt. Manager (IT/SBU1)** at official number 011-24361666, Extn: 2338 Email: RAJENDRAYADAV@EPI.GOV.IN



## **Contents**

EOI NOTICE .....	3
I. PREAMBLE .....	5
II. ABOUT PROJECT .....	5
IV. SCOPE OF WORK.....	6
V. DESCRIPTION OF STORE .....	7
VI. INSTRUCTIONS .....	11
VII. ELIGIBILITY AND QUALIFICATION CRITERIA .....	11
VIII. VALIDITY OF OFFER .....	11
IX. AMENDMENT OF EOI DOCUMENT .....	11
X. EVALUATION CRITERIA AND METHOD OF EVALUATION .....	12
XI. TERMS AND CONDITIONS .....	12
ANNEXURE - 1 .....	13
ANNEXURE - 2 EMD Format.....	28
Technical Specification & QR &TDs (Annexure-3) .....	
PROFORMA- I (APPLICANT DETAILS/ COMPANY PROFILE) .....	11
PROFORMA-II - (AFFIDAVIT) .....	14
Annexure - A - EQC Requirements .....	16
Bill of Quantity .....	18
PRE BID AGREEMENT (PBA) .....	19



# ENGINEERING PROJECTS (INDIA) LTD

CORE-3, SCOPE COMPLEX, NEW DELHI-110003

## EOI NOTICE

EOI NO: EPI/CO/ITD/TENDER-BSF-OFC/175/001/EOI

Dated 19-06-2025

### Data Sheet

1.	Publishing Date	:	18-06-2025	09:00 Hrs
2.	EOI Document Download/ Start Date	:	18-06-2025	09:30 Hrs
3.	Clarification Start Date	:	19-06-2025	09:30 Hrs
4.	Clarification End Date	:	20-06-2025	17:00 Hrs
5.	EOI Submission Start Date	:	18-06-2025	10:00 Hrs
6.	EOI Submission End Date	:	24-06-2025	10:00 Hrs
7.	Submission of Price Bid Date (Offline in Sealed Envelope)	:	24-06-2025	10:00 Hrs
8.	EOI Opening Date	:	25-06-2025	10:00 Hrs
9.	EOI document Availability	:	<a href="https://etenders.gov.in">https://etenders.gov.in</a> , <a href="https://epi.gov.in">https://epi.gov.in</a>	
10.	Cost of EOI document	:	Rs.5,900/- (including GST)	
11.	Technical Bid Submission	:	Online through portal	
12.	Financial Bid Submission	:	Offline in sealed envelope	
13.	EOI EMD (in ₹)	:	Rs.70,00,000/- (Rupees Seventy Lakh Only)	

AGM /Head-SBU-1 for and on behalf of, **ENGINEERING PROJECTS (INDIA) LTD, Core-3, Scope Complex, NEW DELHI-110003**, invites online EOI for associating with EPIL as Pre-Bid Partner (through pre-bid tie up), on prescribed forms for participation in tender for Experienced Agencies for Pre-tender tie-up with Empanelled and Other Agencies for Implementation of a Turnkey Project for providing Voice and Data Network over OFC with futuristic plan for Integration of Surveillance Equipment on 08 Nos. IB deployed Units under BSF Frontier HQ Jammu **invited by Provisioning Directorate (Procurement Cell), Directorate of Border Security Force, Ministry of Home Affairs, Govt. of India vide their tender no. P-4/TURNKEY PROJECT/PC(C-EQPT.)/1123/BSF/2025** Dated: 09-05-2025 on CPP portal (<https://eprocure.gov.in/eprocure/app>) Tender ID: **2025\_BSF\_859612\_1** for BSF Tender documents.

#### I. Accessing/ Purchasing of EOI Documents

- Website <https://eprocure.gov.in/eprocure/app> may be referred for detailed terms and conditions of the EOI documents, which is available online. Amendments / Corrigendum / Addendum, if any would be hosted on the website only.
- Help for Contractors, FAQ, Information about DSC and Bidders Manual Kit containing the detailed guidelines for e-Procurement system are also available on Central Public Procurement Portal.





- c) It is mandatory for all the applicants to have class-III Digital Signature Certificate (in the name of person having power of attorney to sign the Bid) from any of the licensed Certifying Agency (Bidders can see the list of licensed CA's from the link [www.cca.gov.in](http://www.cca.gov.in) ) to participate in e-Procurement of EPIL.
- d) It is mandatory for the applicants to get their firm /company registered with eprocurement portal <https://etenders.gov.in> to have user ID & password.

**II. Instructions to Applicants for Online EOI Submission on the e-Procurement portal <https://etenders.gov.in>, <https://epi.gov.in>: Applicants may download and refer the instructions for Online bid submission from**

**III. Pre-bid meeting: Not Applicable**

**IV. The EOI document shall be digitally signed by the Authorized Signatory of the Applicant & Submitted online only. The authorized signatory must be in Possession of Power of Attorney before submitting the digitally signed EOI. Scanned copies of various documents can be prepared in different file format (PDF, JPEG).**

**V. EPIL's invites EOI from empanelled and other agencies to participate in above tender.**

**The following is the list of currently empanelled agencies with EPIL: -**

- M/s Elkosta Security Systems
- M/s Millennium Automation Pvt Ltd
- M/s Tata Advanced Systems Ltd
- M/s Trafitek Solutions Pvt Ltd
- M/s SNR Edatas Pvt Ltd
- M/s Synergy Telematics Pvt Ltd
- M/s Tera Software Ltd
- M/s Vision Plus Security Control Pvt Ltd

***Note: - The empanelled vendors having requisite experience have to submit only Financial Bid in sealed envelope with acceptance of Terms and Condition & Technical criteria of Tender Ref: P-4/TURNKEY PROJECT/PC(C-EQPT.)/1123/BSF/2025DATED: 09-05-2025 on CPP portal (<https://eprocure.gov.in/eprocure/app>) Tender ID: 2025\_BSF\_859612\_1.***

**VI. All queries, if any, in connection with this EOI shall be sent to following officials (in word format) to following nominated person by email as per above mentioned dates:**

Contact: For any clarification **Mr. Rajendra Yadav, Asstt. Manager (IT/SBU1)** at official number 011-24361666, Extn: 2338, Email: [RAJENDRAYADAV@EPI.GOV.IN](mailto:RAJENDRAYADAV@EPI.GOV.IN)

Website <https://etenders.gov.in>, <https://epi.gov.in> may be referred for detailed terms and conditions of the bidding documents, which is available on line. Amendments / Corrigendum / Addendum, if any would be hosted on the website only.



## I. PREAMBLE

**ENGINEERING PROJECTS (INDIA) LTD (EPIL)**, a government company incorporated in 1970 as A Government of India Enterprise under the administrative control of Ministry of Heavy Industries. Since then, EPI has admirably performed its assigned roles as the country's leading Prime Contracting Company and has left its imprint not only in India but in the overseas market as well where its past operation spread over a decade in the wake of oil boom in the Middle East. EPI successfully executed 33 odd projects valued over US\$ 1050.204 million in Iraq, Kuwait, Saudi Arabia, UAE, Yugoslavia, Maldives, Bhutan, Thailand and Oman.

EPI has executed over 650 multi-disciplinary projects in India valuing over Rs. 142025.620 million. Through the execution of these projects, EPI has in its own way contributed immensely in the development of the Nation and there is hardly any state in India where EPI's pronounced presence is not visible. EPI has the rare distinction of having worked for almost all Power Sectors and Steel Plants in India in Public Sector as well as in Private Sector. EPI's contribution in project execution for various sectors is also quite substantial.

EPI is proud to be one of the first few companies to have been awarded integrated certification for its Quality Management System, Environment Management System and Occupational Health and Safety Management System i.e. ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 for all its areas of operations. EPI is one of the first few companies to have been awarded ISO/IEC 27001:2013 for Information Security Management System and is a "Mini Ratna" Company.

## II. ABOUT PROJECT

**Name of the Work: Implementation of a Turnkey Project for providing Voice and Data Network over OFC with futuristic plan for Integration of Surveillance Equipment on 08 Nos. IB deployed Units under BSF Frontier HQ Jammu (on Turnkey) Basis.**

Sr.No.	Tentative Estimated Cost of Project (in ₹)	Period of Completion
1	Rs. 60.00 Crore	180 (One Hundred Eighty Days)

**EOI Details:-**

**EPIL EMD and EOI Fees: -**

Sr.No.	EMD FOR EOI (in ₹)	EOI Fee
1	Rs.70,00,000/- (Rupees Seventy Lakh Only)	Rs.5,900/- (including GST)

Bidder has to submit for this EOI, above mentioned EMD and EOI fee in favour of EPI.  
The Details of EPI Bank Account for submission of Tender Fee and EMD:

Name	<b>Engineering Projects India Limited</b>
Bank Name	<b>HDFC Bank</b>
Bank Address	209 -214, Kailash Building, 26, Kasturba Gandhi Marg, New Delhi - 110001
Account Number	00030350008503
IFSC Code	HDFC0000003



### **III. SCOPE OF WORK:**

1. Procurement, supply, trench laying, installation, testing and maintenance of OFC, PLB duct and accessories for optical access routes.
2. Procurement, supply, installation / commissioning, testing and maintenance of equipment and accessories (other than OFC) on turnkey basis for establishment of "Voice and Data Network on IB under FTR HQ Jammu along with establishment of Command-and-Control Center and integration of Surveillance Equipment presently held or procured in future like as CTVs/PTZ cameras, HHTIs etc in the AOR of 08 IB deployed BNs under FTR HQ Jammu.
3. The equipment should confirm all specification contained in the tender documents including TEC specification wherever applicable.
4. Scope of work also includes the detailed survey of the site and preparations of Network architecture and detailed project report (DPR) in consultation with FTR HQ Jammu.
5. In addition to installation and commissioning of the network so established by the L-1 firm. The L-1 also be responsible for software testing, rectification of defects, remove bugs, software up gradation, imparting of training to designated BSF personnel, hand over the site to BSF and maintain during Guarantee / Warranty and subsequently during CAMC period.
6. The design of project should be based on open architecture and scalable. BSF reserve the right of subsequent up gradation surveillance infrastructure of Project to meet the changing requirement by way of integrating additional surveillance equipment as and when required.
7. Additional equipment provided by BSF, the firm has to integrate them in Command & Control Centre on "NO Cost to BSF" basis during Guarantee / Warranty period.
8. Bidders has to integrate the Special Surveillance Equipment like HHTIs, CCTV / PTZ Cameras, NVR, DVR and other sensors presently available on the ground as per requirement of the field formation.



#### IV. DESCRIPTION OF STORE: -

Sr. No.	Items Description	Unit	Qty
1.	2:4 Power PLC splitter (2:4 Optical power splitter)	Nos.	80
2.	2:8 Power PLC splitter (2:8 Optical power splitter)	Nos.	94
3.	12 Core single mode Optical Fiber (Cable)	Mtrs	394000
4.	HDPE pipe for laying of OFC	Mtrs	394000
5.	24 Port Fiber LIU fully loaded with single mode SC adaptor, Adaptor plate and pigtail	Nos.	538
6.	SC-LC Fiber duplex patch cord	Nos.	112
7.	LC-LC Fiber duplex patch cord	Nos.	32
8.	SC-SC Fiber duplex patch cord	Nos.	1528
9.	UTP cat 6 patch cord 3 meter (CAT-6 Patch cord 3 Mtr)	Nos.	780
10.	Layer 3 managed switch Industrial grade with 4 SFP enabled and 24 port	Nos.	50
11.	IP 66 termination box for fiber termination and 8 port industrial switch	Nos.	538
12.	19 inches 9U network rack	Nos.	66
13.	19 inches 42 U network rack	Nos.	8
14.	Network Video recorder (NVR) 32 port with 16 TB HOD	Nos.	48
15.	Layer 2 managed switch Industrial grade with 2 SFP enabled and 8 Port POE	Nos.	450
16.	Layer 2 managed switch industrial grade with 2 SFP enabled and 8 Port	Nos.	30
17.	GPON 8 Port OLT	Nos.	8
18.	EMS software for managing GPON equipment	Nos.	8
19.	Monitor 55" (Industrial grade with wall mount)	Nos.	74
20.	Rack server (12 CPU)	Nos.	8
21.	Work station computer	Nos.	74
22.	3 KVA online UPS (With 60 Min Back up)	Nos.	74
23.	1 KVA offline UPS (with cabin with 120 Min backup)	Nos.	640



24.	GI Earthing	Nos.	96
25.	3.5 x 35SQ mm aluminium armoured cable for connection from Border track to mount/ FOP including laying as per CPWD specification	Mtrs	59500
26.	3 core x 4 SQ mm copper wire for connection or wiring (for short distance below 50 Mtr)	Mtrs	31200
27.	3 core x 2.5 SQ mm copper wire for connection or wiring (for short distance below 50 Mtr)	Mtrs	7800
28.	3 phase aluminium bus bar on wall of FOP/ Mount from 63 amp to 100 amp	Nos.	312
29.	Joint Box	Nos.	312
30.	6 / 5 amp 2 switch+ 2 socket box	Nos.	624
31.	15/ 16 amp 1 switch + 1 socket box	Nos.	624
32.	DP MCB	Nos.	312
33.	Lying of underground OFC cable for depth of 65 Cms		
34.	Installation & Commissioning Charges		

## V. OBJECTIVE OF EOI

EPIL wishes to execute Implementation of a Turnkey Project for providing Voice and Data Network over OFC with futuristic plan for Integration of Surveillance Equipment on 08 Nos. IB deployed Units under BSF Frontier HQ Jammu **invited by Provisioning Directorate (Procurement Cell), Directorate of Border Security Force, Ministry of Home Affairs, Govt. of India vide their tender no. P-4/TURNKEY PROJECT/PC(C-EQPT.)/1123/BSF/2025 Dated: 09-05-2025 on CPP portal (<https://eprocure.gov.in/eprocure/app>) Tender ID: 2025\_BSF\_859612\_1** for BSF Tender documents.

- a) For achieving this goal EPIL is participating in Bid for Implementation of a Turnkey Project for providing Voice and Data Network over OFC with futuristic plan for Integration of Surveillance Equipment on 08 Nos. IB deployed Units under BSF Frontier HQ Jammu. Therefore, EPIL intends to associate with suitable agency as pre-tender tie up to participate in bidding & execute project jointly.
- b) **The submitted technical details by the Applicants as per eligibility criteria shall be evaluated by EPIL. Thereafter EPIL will shortlist the suitable Applicant for further Tender Process as per tender no. P-4/TURNKEY PROJECT/PC(C-EQPT.)/1123/BSF/2025 Dated: 09-05-2025 on CPP portal (<https://eprocure.gov.in/eprocure/app>) Tender ID: 2025\_BSF\_859612\_1 for BSF Tender documents. EPIL will enter in MOU for shortlisted agency with qualified L1 bidder and then sign the Bid process as per tender condition.**



**Applicants are advised not to submit financial offer online and it should have to submit price bid offline in sealed envelopes at time of submission of bids.**

- c) Selected applicant for pre-tender tie up Partner has to submit **Bid Security of INR 70,00,000/- (Seventy lakh only)** (through Bank Guarantee / RTGS / NEFT) to EPIL for further submission (as bid security).

#### **SCOPE OF WORK & COMPLETION PERIOD**

- 1) Procurement, supply, trench laying, installation, testing and maintenance of OFC, PLB duct and accessories for optical access routes.
- 2) Procurement, supply, installation / commissioning, testing and maintenance of equipment and accessories (other than OFC) on turnkey basis for establishment of "Voice and Data Network on IB under FTR HQ Jammu along with establishment of Command-and-Control Center and integration of Surveillance Equipment presently held or procured in future like as CTVs/PTZ cameras, HHTIs etc in the AOR of 08 IB deployed BNs under FTR HQ Jammu.
- 3) The equipment should confirm all specification contained in the tender documents including TEC specification wherever applicable.
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- 7) Additional equipment provided by BSF, the firm has to integrate them in Command & Control Centre on "NO Cost to BSF" basis during Guarantee / Warranty period.
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32.	DP MCB	Nos.	312
33.	Laying of underground OFC cable for depth of 65 Cms		
34.	Installation & Commissioning Charges		

**Completion Period:** The Project should be completed in all respect for taking over by BSF as per terms and conditions of AT, within **180 days** from the date of issue of AT (Supply Order).

## **VII. INSTRUCTIONS**

Instructions for submission of the expression of interest are enclosed at **Annex-I** and guidelines for the preparation for the expression of interest is enclosed at Annex-II. Interested Companies should fill up the enclosed forms and submit together with a Covering Letter online at CPP portal <https://etenders.gov.in/eprocure/app> not later than EOI due date.

## **VIII. ELIGIBILITY AND QUALIFICATION CRITERIA**

Detailed Essential Qualification Criteria is attached herewith this EOI document as **Annexure-A**.

Applicants are advised to go through the requirements mentioned in the EQC document & submit their proposal accordingly.

## **IX. VALIDITY OF APPLICATION**

Validity of Application shall be 365 (Three Hundred SixtyFive) days from the date of opening of price bid by the Principal Client or for a further period if mutually accepted. EPI reserves the right to ask for the extension of validity if any.





## **X. AMENDMENT OF EOI DOCUMENT**

EPIL may issue addendum(s)/ corrigendum(s) to the EOI documents. In such case, the addendum(s)/ corrigendum(s) shall be issued at any time before closing time of EOI. The firms who have received the EOI documents must check website time to time <https://etenders.gov.in>, <https://epi.gov.in> and ensure that such addendum(s)/ corrigendum(s) (If any) also have been received by them. This shall be the responsibility of the prospective registered applicant to check for any such addendum(s)/ corrigendum(s) at the time of closing time of EOI and ensure that the application submitted by them are in accordance with all the addendum(s)/ corrigendum(s).

## **XI. EVALUATION CRITERIA AND METHOD OF EVALUATION**

Evaluation shall be carried out strictly as per eligibility conditions mentioned and based on verification of testimonials submitted. Applications received without testimonials might not be considered. Decision of EPIL in this regard shall be final & binding.

The EOI is issued with no commitment. EPIL reserves the right to withdraw this EOI at any time and or vary and part thereof at any stage. EPIL further reserves the right to disqualify any application, should it be so necessary at any stage.

## **XII. TERMS AND CONDITIONS**

1. Information provided at this stage is indicative and EPIL reserves the right to amend/add further details in the EOI document. Applicants shall go through all documents enclosed with this EOI along with the tender documents issued by Provisioning Directorate (Procurement Cell), Directorate of Border Security Force, Ministry of Home Affairs, Govt. of India.
2. EPIL reserves the right to accept or reject any or all application (s) without assigning any reasons whatsoever EPIL's decision in this regard shall be binding and final.
3. If any of the information, furnished by the applicant, is found incorrect at a later stage, they shall be liable to be barred from participating in current and subsequent opportunities with EPIL. EPIL reserves the right to verify the particulars furnished by the applicant independently.
4. The applicants after submitting the response to this EOI, agrees with EPIL for honoring all aspects of fair-trade practices.
5. The applicants shall bear all costs associated with the preparation and submission of the response to this EOI.
6. Applicant selected shall be notified through their registered emails.
7. Any new Corrigendum issued by Client before submission of bid also may have to be incorporated as and when required.
8. Unless otherwise specified anywhere in the document, all technical specifications for work execution shall be as per latest relevant Specifications, Client specifications and Good Industry Practice.



## ANNEXURE - 1

### INSTRUCTIONS FOR SUBMISSION OF EXPRESSION OF INTEREST STATEMENT

1. Expression of Interest proposal must be submitted together with a covering Letter online at CPP portal <https://etenders.gov.in> not later than EOI due date.

### GUIDELINES FOR PREPARATION OF EXPRESSION OF INTEREST

1. Expression of Interest is to be filled up in the enclosed forms in single copy.
2. Complete name of firm, date of establishment & type of organization whether individual, proprietorship, partnership, private limited company, limited company etc. be filled up in Proforma-I also indicating name of affiliate firms, their years of establishment, countries of origin and type of organization.
3. Exact and complete office address, business address, telephone number, Fax, number, E- mail and cable address.
4. If present firm is the successor to or outgrowth of one or more predecessor firms, fresh name(s) of former entity (ties) and the year(s) of their original establishment.
5. The EOI is to be submitted by submitting duly filled up forms prescribed below:
  - a) Details of Applicants as per Proforma I.
  - b) Affidavit as per Proforma II
  - c) Power of Attorney (General)
  - d) Memorandum and Article of Association of the applicant.
  - e) Duly filled up forms/details as per EQC document attached herewith:

### EQC requirement attached as Annexure - A

#### PROFORMA- I (APPLICANT DETAILS/ COMPANY PROFILE)

1	Full name of the firm (as per registration).	
2	Date and Year of establishment & type of organization whether individual/ proprietorship/ partnership/ private limited company/ limited company also indicating name of affiliate firms, their years of establishment, countries of origin and type of organization.	
3	Registered Head Office & Postal Address Telephone Nos., email id, Fax No etc.	
4	Name of Contact Person, Designation, Phone no & email id	
5	Constitution of firm (give full details including names of Directors/ Partners/ Executives etc.) <b>Attach Memorandum and Articles of the Association, Certificate of Registration &amp; Proof of Address, Copy of Power of Attorney.</b>	
6	Particulars of Registration with Government / SemiGovt. Organization/Public Sector/ Undertaking & Local Bodies/PAN No/TAN No/GST etc. if any	



## PROFORMA-II - (AFFIDAVIT)

(On non-judicial stamp paper of Rs. 100/- duly notarized)

I/we, the undersigned, do hereby solemnly affirm and declare that-

1. Neither our firm nor any of the members/ partners in any form/manner as an individual or the constituent partner in case of partnership firm/PRE-BID PARTNER/MOU have been declared non- performer by Central/ State Government Department in India including authority controlled by them during the last two years prior to the date of EOI submission.
2. As on date our EOI submission, neither our firm nor any of the members/ partners in any manner as an individual or the constituent partner in case of partnership firm/PRE-BID PARTNER/MOU are debarred for tendering, blacklisted, suspended in Central/ State Government Department in India including authority controlled by them.
3. As on date of our EOI submission, neither our firm nor any of the members/ partners in any form/manner as an individual or the constituent partner in case of partnership firm/ PRE-BID PARTNER/MOU are in Corporate Insolvency Resolution Process (CIRP)/ liquidation/ Winding up/ CDR/ SDR/ S4A/ Flexible Structuring or any other restructuring scheme due to financial stress and have not been in default on any debt obligations on the EOI due date.
4. No contract agreement between EPIL or its subsidiaries and either our firm or any of the members/ partners in any form/manner as an individual or the constituent partner in case of partnership firm/PRE-BID PARTNER/MOU have been terminated during the last two years prior to the date of our EOI submission.
5. We have no objection to EPIL requesting to any bank, person, firm or body and any such agency furnishing pertinent information as deemed necessary or to verify this statement or regarding our competence and general reputation.
6. We understand that further qualifying information may be requested by EPIL and we agree to furnish any such information at the request of EPIL within the prescribed time.
7. We bind ourselves with all the stipulations of the EOI Document including period of completion, provision of adequate equipment, personnel and other resources required for completion within the stipulated completion period and agree to augment any resources, if found necessary for timely completion of the project, as desired by the EPIL.
8. **Certification on submitted/ Attached Documents/ Credentials:**

That the facts stated and documents enclosed by us in the EOI Application are true and correct and we have not concealed/ suppressed any facts/ record/ documents and/ or misrepresented the facts/ record/ documents.

I/ We further declare and certify that I/ We have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.

I/ We also understand that my/ our offer will be evaluated based on the documents/ credentials submitted along with the offer and same shall be binding upon me/ us.

I/ We declare that the information and documents submitted along with the tender by me/us are correct and I/we are fully responsible for the correctness of the information and documents, submitted by us.



I/ We understand that if the certificates regarding eligibility criteria submitted by us are found to be forged/ false or incorrect or any suppression of information and misrepresentation is noticed at any time during process for evaluation of tenders, it shall lead to forfeiture of the tender EMD besides disqualification for future tenders of EPIL & its subsidiaries for a period of two years. Further, I/ We (insert name of the tenderer) \*\* and all my/ our constituents understand that my/ our offer shall be summarily rejected.

I/ We also understand that if the certificates submitted by us are found to be false/ forged or incorrect or any suppression of information and misrepresentation is noticed at any time after the award of the contract, it will lead to termination of the contract, along with forfeiture of EMD/ SD and Performance Guarantee besides any other action provided in the contract including disqualification for future tenders of EPIL & its subsidiaries for a period of two years.

9. We have read and understood all the provisions included in the Integrity Pact and undertake to abide by them, if applicable.

10. We have read and understood all the provisions included in the EOI documents and undertake to abide by them.

#### Model Certificate for Tenders

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration with the Competent Authority shall be attached.]

#### Model Certificate for Tenders for Works involving possibility of sub-contracting

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not subcontract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration with the Competent Authority shall be attached.

11. The information furnished by us is true and correct and we understand the consequences, in case, any of the information furnished is not found to be true/ correct and /or any suppression/ concealment of facts/ record or misrepresentation of facts/ record is noticed.

(Signed by the Authorized Representative of the Firm)

Name of the Authorized  
Representative. Name of the Firm.  
Dated:

## **Annexure - A - EQC Requirements**

### **Qualification Requirement:**

	<b>Pre-Qualification Criteria</b>	<b>Reference Details / Documentary Evidence</b>
1.	The bidder should be sole proprietary / partnership firm of a company registered with the Companies Act / Registrar of Firms / Registrar of Companies (as applicable)	Company Incorporation Certificate, Partnership Deed, Memorandum and Article of Association need to be submitted.
2.	1) The Bidder shall have any three (03) of the following Certifications valid at the time of submission of bid: a) ISO 9001: 2015 b) ISO / IEC 20000-1: 2018 c) ISO / IEC 27001: 2022 d) ISO 14001: 2015 e) ISO 45001: 2018 f) CMMi Level 3 or CMMi 5 certification	Copies of all certificate need to be submitted.
3.	The bidder should have annual average turnover of Rs. 24 Crore for the last 3 financial years. (F.Y. 2021-2022, 2022-2023, 2023-2024)	CA Certified / Audited copies of financial statements for the last 03 financial years required to be submitted with valid UDIN. (F.Y. 2021-2022, 2022-2023, 2023-2024)
4.	CA certified with valid UDIN for turnover and for positive net worth.	CA certified documents with valid UDIN
5.	The bidder must have positive net worth and at least 02 profitable operations for the last 3 years preceding from the date of submission of EOI.	Certified / audited copies of profit and loss, net worth statements and profitable operations for last 3 preceding financial years need to be submitted.
6.	The Bidder should be a regular income tax payee having filed its income tax return for last 3 financial years.	CA certified / audited copies of Income Tax return for last 3 financial years need to be submitted.
7.	The Bidder must have valid GST registration certificate, latest GST return statements and valid PAN card.	All Bidder need to be submitted valid GST registration certificate, PAN Card along-with copies of latest GST return statements duly certified from CA concerned.
8.	The Bidder should not have been blacklisted by any of the PSUs/ State or Central Govt. Departments / Ministries for the past 2 years.	An undertaking signed by CEO / Authorized Signatory of the company to be provided on Non – judicial stamp paper of INR 100/- and document duly attested by notary public.

9.	<p>The Bidder must have completed similar work / project in last 7 years.</p> <p>a) 1 (One) similar works each costing not less than 80% of the Estimated Cost of Project</p> <p style="text-align: center;"><b>OR</b></p> <p>b) 2 (Two) similar works each costing not less than 50% of the Estimated Cost of Project.</p> <p style="text-align: center;"><b>OR</b></p> <p>c) 3 (Three) similar works each costing not less than 40% of the Estimated Cost of Project.</p> <p><b>Note:</b> Similar work / project means that Supply, Installation, Testing &amp; Commissioning of OFC Cable / HDPE pipe for laying of OFC / any or more item specified in Description of store of this EOI</p>	<p>Attach work orders / certificates specifying “completion”/ Substantially completion 90% of Work Order value .</p>
10.	<p>Experience Criteria</p>	<p>(a) Completion certificate issued by end user / Owner (or their consultant who has been duly authorized by owner to issue such certificate).</p> <p>(b) The completion certificates shall have details like work order no./date, brief scope of work, completion date, job completion value, etc.</p>
11.	<p>Declaration for acceptance of terms &amp; condition of this EOI.</p>	<p>An undertaking signed by CEO / Authorized Signatory of the company to be provided on Non – judicial stamp paper of INR 100/- and document duly attested by notary public.</p>

**Note: - The empaneled vendors having requisite experience have to submit only Financial Bid in sealed envelope with acceptance of Terms and Condition & Technical criteria of Tender Ref: P-4/TURNKEY PROJECT/PC(C-EQPT.) /1123/BSF/2025DATED: 09-05-2025 on CPP portal (<https://eprocure.gov.in/eprocure/app>) Tender ID: 2025\_BSF\_859612\_1.**



**A. ADDITIONAL TERMS AND CONDITIONS:**

**1. PRICE SCHEDULE (Refer BOQ FORMAT)**

2. The bidders shall comply with all other terms and conditions of this EOI, as mentioned in the following tender number: Tender Ref: P-4/TURNKEY PROJECT/PC(C-EQPT.) /1123/BSF/2025DATED: 09-05-2025 on CPP portal (<https://eprocure.gov.in/eprocure/app>) Tender ID: 2025\_BSF\_859612\_1.

3. **Manufactures Authorization Certificate (MAF):** The bidder should submit Manufactures Authorization Certificate (MAF) from Original Equipment Manufacturers (OEMs) specific to the bid for items mentioned in this EOI in the name of EPIL. *In case of unavailability of MAF at the time of EOI response, bidder should submit an undertaking stating that the same shall be submitted before opening of financial bid.*

4. **TECHNICAL SPECIFICATIONS:** Technical Specification & QR &TDs: (Must Comply) Qualitative Requirements and Trial Directives of Implementation of a Turnkey Project for Providing Voice & Data Network over OFC with Futuristic Plan for Integration of Surveillance Equipment's. (Refer Annexure-3)

**5. APPENDIX (1-17)**



## PRE-TENDER TIE-UP MOU

WHEREAS Engineering Projects (India) Ltd. (EPI) is a premier construction company of Govt. of India, having its registered office at Core –3, Scope Complex, 7, Institutional Area, Lodhi Road, New Delhi-110 003, India (hereinafter called "EPI" which expression shall unless repugnant to the context include its successors and assigns).

WHEREAS **Provisioning Directorate (Procurement Cell), Directorate of Border Security Force, Ministry of Home Affairs, Govt. of India** (Here in after referred to as "Client") vide their tender no. P-4/TURNKEY PROJECT/PC(C-EQPT.)/1123/BSF/2025 Dated: 09-05-2025 on CPP portal (<https://eprocure.gov.in/eprocure/app>) Tender ID: **2025\_BSF\_859612\_1**, has invited tenders for "Implementation of a Turnkey Project for providing Voice and Data Network over OFC with futuristic plan for Integration of Surveillance Equipment on 08 Nos. IB deployed Units under BSF Frontier HQ Jammu. (herein after referred to as 'Project').

WHEREAS EPI wishes select an agency to participate in the above-mentioned projects.

WHEREAS \_\_\_\_\_ with their registered office \_\_\_\_\_ (herein after called "\_\_\_\_\_") which expression shall unless repugnant to the context include its successors and assigns) agreed to participate in the tenders for **"Implementation of a Turnkey Project for providing Voice and Data Network over OFC with futuristic plan for Integration of Surveillance Equipment on 08 Nos. IB deployed Units under BSF Frontier HQ Jammu (Turnkey) Basis"** (herein after referred to as "Works" as spelt out in Clause No. 2.0 and Clause 5.0 of this MOU) of the above Projects as PRE-BID PARTNER of EPI.

WHEREAS EPI and \_\_\_\_\_ are hereinafter referred to collectively as "Parties".

AND WHEREAS EPI now agrees to associate \_\_\_\_\_ as its Pre-Bid Partner for execution of the above-mentioned "Works".

NOW THEREFORE, it is hereby agreed by and between EPI and \_\_\_\_\_ to associate for the above "Works" on the following terms and conditions:

The First Party and the Second Party hereby mutually agree as under:

1. Both Parties agree to work jointly to identify the projects of common interest in India.
2. The Projects could be identified by either of the parties and they could approach each other for exclusive co-operation.
3. The co-operation for execution of agreed and identified projects shall be based on mutual benefit of the parties.
4. In case any tender identified by both parties, prior to bidding/submission of offer for a particular accepted agreed project, the parties with mutual consent shall enter into



“Prebidding Agreement” detailing each party’s obligations and responsibilities for execution of the project, including allocation of scope of work in the project and the parties’ respective obligations in the related bidding costs and expenses. On award of work by client a Detailed Contract Agreement shall be signed between EPI & Second party which will supersede the above Pre-bidding agreement.

5. This MOU does not limit both parties from collaborating or entering into agreements with any other party for any other project in the similar fields, other than the identified project in that particular state for which they are jointly bidding or have entered into a Prebidding Agreement. However party can identify and inform other party about new project in any state for joint bidding.
6. In such projects where the parties shall jointly qualify to bid and enter into a Pre-bidding Agreement, Parties shall not participate individually either directly or indirectly and /or through any joint venture / PRE-BID PARTNER etc. entered into with any other company / organization / proprietor / individual constituted for that particular Notice Inviting Tender (NIT).
7. None of the Parties shall make or enter into any contract or commitment on behalf of the other party without its express consent in writing.
8. Each party shall bear its own cost as per the division of scope of work between the parties as determined at the time of bidding, on case-to-case basis. In case of non-award of project to the parties by client, due to any reason whatsoever, the parties shall have no claim on each other.
9. Both parties are committed to conduct their business, free from unlawful, unethical or fraudulent activity and in full compliance with the existing laws of land.

#### **BROAD TERMS & CONDITIONS IN CASE PRE-BID PARTNER / ASSOCIATION BETWEEN THE PARTIES**

- i. **Second Party** shall submit prescribed Tender Fee and full amount of bid security as per tender requirement at the time of bidding by Pre-Bid Partner to client and total project performance bank guarantee and any other bank guarantee and obtain insurances as per client’s tender conditions to PRE-BID PARTNER wherever required for package for which BID is applied by **Second Party**. No interest shall be borne/ paid by EPI for the same. **Second Party** has to submit the undertaking for the same along with this MOU.
- ii. None of the parties shall make or enter into any contract or commitment on behalf of other party without its express consent in writing.
- iii. As Pre-Bid Partner, **First Party** shall be the point of contact by Client for the purposes of the Project.

EPI shall issue Authorization letter to the Authorized Representative of **First Party** to deal all the matters related to this Contract / MOU.

#### **iv. Taxes and Duties :**

All kind of Taxes, Duties like GST (as applicable as on date and during commencement of contract), Cess, Levies, Royalties, custom duties (if applicable)

and other expenses etc. for the “Works” shall be borne by the Pre-Bid Partner Second Party, The payment of GST applicable on the total Contract value of PRE-BID PARTNER with Client shall be the responsibility of PRE-BID PARTNER Second Party.

- v. On award of work by Client, EPI may award the scope of work of its part in Pre-Bid Partner to Second Party fully as per mutually agreed fixed fee that shall be mutually discussed at the Financial Bid Stage for value of work based on terms and conditions of client’s tender or as mutually agreed between the parties. EPI shall be Lead Partner and Proportionate share of work shall \_\_\_\_\_% of EPIL and \_\_\_\_\_% of Second Partner.
- vi. In case project financing is required at any stage of the project, Second Party shall engage financial partner as per the requirement of project. All liabilities of the financial partner shall be in the scope of selected second partner.
- vii. The proposal offered by Second Party to EPI shall deem to include all charges, all direct and indirect cost of works, materials, labour, plant & equipment, all taxes, duties, GST, levies, royalties, etc., all transportation charges including e-way bill charges & cartage of issue material, electricity and water charges and for all expenses such as site offices expenses, labor camp, bank guarantee charges, insurance charges, EPF/ CPF/ Statutory contributions, preparation of all required design & detailed engineering and all required drawings etc., facilities and other expenses whatsoever, incurred on execution, completion and maintenance of the “Works” as per ‘Tender Documents’ and their own overheads and profit etc. Second Party shall comply with all the requirements laid down as per ‘Tender Documents’ and shall un-conditionally abide by its proposal at pre-tender stage for execution of “Works” as per terms, conditions, specifications, drawings, documents etc. given in the ‘Tender Documents’ for the completion, handing over, maintenance period etc. for the project. All men, materials, machinery, tools and plants, infra-structure, resources etc., as required for execution of “Works” shall be provided and arranged by Second Party.
- viii. Insurance charges for insurance to be taken by Pre-Bid Partner for the project as per contract with Client shall be borne by Second Party.

Second Party shall take insurance cover at its own cost towards Workman Compensation Act for its own workers, employees and for the Plant & Equipment deployed by Second Party at the project site and shall furnish documentary proof of the same to EPI. Second Party shall assist EPI in follow up with insurance company in case of any claim related to total scope of work. EPI is not liable to pay any claim of the Second Party if it is not paid by insurance company due to any reasons whatsoever.

- ix. Second Party shall provide and maintain facilities (furnished office & one vehicle for site for EPI staff ) for exclusive use of EPI which shall be provided until completion of DLP. These facilities and vehicles shall be the property of the Second Party at the end of the contract.
- x. The initial validity period of proposal of Second Party shall be one month more than the validity period of Pre-Bid Partner’s submission to Client. The validity period of their offer shall be extended by First Party as and when desired by Client.

- xi.** Each party shall bear its own expenses for preparation and submission of bid. In case of non-award of the project to Pre-Bid Partner by Client due to any reason, Second Party shall have no claim whatsoever on EPI.
- xii.** All the cost of travel, lodging, boarding etc. towards visits by Client, their Consultant etc. to the manufacturing units/works for the inspection of materials, equipment etc. under the scope of work shall be borne by Second Party, if applicable under the contract between Pre-Bid Partner and Client / Employer.
- xiii.** Payments:

The Payment shall be received from Client/Employer in the designated Joint Bank Account which shall be opened specifically for this Project and Payment shall be transferred to Second Party as per standing instructions after the deduction of EPI fee the inclusive GST as agreed above for all the payment received from the Client/Employer, after 10 working days.
- xiv.** Second Party shall be fully responsible to complete the “Works” in workmen like manner to the satisfaction of Client and EPI by maintaining high standard of quality and precision as per ‘Tender documents’, Agreements, Terms & Conditions, Specifications, Drawings etc., within contractual completion period and within their quoted rates/amount. In case Client reduces or increases scope of work of this tender, the same shall be binding on behalf of Pre-Bid Partner on Second Party and Second Party has to execute the same.
- xv.** Second Party shall be responsible for timely completion of the “Works” within the contractual completion period. Total Liquidated Damages/Compensation for delay, if any imposed/deducted from PRE-BID PARTNER bills by Client shall be recovered from Pre-Bid Partner bills or other dues.
- xvi.** In case the project execution is delayed beyond the contractual scheduled completion period due to reasons attributable to Second Party, the staff and site office expenses of EPI for extended period shall be paid by PRE-BID PARTNER to EPI.
- xvii.** Second Party shall be responsible for obtaining all approvals from Client with regard to quality of materials & workmanship and measurements etc. for their portion of work. All such approvals shall be in the name and title of PRE-BID PARTNER. Second Party shall be responsible for reconciliation of issue material with Client, if any. Any shortfall in issue materials shall be made good / recovered from Second Party as per terms of PRE-BID PARTNER’s contract with the Client.
- xviii.** Second Party shall not assign or transfer its interest specified in this MOU to any other party.
- xix.** If desired by EPI, Second Party shall be available/ associate with EPI in meetings/ negotiations with EPI/ Client. Second Party shall furnish all information and clarifications as and when required by EPI/ Client. Second Party shall abide by any modifications/ changes etc. in tender prices, terms & conditions for the work, agreed



by it during negotiations with Client/EPI. Each party shall bear its own expenses for these purposes.

**xx.** Second Party shall deploy sufficient plant & equipment of the required capacity and in good working condition for completion of the works in stipulated time with required quality. The equipment should either be owned by Second Party or hired/leased. The deployment of equipment by Second Party shall be as decided by First Party and client and the same shall not be less than the minimum deployment stipulated by the Client, if any, for execution of "Works" and as per schedule agreed with Client. Second Party shall make arrangement for regular maintenance including preventive and breakdown maintenance and maintain stock of essential spares at site/near to site so as to ensure minimum breakdown time of equipment. The equipment once brought to site shall not be allowed to be removed without the consent of EPI. In case Second Party fails to deploy sufficient equipment to the satisfaction of EPI or in case of prolonged breakdown of equipment, EPI at its sole discretion shall arrange the required equipment and debit all the related costs including ten percent overheads of EPI plus applicable GST and shall recover the same from the due payments of PARTY, including from its bank guarantees available with EPI.

**xxi.** On award of work by Client, the followings documents shall become part of detailed contract agreement between EPI and selected applicant/associate and in case of any ambiguity the order of precedence shall be as under:

- i. Agreement between EPI/PRE-BID PARTNER and Client
- ii. Client's tender document and/or EPI/PRE-BID PARTNER offer submitted to Client.
- iii. Detailed Contract Agreement to be signed between EPI & second party.
- iv. EPI's General Conditions of Contract (GCC) with latest amendment thereof.

**xxii. The terms are Summarized as:-**

**A. Division of Work:-**

**i. Pre Tender and agreement stage:-**

- As specified in MOU, on award of work by Client, EPI may award the entire scope of work (if no condition is mentioned Client PRE-BID PARTNER Bid Conditions) to PRE-BID PARTNER Partner fully as per mutually agreed fixed fee of EPI plus applicable GST/Taxation which will be cleared from Gross certified Bills/Gross Payments.
- Required tender Fees, Bid Security, EMD's, PBGs or any other Security/ expenditure etc as required for the entire Project will be borne/paid/arranged by the PRE-BID PARTNER Partner. EPI will not bear any type of expenditure as mentioned above. If the tender requirements mandate the submission of such securities by the EPI as lead partner, the PRE-BID PARTNER partner will provide all bank guarantee/securities, Expenditures as applicable.

- EPI will play the role of Project coordination, monitor and liaison as lead partner with the client along with PRE-BID PARTNER Partner and as mutually agreed EPI will charge fixed fee of EPI of ....% plus applicable GST. As Lead partner, EPI shall designate project team and also authorize PRE-BID PARTNER partner to deal with the tender, sign the agreement, enter into contract and to conduct all business before/after award of work and during contract execution in respect of the work on behalf of PRE-BID PARTNER.
- In case at all, client contracts required execution of work by both PRE-BID PARTNER partner(s) in the percentage as define in client contract. In such cases, the EPI portion of work will also be executed by the PRE-BID PARTNER partner and EPI will charge a fix margin of .....% plus applicable GST on this fee on EPI portion of work & for balance of PRE-BID PARTNER partner work, EPI will charge @ .....% plus applicable GST on this fee for project coordination, monitoring and liaison for the client along with PRE-BID PARTNER Partner.

## **ii. Post Award Pre-Bid Partner Procedure:-**

- GST and PAN number shall be taken in the name of PRE-BID PARTNER (unincorporated) by PRE-BID PARTNER partner(s) as & when required at the expense of PRE-BID PARTNER as association.
- Execution of EPI entire work through the PRE-BID PARTNER Partner(s) may be done with bearing entire liabilities by the PRE-BID PARTNER partner of EPI.
- In case PRE-BID PARTNER partner executing entire work, the Consultant to be deployed (architect/consultant) will be appointed by PRE-BID PARTNER Partner in consultation & approval from EPI and it's fees is to be paid by the PRE-BID PARTNER partner periodically after joint certification of their bill.
- The financial arrangement will be done by the PRE-BID PARTNER Partner to maintain the Cash Flow for Smooth & timely Execution of Work. Required Insurances, expenditure on all statutory compliances and any financial arrangements required as per client tender condition.
- The PRE-BID PARTNER partner will handle the procurement of materials, payments to labour/manpower, suppliers, and other project-related expenses through the joint account of the PRE-BID PARTNER, ensuring proper financial management with transparency through Escrow account.
- The PRE-BID PARTNER Partner shall maintain the required progress of work to be completed well in time as mentioned in bid documents.
- All the statutory or Central/State/ Municipal/other Government department's compliances shall be the sole responsibility of PRE-BID PARTNER partner.
- All Receipts in the form of seed money required initially or during the course of construction to maintain the cash Flow for timely and successful completion of work shall be contributed & deposited in the Separate Specific Project joint account by the PRE-BID PARTNER partner. The Joint account will be applicable to avail any advance from client for execution of the project.
- The PRE-BID PARTNER will strictly comply with the subcontracting provisions if they appear in the NIT tender document of Client. In the view of sub contacting limitations from client and to comply the same, the material procurement will be done through PRE-BID PARTNER account only.

- EPI as the lead member will execute the work through PRE-BID PARTNER for adherence of subcontracting tender condition and in any case subcontracting will be executed through PRE-BID PARTNER only.
- This MOU/ PRE-BID PARTNER will survive if there is subsequent change in composition or structure of EPI from PSU to any other category due to any disinvestment process or any other GOI instructions/guidelines/directions issued after signing of PRE-BID PARTNER /MOU etc.

### **iii. After completion of project:-**

- Any Liquidated Damages (LD) or penalties imposed by the client for delays as per terms of the Contract Agreement, performance issues, or non-compliance with contractual obligations or by any statutory/Local Bodies/Department will be the responsibility of the PRE-BID PARTNER partner(s). EPI will not be liable for any penalties arising from the project execution, as the PRE-BID PARTNER partner(s) will be handling the execution. Any recovery imposed by any of CVC/CAG agencies shall be paid by the PRE-BID PARTNER partner(s) along with reply for query (s) if raised.
- The PRE-BID PARTNER Partner(s) shall be responsible for all works/issues/Expenditures related with Defect Liability Period or extended period.

If the dispute arises between EPI & Client, all the documentation viz Preparation of Claims etc shall be prepared by the PRE-BID PARTNER Partner duly vetted by Lead Partner before submission. All the expenditure towards contesting the case before court/Arbitral Tribunal or any other authority shall be borne by the PRE-BID PARTNER. Further, if decision is against PRE-BID PARTNER then such amount awarded in favour of the other party shall be borne by PRE-BID PARTNER. These include all expenses towards court's fee, advocates fee, Arbitral fees or any other fees etc.

### **xxiii. CONFIDENTIALITY**

The Parties acknowledge that the existence and the terms of this MOU and any oral or written information exchanged between the Parties in connection with the preparation and performance of this MOU are regarded as confidential information. Each Party shall maintain confidentiality of all such confidential information, and without obtaining the written consent of the other Party, it shall not disclose any such relevant confidential information to any third parties, except for the information that (with a written notice to other party): (a) is or will be in the public domain (other than through the receiving Party's unauthorized disclosure); (b) is under the obligation to be disclosed pursuant to the applicable laws or regulations, or orders of the court or other government authorities; or (c) is required to be disclosed by any Party to its shareholders, investors, legal counsels or financial advisors regarding the transaction contemplated hereunder, provided that such shareholders, investors, legal counsels or financial advisors shall be bound by the confidentiality obligations similar to those set forth in this Section. Disclosure of any confidential information by the staff members or agencies hired by any Party shall be deemed disclosure of such confidential information by such Party, which Party shall be held liable for breach of this MOU. This Section shall survive the termination of this Agreement for any reason.



## **10. COMMENCEMENT, DURATION, MODIFICATION AND TERMINATION OF MOU**

- i. This MOU shall be valid for a period of 2 (Two) years commencing from the date of execution of MOU (first above written) and can be further extended by mutual consent of the parties in writing.
- ii.
- iii. The modification/addition / deletion of the clauses of the MOU can be done with the consent of both the parties, only in writing.
- iv.
- v. Either party may terminate this MOU by giving a notice of 30 (Thirty) days to the other party without any compensation, provided that both the parties shall honor the pending commitment(s) as on the date of such Notice of Termination.
- vi. If any of the Parties commits breach of terms of this MOU or is declared insolvent by a court of competent jurisdiction or if either Party undergoes any winding up either voluntarily or under court proceedings, this MOU will stand terminated with immediate effect.

## **11. GOVERNING LAW AND DISPUTE RESOLUTION**

This bidding agreement shall be governed under Indian Laws.

Any dispute, controversy or claim arising out of or relating to this agreement shall be first resolved amicably by mutual discussions within 90 days of from the date of receipt of notice of dispute by the party. If the Parties are unable to amicably resolve the dispute within a reasonable period, then the dispute may be referred to Arbitration by either party. Such arbitration would be presided over by a Sole Arbitrator appointed with mutual consent of the parties.

The Arbitration proceedings shall be governed by the provisions of Arbitration and Conciliation Act, 1996 (as amended by amending acts of 2015, 2019, 2021 and any past or future amendment from time to time). The language of the Arbitration shall be English and the Seat of the Arbitration shall be Delhi. The award of the sole Arbitrator shall be final and binding upon the parties."

The language of the arbitration shall be English language. The venue of the arbitration proceedings shall be Delhi.

## **12. JURIDICTION**

The Courts of Delhi only shall have the jurisdiction to entertain any matter or dispute on account of any action arising out of this MOU.

## **13. INDEMNIFICATION**

Each party will agree to defend, hold harmless, and indemnify the other from any cost, claims, expenses incurred by or imposed upon the other party as a result of or in connection with Party's failure, loss, or damages of any type, including attorney fees, to the extent that they arise from the breach of the MOU, and default in maintaining strict confidentiality (Clause 11 of MOU) and/or willful misconduct or negligence.





The parties waive their rights of recourse to another regarding damages to property caused by third party.

14. The language of the MOU and of any correspondence between the Parties shall be English.

This Memorandum of Understanding (MOU) is signed in duplicate with each party receiving one original document.

For and on behalf of

For and on behalf of

**Engineering Projects (India) Ltd.**

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Name :  
Position :

---

Name :  
Position :

Witnesses:

- 1.
- 2.

**Disclaimer:**

The above given terms and conditions for Pre-Tender Tie-Up MOU are general. EPI shall not be liable for authorized or unauthorized, usage of the presented material and users by using the same expressly agree to indemnify EPI against any and all claims, expenses, damages and liabilities arising out of the materials by such users, including any and all direct, indirect, incidental, special or consequential damages.





## Annexure-2

(to be executed on a non-judicial stamp paper of Rs. 100/- only.)

### **BANK GUARANTEE FOR EMD/Security Deposit** (Tender Notice No. and Date)

In consideration of Chairman & managing Director, Engineering Projects (India) Limited, (A Govt. of India Enterprise), Core-3, Scope Complex, Lodhi Road, New Delhi Pin 110003. (hereinafter called the EPI) having agreed to accept bank Guarantee of Rs ..... in lieu of EARNEST MONEY DEPOSIT from ..... (hereinafter called the Supplier/ Contractor/ Sub-Contractor, which expression shall include its heirs, successors and assignees) in respect of the Tender

.....  
We, ..... bank having its registered/head for at ..... (hereinafter referred to as the Bank) do hereby agree and undertake to pay to EPI without demur or protest an amount not exceeding Rs..... on demand by EPI.

We the above said Bank further agree and undertake to pay the said amount of Rs..... without any demur on demand within 48 hours. Any demand made on the Bank by EPI shall be conclusive as regards the amount due and payable by the Bank under this guarantee.

We the above said Bank further agree that the guarantee herein contained shall be in full force and in effect until ..... date ..... Unless a demand or claim under this guarantee is made on us in writing on or before ..... date ..... , we shall be discharged from all liabilities under this guarantee thereafter.

We, the above said Bank, further agree that EPI shall have full liberty, without our consent and without affecting in any manner our obligation to verify, modify or delete any of the conditions.

We, the above said Bank, lastly undertake not to revoke this guarantee during its currency except with the prior consent of EPI in writing.

Bank

For and behalf of the

Dated.....this day of.....2025.

NOTE For and on behalf of the Bank : on a Non-Judicial stamp paper of Rs. 100/- (Rupees One hundred only)



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
2.1	Conductor Dia	2.5 square mm	To be checked physically by BOO	The Conductor Dia must be as per requirement mentioned in the QRs.
2.2	Armour	Insulated bare copper, GI Wire armouring inner and outer PVC Sheathed IS 1554 standard part-I or latest.	To be checked physically by BOO	Armour must be Insulated bare copper, GI Wire armouring inner and outer PVC Sheathed IS 1554 standard part-I or latest
2.3	No. of Cores	3	To be checked physically by BOO	Cores must be 3.
2.4	Voltage Level	1.1KV	Firm has to submit the OEM certificate.	Voltage level must be as per requirement mentioned in the QRs.

### 3. SFP Module 10G for OLT and Core Switch

3.1	SFP MSA package with duplex LC connector.	To be physically checked by the BOO.	The SFP MSA package with duplex LC connector must be as per the requirement mentioned in the QRs.
3.2	Very low EMI and excellent ESD protection.	To be physically checked by the BOO.	The specifications must be as per the requirement mentioned in the QRs.
3.3	Digital Diagnostic Monitor Interface.	To be physically checked by the BOO.	System must have Digital Diagnostic Monitor Interface.
3.4	Hot pluggable.	To be physically checked by the BOO.	System must be Hot pluggable.
3.5	10Gb/s serial optical interface.	To be physically checked by the BOO.	System must have 10GB/s serial optical interface.
3.6	Up to 10km distance.	To be physically checked by the BOO.	System must be upto 10km distance.
3.7	Compliant with SFP+ MSA.	To be physically checked by the BOO.	System must be compliant with SFP+ MSA.
3.8	High transmission margin.	To be physically checked by the BOO.	System must have High transmission margin.
3.9	+3.3V single power supply.	To be physically checked by the BOO.	System must have +3.3V single power supply
3.10	Below <1.5W power consumption	To be physically checked by the BOO.	System must have Below <1.5W power consumption.
3.11	SFP mechanical	To be physically checked by the BOO.	System must have SFP mechanical interface.



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
	interface.			
3.12	10G BASE-BX at 10.3125 Gb/s.	To be physically checked by the BOO.		System must have 10GBASE-BX at 10.3125 Gb/s.
3.13	10GBASE-BX at 9.953 Gb/s.	To be physically checked by the BOO.		System must have 10GBASE-BX at 9.953 Gb/s.
<b>4.. 2:4 Optical Power Splitters</b>				
4.1	Operating wavelength	PLC: 1260~1650	Specification to be verified by the BOO through specification sheet	Operating wavelength must be as per the requirement mentioned in the QRs.
<b>4.2</b>	Maximum Insertion Loss	<b>≤7 dB</b>	Specification to be verified by the BOO through specification sheet	Maximum insertion loss must be as per the requirement mentioned in the QRs.
4.3	Uniformity	<1 dB	Specification to be verified by the BOO through specification sheet	Uniformity must be as per the requirement mentioned in the QRs.
4.4	Maximum Polarization Dependent Loss (PDL)	0.2 dB (Maximum)	Specification to be verified by the BOO through specification sheet	Maximum PDL must be as per the requirement mentioned in the QRs.
4.5	Directivity	>55 dB	Specification to be verified by the BOO through specification sheet	Directivity must be as per the requirement mentioned in the QRs.
4.6	Return Loss	>55 dB	Specification to be verified by the BOO through specification sheet	Return loss must be as per the requirement mentioned in the QRs.
4.7	Operating Temperature	-40~+85°C	Specification to be verified by the BOO through specification sheet	Operating temperature must be as per the requirement mentioned in the QRs.
4.8	Storage Temperature	-40~+85°C	Specification to be verified by the BOO through specification sheet	Storage temperature must be as per the requirement mentioned in the QRs.
4.9	Operating relative humidity	5~95%UR	Specification to be verified by the BOO through specification sheet	Operative relative humidity must be as per the requirement mentioned in the QRs.
4.10	Storage relative humidity	5~95%UR	Specification to be verified by the BOO through specification sheet	Storage relative humidity must be as per the requirement mentioned in the QRs.
<b>Dimensional features for splitter with connector</b>				
4.11	Length (P)	55 +/- 5mm	Specification to be verified by the BOO through specification sheet	Length (P) must be as per the requirement mentioned in the QRs.
4.12	High (A)	4mm (maximum)	Specification to be verified by the BOO through specification sheet	High (A) must be as per the requirement

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
			sheet	mentioned in the QRs.
4.13	Input Pigtail Length	1m (maximum)	Specification to be verified by the BOO through specification sheet	Input Pigtail Length must be as per the requirement mentioned in the QRs.
4.14	Output Pigtail Length	1m (maximum)	Specification to be verified by the BOO through specification sheet	Output Pigtail Length must be as per the requirement mentioned in the QRs.
4.15	Pigtail Diameter	900µm	Specification to be verified by the BOO through specification sheet	Pigtail Diameter must be as per the requirement mentioned in the QRs.
4.16	PLC splitter should have housed in CRCA powder coated rugged metallic enclosure	Yes	Specification to be verified by the BOO through specification sheet	PLC splitter must be housed in CRCA powder coated rugged metallic enclosure
4.17	PLC splitter should be able to work under harsh weather condition	Yes	Specification to be verified by the BOO through specification sheet	PLC splitter must be able to work under harsh weather condition

#### 5.. 2:8 Optical Power Splitter

5.1	Operating wavelength	PLC: 1260~1650 nm	Specification to be verified by the BOO through specification sheet	Operating wavelength must be as per the specifications mentioned in the QRs.
5.2	Maximum Insertion Loss	11.0 dB	Specification to be verified by the BOO through specification sheet	Maximum Insertion loss must be as per the specifications mentioned in the QRs.
5.3	Uniformity	<1.60 dB	Specification to be verified by the BOO through specification sheet	Uniformity must be as per the specifications mentioned in the QRs.
5.4	Maximum Polarization Dependent Loss (PDL)	0.25 dB (maximum)	Specification to be verified by the BOO through specification sheet	Maximum PDL must be as per the specifications mentioned in the QRs.
5.5	Directivity	>55 dB	Specification to be verified by the BOO through specification sheet	Directivity must be as per the specifications mentioned in the QRs.
5.6	Return Loss	>55 dB	Specification to be verified by the BOO through specification sheet	Return Loss must be as per the specifications mentioned in the QRs.
5.7	Operating Temperature	-40~+85°C	Specification to be verified by the BOO through specification sheet	Operating temperature must be as per the specifications mentioned in the QRs.

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
5.8	Storage Temperature	-40~+85°C	Specification to be verified by the BOO through specification sheet	Storage temperature must be as per the specifications mentioned in the QRs.
5.9	Operating relative humidity	5~95%UR	Specification to be verified by the BOO through specification sheet	Operating relative humidity must be as per the specifications mentioned in the QRs.
5.10	Storage relative humidity	5~95%UR	Specification to be verified by the BOO through specification sheet	Storage relative humidity must be as per the specifications mentioned in the QRs.
5.11	Operating wavelength	FBT: 1260~1650 nm	Specification to be verified by the BOO through specification sheet	Operating wavelength must be as per the specifications mentioned in the QRs.
5.12	Storage relative humidity	5~95%UR	Specification to be verified by the BOO through specification sheet	Storage relative humidity must be as per the specifications mentioned in the QRs.

**Dimensional features for splitter with connector**

5.13	Length (P)	55 +/- 5mm	Specification to be verified by the BOO through specification sheet	Length (P) must be as per the specifications mentioned in the QRs.
5.14	Width (L)	7mm (maximum)	Specification to be verified by the BOO through specification sheet	Width (A) must be as per the specifications mentioned in the QRs.
5.15	Height (A)	4mm (maximum)	Specification to be verified by the BOO through specification sheet	Height (A) must be as per the specifications mentioned in the QRs.
5.16	Input Pigtail Length	1m (maximum)	Specification to be verified by the BOO through specification sheet	Input Pigtail Length must be as per the specifications mentioned in the QRs.
5.17	Output Pigtail Length	1m (maximum)	Specification to be verified by the BOO through specification sheet	Output Pigtail Length must be as per the specifications mentioned in the QRs.
5.18	Pigtail Diameter	900µm	Specification to be verified by the BOO through specification sheet	Pigtail diameter must be as per the specifications mentioned in the QRs.
5.19	PLC splitter should have housed in CRCA powder coated rugged metallic enclosure	Yes	Specification to be verified by the BOO through specification sheet	PLC splitter must have housed in CRCA powder coated rugged metallic enclosure
5.20	PLC splitter should be	Yes	Specification to be verified by the BOO through specification	PLC splitter must be able to work under harsh



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
	able to work under harsh weather condition		sheet	weather condition

## 6. . 12 Core Single Mode Optical Fiber Cable

### (A) Optical Fibre Sensor Cable:

6.1	Loose Tube jelly filled Multi tube design	Loose Tube jelly filled <b>Uni-tube</b> design	Specification to be verified by the BOO through specification sheet	Loose Tube jelly must be as per the requirement mentioned in the QRs.
6.2	Single Mode	(ITU-T Rec. G652D) Fibre	Firm has submitted the OEM certificate	Single mode must be as per the requirement mentioned in the QRs.
6.3	Attenuation	At 1310nm $\leq$ 0.38 dB/Km	Firm has submitted the OEM certificate	Attenuation must be as per the requirement mentioned in the QRs.
6.4	Attenuation	At 1550 nm $\leq$ 0.25 dB/Km	Firm has submitted the OEM certificate	Attenuation must be as per the requirement mentioned in the QRs.
6.5	Core Diameter	9/125/250 $\mu$ m	Firm has submitted the OEM certificate	Core Diameter must be as per the requirement mentioned in the QRs.
6.6	Clad Diameter	125 $\pm$ 1.0 $\mu$ m	Firm has submitted the OEM certificate	Clad diameter must be as per the requirement mentioned in the QRs.
6.7	Clad non circularity	$\leq$ 1.0%	Firm has submitted the OEM certificate	Clad non circularity must be as per the requirement mentioned in the QRs.
6.8	Coating Diameter	245 $\pm$ 10 $\mu$ m	Firm has submitted the OEM certificate	Coating Diameter must be as per the requirement mentioned in the QRs.
6.9	Chromatic Dispersion	At 1550 nm $\leq$ 18.0 ps/nm.km	Firm has submitted the OEM certificate	Chromatic Dispersion must be as per the requirement mentioned in the QRs.
6.10	Zero Dispersion wave length	1300 ~1324 nm	Firm has submitted the OEM certificate	Zero Dispersion wave length must be as per the requirement mentioned in the QRs.
6.11	Zero Dispersion slop	$\leq$ 0.092 ps/nm <sup>2</sup> .km	Firm has submitted the OEM certificate	Zero Dispersion slop must be as per the requirement mentioned in the QRs.
6.12	Cut-off Wavelength	i) Fiber cut off wavelength: $\leq$ 1320nm. ii) Cable cut off wavelength: $\leq$ 1260nm.	Specification to be verified by the BOO through specification sheet	Cut-off wavelength must be as per the requirement mentioned in the QRs.
6.13	Polarization Mode Diameter	$\leq$ 0.2 ps/root km	Firm has submitted the OEM certificate	Polarization Mode Diameter must be as per the requirement

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
				mentioned in the QRs.
6.14	Mode Field Diameter	At 1310 nm $9.2 \pm 0.4 \mu m$	Firm has submitted the OEM certificate	Mode Field Diameter must be as per the requirement mentioned in the QRs.
6.15	Fibre Identification	Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Pink & Natural.	Specification to be verified by the BOO through specification sheet	Fibre Identification must be as per the requirement mentioned in the QRs.
6.16	No. of fibres	12 F	Firm has submitted the OEM certificate	Fibres must be 12 F as per the requirement mentioned in the QRs.
6.17	Moisture Barrier	Single layer of water <b>swellable</b> tape / Polyester Tape applied longitudinally	Firm has submitted the OEM certificate	Moisture Barrier must be as per the requirement mentioned in the QRs.

**(B) Strength:**

6.18	Type (Outer Jacket)	2# Steel wire /FRP RODs	Firm has submitted the OEM certificate	Type (Outer Jacket) must be as per the requirement mentioned in the QRs.
6.19	Type (Peripheral)	Aramid Yarn/Glass Yarn	Firm has submitted the OEM certificate	Type (Peripheral) must be as per the requirement mentioned in the QRs.

**(C) Mechanical and Environmental:**

6.20	Max Tensile Strength	3500 Newton	Firm has submitted the OEM certificate	Max Tensile Strength must be as per the requirement mentioned in the QRs.
6.21	Crush Resistance	Newton 4000/10 cm	Firm has submitted the OEM certificate	Crush Resistance must be as per the requirement mentioned in the QRs.
6.22	Minimum Bending radius	20 x Diameter	Firm has submitted the OEM certificate	Minimum Bending radius must be as per the requirement mentioned in the QRs.
6.23	Operating Temperature	-30°C to +70°C	Firm has submitted the OEM certificate	Operating Temperature must be as per the requirement mentioned in the QRs.

**7. 24 Port Fiber LIU Fully Loaded With Single\_Mode Sc Adopter, Adaptor Plate and Pigtail**

7.1	24 Ports Adapter with 4 adapter plates of 6 fibre each	To be checked physically by BOO	24 Ports adaptor must be as per the requirement mentioned in the QRs.
7.2	Consist of Top Cover and Bottom Panel	To be checked physically by BOO	Top Cover and Bottom Panel must be as per the requirement mentioned in the QRs.
7.3	Easy to Assemble and Dissemble	To be checked physically by BOO	Assemble and Dissemble must be as per the



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
				requirement mentioned in the QRs.
7.4	Four cable entry ports		To be checked physically by BOO	Entry ports must be as per the requirement mentioned in the QRs.
7.5	Cable Entry Through Water Proof Cable Clamp		To be checked physically by BOO	Cable entry must be as per the requirement mentioned in the QRs.
7.6	Splice Max 12 Fibres at Most with 1 Tray		To be checked physically by BOO	Splice max must be as per the requirement mentioned in the QRs.
7.7	Patch Cord with Bend Radius Guides Minimize Macro Bending		To be checked physically by BOO	Patch cord must be as per the requirement mentioned in the QRs.
7.8	Install 2 Cable Management Rings/Cable Routing guide Inside to Ensure Flexibility		To be checked physically by BOO	Install 2 cable management must be as per the requirement mentioned in the QRs.
7.9	Comprehensive Accessory Kits for Cable Entry and Fibre Management		To be checked physically by BOO	Comprehensive Accessory kits must be as per the requirement mentioned in the QRs.
7.10	Body Material : Powder Coated CRCA		To be checked physically by BOO	Body material must be power coated CRCA.
7.11	<b>Miscellaneous ADAPTOR (SC)</b> SC/ adaptors should be Simplex type. Telcordia GR-326-Core. RoHS Compliance Low Insertion Adapters should have compact design & high precision Telcordia, TIA/EIA, IEC compliance $\leq 0.20$ db for Zirconia Sleeve Durability (1000 Matings): $\leq 0.2$ db Main Body Material: Glass filled PBT SC		To be checked physically by BOO	As per the requirement mentioned in the QRs.

#### 8. . SC-LC Fiber Duplex Patch Cord

8.1	Range of Mode	Single Mode	Specification to be verified by the BOO through specification sheet	Range of mode must be as per the requirement mentioned in the QRs.
8.2	Cable Type	Duplex	Specification to be verified by the BOO through specification sheet	Cable type must be as per the requirement mentioned in the QRs.
8.3	Zip cord Connector Style	SC-LC	To be checked physically by BOO	Zip cord connector steeple must be as per the requirement mentioned in the QRs.

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
8.4	Interface Type	PC, UPC, APC Cable	Specification to be verified by the BOO through specification sheet	Interface type must be as per the requirement mentioned in the QRs.
8.5	Diameter	0.9mm, 2.0mm, 3.0mm	To be checked physically by BOO	Diameter must be as per the requirement mentioned in the QRs.
8.6	Lengths	Standard & Custom Lengths	Specification to be verified by the BOO through specification sheet	Lengths must be as per the requirement mentioned in the QRs.
8.7	Member	Aramid Yarn	Specification to be verified by the BOO through specification sheet	Member must be as per the requirement mentioned in the QRs.
8.8	Outer Jacket	PVC or LSZH	Specification to be verified by the BOO through specification sheet	Outer Jacket must be as per the requirement mentioned in the QRs.
8.9	Cable Assembly Length	15 meter Tolerance (+/- 10%)	Specification to be verified by the BOO through specification sheet	Cable Assembly length must be as per the requirement mentioned in the QRs.
8.10	<b>Durability</b>	500 cycles(0.2 dB max increase),	Specification to be verified by the BOO through specification sheet	Durability must be as per the requirement mentioned in the QRs
8.11	Operating Temp	-20 °C to +70°C	Specification to be verified by the BOO through specification sheet	Operating temp must be as per the requirement mentioned in the QRs.
8.12	Storage Temp	-20 °C to +75°C	Specification to be verified by the BOO through specification sheet	Storage temp must be as per the requirement mentioned in the QRs.
8.13	Ferrule Concentricity	< 1µm	Specification to be verified by the BOO through specification sheet	Ferrule concentricity must be as per the requirement mentioned in the QRs.

#### 9.. LC-LC Fiber Duplex Patch Cord

Single mode fibre optic patch cables send one light signal at a time and can be used for longer runs than multimode because they have more resistance to attenuation. The core of the single mode fibre optic cable is 9/125µ (micron). Single mode LC-LC fibre optic patch cables can support gigabit Ethernet applications for up to 10 kilometres

9.1	Length	3m (maximum)	To be checked physically by BOO	Length must be as per the requirement mentioned in the QRs.
9.2	Connectors	LC-LC	To be checked physically by BOO	Connectors must be as per the requirement mentioned in the QRs.
9.3	Maximum connector loss	0.30dB	Specification to be verified by the BOO through specification sheet	Maximum connector loss must be as per the requirement mentioned in the QRs.
9.4	Typical connector loss	0.30dB (maximum)	Specification to be verified by the BOO through specification sheet	Typical connector loss must be as per the requirement mentioned in the QRs.

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
				the QRs.
9.5	Typical return loss	-50 dB (maximum)	Specification to be verified by the BOO through specification sheet	Typical return loss must be as per the requirement mentioned in the QRs.
9.6	Buffer material	PVC	Specification to be verified by the BOO through specification sheet	Buffer material must be as per the requirement mentioned in the QRs.
9.7	Buffer OD	900 $\mu\text{m}$ (+/- 50 $\mu\text{m}$ )	Specification to be verified by the BOO through specification sheet	Buffer OD must be as per the requirement mentioned in the QRs.
9.8	Jacket material	LSZH	Specification to be verified by the BOO through specification sheet	Jacket material must be as per the requirement mentioned in the QRs.
9.9	Operating temperature	-20°C to +70°C	Specification to be verified by the BOO through specification sheet	Operating temperature must be as per the requirement mentioned in the QRs.

#### 10.. SC-SC Fiber Duplex Patch Cord

10.1	Cable Diameter	3.0mm duplex	To be checked physically by BOO	Cable Diameter must be as per the specifications mentioned in the QRs.
10.2	Cable Type	Single Mode	To be checked physically by BOO	Cable type must be as per the specification mentioned in the QRs.
10.3	Reflection	Low back reflection and insertion loss	Specification to be verified by the BOO through specification sheet	Reflection must be as per the specification mentioned in the QRs.
10.4	Quality	Premium quality UPC ceramic ferrule for best performance	Specification to be verified by the BOO through specification sheet	Quality must be as per the specification mentioned in the QRs.
10.5	Cable Material	PVC	Specification to be verified by the BOO through specification sheet	Cable material must be as per the specification mentioned in the QRs.
10.6	Fiber Type	Single mode 9/125	Specification to be verified by the BOO through specification sheet	Fiber type must be as per the specification mentioned in the QRs.
10.7	Insertion Loss (Typical)	0.15 dB	Specification to be verified by the BOO through specification sheet	Insertion Loss (typical) must be as per the specification mentioned in the QRs.
10.8	Insertion Loss (Maximum)	0.30 dB	Specification to be verified by the BOO through specification sheet	Insertion loss (max) must be as per the specification mentioned in the QRs.
10.9	Return Loss	$\leq -50$ dB (UPC)	Specification to be verified by the BOO through specification sheet	Return loss must be as per the specification mentioned in the QRs.
10.10	Operational Temperature	-20°C to +70°C	Specification to be verified by the BOO through specification sheet	Operational temperature must be as per the specification mentioned in the QRs.



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
10.11	Tested	100% Fully Tested	Firm has submitted the OEM certificate	Cord must be 10% fully tested.
10.12	Length-	1 mtr (maximum)	To be checked physically by BOO	Length must be as per the specification mentioned in the QRs.
10.13	Connectors	SC-SC	To be checked physically by BOO	Connectors must be as per the specification mentioned in the QRs.

#### 11. . CAT-6 Patch Cord – 3 MTR

11.1	Type	Unshielded Twisted Pair, Category 6,TIA/ EIA 568-C.2	To be checked physically by BOO	Type of cord must be as per the specification mentioned in the QRs.
11.2	Conductor	24-26 AWG stranded copper.	Firm has submitted the OEM certificate	Conductor must be as per the specification mentioned in the QRs.
11.3	Length	3 meter (Maximum)	To be checked physically by BOO	Length must be as per the specification mentioned in the QRs.
11.4	Plug Protection	Matching colored snag-less, boot to maintain bend radius	Specification to be verified by the BOO through specification sheet	Plug protection must be as per the specification mentioned in the QRs.
11.5	Warranty	5-years component warranty, and 5-years performance warranty	Firm has submitted the OEM certificate	Warranty must be as per the specification mentioned in the QRs.
11.6	Category	Category 6 Plug	To be checked physically by BOO	Category must be as per the specification mentioned in the QRs.
11.7	Housing	<b>Clear polycarbonate</b>	To be checked physically by BOO	Housing must be as per the specification mentioned in the QRs.
11.8	Terminals	Phosphor Bronze with gold plating , 50 micron" gold over nickel	To be checked physically by BOO	Terminals must be as per the specification mentioned in the QRs.

#### 12. . Layer 2 switch 24 Port Managed Switch with 4x10 G

12.1	Performance Features	<b>The switch should support Following switching capacity/Forwarding rate 24 GE RJ45 port with 4 nos. of 10G SFP+ uplinks 56 GBPs/83 Mbps or better</b>	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO	The switch must support switch capacity/ Forwarding rate as per the requirement mentioned in the QRs.
		<b>Switch should</b>	Firm has submitted the OEM	Switch must have 2 GB

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		<b>have 2 GB RAM and 4 GB Flash or better</b>	certificate	RAM and 4 GB Flash.
		Shall have minimum 16K MAC Addresses and 1024 active VLANs.	The functionality needs to be verified by the board of officers through Data Sheet.	Shall must have minimum 16K MAC Addresses and 1024 active VLANs.
		Switch should have slot/ports(excluding uplinks) for minimum 80 Gbps of stacking bandwidth with dedicated stacking ports and cables with minimum 8 switch in stack	The functionality needs to be verified by the board of officers through Data Sheet.	Switch must have slot/ports(excluding uplinks) for minimum 80 Gbps of stacking bandwidth with dedicated stacking ports and cables with minimum 8 switch in stack
		Switch should be able to support 3000 IPV4 & 1500 IPV6 routing entries.	The functionality needs to be verified by the board of officers through Data Sheet.	Switch must be able to support 3000 IPV4 & 1500 IPV6 routing entries.
		<b>Switch should support minimum 512 Switched Virtual interfaces/ routed VLAN interfaces.</b>	The functionality needs to be verified by the board of officers through Data Sheet.	Switch must support minimum 512 Switched Virtual Interfaces.
		The switch should support Jumbo frames of 9198 bytes	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support Jumbo frames of 9198 bytes
12.2	General Features	Proposed switch should be enterprise grade switch with x86 based CPU architecture	The functionality needs to be verified by the board of officers through Data Sheet.	Proposed switch must be enterprise grade switch with x86 based CPU architecture
		Layer 2, Routed Access (RIP, EIGRP Stub, OSPF - 1000 routes), PBR, PIM Stub Multicast (1000 routes), PVLAN, VRRP, PBR, CDP, QoS, FHS, 802.1X, MACsec-128,	The functionality needs to be verified by the board of officers through Data Sheet.	System must have Layer 2, Routed Access (RIP, EIGRP Stub, OSPF - 1000 routes), PBR, PIM Stub Multicast (1000 routes), PVLAN, VRRP, PBR, CDP, QoS, FHS, 802.1X, MACsec-128, CoPP, SXP, IP SLA Responder

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		CoPP, SXP, IP SLA Responder		
		The proposed switch should be software defined networking capable and be able to at least integrate easily with the industry standard SDN controllers.	The functionality needs to be verified by the board of officers through Data Sheet.	The proposed switch must be software defined networking capable and be able to at least integrate easily with the SDN controller from the same OEM.
		The Switch stack should be based on Distributed forwarding Architecture, where in each stack member forwards its own information on network.	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch stack must be based on Distributed forwarding Architecture, where in each stack member forwards its own information on network.
		Switch should have unique secure identity so that its authenticity and origin can be confirmed with OEM. Switch BIOS, software image should be cryptographically signed to ensure integrity and switch should not boot with modified software regardless of user's privilege level.	The functionality needs to be verified by the board of officers through Data Sheet.	Switch must have unique secure identity so that its authenticity and origin can be confirmed with OEM. Switch BIOS, software image should be cryptographically signed to ensure integrity and switch should not boot with modified software regardless of user's privilege level.
		Switch shall support application visibility and traffic monitoring with minimum 16 K net Flow/sflow/jflow entries.	The functionality needs to be verified by the board of officers through Data Sheet.	Switch must support application visibility and traffic monitoring with minimum 16 K netFlow/sflow/jflow entries.
		Switches should support both front and back beacon	The functionality needs to be verified by the board of officers through Data Sheet.	Switches must support both front and back beacon LEDs for easy



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		LEDs for easy identification of the switch being accessed.		identification of the switch being accessed.
		Switches should have hardware support to connect a Bluetooth dongle to your switch, enabling you to use this wireless interface as an IP management port interface.	The functionality needs to be verified by the board of officers through Data Sheet.	Switches must have hardware support to connect a Bluetooth dongle to your switch, enabling you to use this wireless interface as an IP management port interface.
12.3	High availability & Resiliency	Switch should support redundant field replicable platinum rated power supplies.	The functionality needs to be verified by the board of officers through Data Sheet.	Switch must support redundant field replicable platinum rated power supplies.
		Switch should support redundant fans.	The functionality needs to be verified by the board of officers through Data Sheet.	Switch must support redundant fans.
		Switch should support cross-stack ether channel.	The functionality needs to be verified by the board of officers through Data Sheet.	Switch must support cross-stack ether channel.
		Switch should support embedded event manager scripts/GUI dashboard for easy monitoring	The functionality needs to be verified by the board of officers through Data Sheet.	Switch must support embedded event manager scripts
		After a reboot when power is restored to a switch, switch should start delivering power to endpoints without waiting for the operating system to fully load.	The functionality needs to be verified by the board of officers through Data Sheet.	Switch must start delivering power to endpoints without waiting for the operating system to fully load.
12.4	L2 Features	The switch should support Automatic Negotiation of Trunking Protocol, to help minimize the configuration & errors	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support Automatic Negotiation of Trunking Protocol, to help minimize the configuration & errors

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		The switch should support IEEE 802.1Q VLAN encapsulation	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support IEEE 802.1Q VLAN encapsulation
		The switch should support Spanning-tree Port Fast and Port Fast guard for fast convergence	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support Spanning-tree Port Fast and Port Fast guard for fast convergence
		The switch should support Uplink Fast & Backbone Fast technologies to help ensure quick failover recovery, enhancing overall network stability and reliability	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support Uplink Fast & Backbone Fast technologies to help ensure quick failover recovery, enhancing overall network stability and reliability
		The switch should support Spanning-tree root guard to prevent other edge switches becoming the root bridge.	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support Spanning-tree root guard to prevent other edge switches becoming the root bridge.
		The switch should support Voice VLAN to simplify IP telephony installations by keeping voice traffic on a separate VLAN	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support Voice VLAN to simplify IP telephony installations by keeping voice traffic on a separate VLAN
		The switch should support Auto-negotiation on all ports to automatically selects half- or full-duplex transmission mode to optimize bandwidth	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support Auto-negotiation on all ports to automatically selects half- or full-duplex transmission mode to optimize bandwidth
		The switch should support Automatic media-dependent interface crossover (MDIX) to automatically adjusts transmit	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support Automatic media-dependent interface crossover (MDIX) to automatically adjusts transmit and receive pairs if an incorrect cable type



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		and receive pairs if an incorrect cable type (crossover or straight through) is installed.		(crossover or straight through) is installed.
		The switch should support Unidirectional Link Detection Protocol (UDLD) and Aggressive UDLD to allow for unidirectional links caused by incorrect fibre-optic wiring or port faults to be detected and disabled on fibre-optic interfaces.	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support Unidirectional Link Detection Protocol (UDLD) and Aggressive UDLD to allow for unidirectional links caused by incorrect fibre-optic wiring or port faults to be detected and disabled on fibre-optic interfaces
		The switch should support IGMP v1, v2 Snooping	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support IGMP v1, v2 Snooping.
		Switch should support IPv4 and IPv6The Switch should be able to discover (on both IPv4 & IPv6 Network) the neighbouring device giving the details about the platform, IP Address, Link connected through etc, thus helping in troubleshooting connectivity problems.	The functionality needs to be verified by the board of officers through Data Sheet.	Switch must support IPv4 and IPv6The Switch should be able to discover (on both IPv4 & IPv6 Network) the neighbouring device giving the details about the platform, IP Address, Link connected through etc, thus helping in troubleshooting connectivity problems.
12.5	Network security features	The switch should support IEEE 802.1x providing user authentication, authorization and Co A.	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support IEEE 802.1x providing user authentication, authorization and CoA.
		The switch should support SSHv2 and SNMPv3 to provide network	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support SSHv2 and SNMPv3 to provide network security by encrypting

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		security by encrypting administrator traffic during Telnet and SNMP sessions.		administrator traffic during Telnet and SNMP sessions.
		The switch should support TACACS+ and RADIUS authentication enable centralized control of the switch and restrict unauthorized users from altering the configuration.	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support TACACS+ and RADIUS authentication enable centralized control of the switch and restrict unauthorized users from altering the configuration.
		The switch should support MAC address notification to allow administrators to be notified of users added to or removed from the network.	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support MAC address notification to allow administrators to be notified of users added to or removed from the network.
		The switch should support MACSec-128	The functionality needs to be verified by the board of officers through Data Sheet.	The switch must support MACSec-128
12.6	Quality of Service	Switch should support 802.1p Class of Service (CoS) and Differentiated Services Code Point (DSCP) field classification, Shaped Round Robin (SRR) scheduling, Committed Information Rate (CIR), and eight egress queues per port.	The functionality needs to be verified by the board of officers through Data Sheet.	Switch must support 802.1p Class of Service (CoS) and Differentiated Services Code Point (DSCP) field classification, Shaped Round Robin (SRR) scheduling, Committed Information Rate (CIR), and eight egress queues per port.
12.7	Layer-3 Features should be supported post a license upgrade from	The Switch should support routing protocols such OSPF, BSR, IS-IS, LISP, VXLAN, VRF.	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support routing protocols such OSPF, BSR, IS-IS, LISP, VXLAN, VRF.

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
	L2 to L3			
		The Switch should support IPv6 Routing capable protocols such as OSPFv3 in hardware.	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support IPv6 Routing capable protocols such as OSPFv3 in hardware.
		The Switch should support IP Multicast and PIM, PIM Sparse Mode, & Source-Specific Multicast for Wired and Wireless Clients.	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support IP Multicast and PIM, PIM Sparse Mode, & Source-Specific Multicast for Wired and Wireless Clients.
		The Switch should support basic IP Unicast routing protocols (static, RIPv1 & RIPv2).	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support basic IP Unicast routing protocols (static, RIPv1 & RIPv2).
		The Switch should support IPv6 & IPv4 Policy Based Routing (PBR).	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support IPv6 & IPv4 Policy Based Routing (PBR).
		The Switch should support Inter-VLAN routing.	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support Inter-VLAN routing.
		The Switch should support HSRP for IPv4 & IPv6.	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support HSRP for IPv4 & IPv6.
		The Switch should support VRRPv3.	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support VRRPv3.
		The Switch should support uRPF for IPv4 and IPv6.	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support uRPF for IPv4 and IPv6.
12.8	Native support of following L3 features from day - 1	The Switch should support routing protocols such as OSPF, BSR, IS-ISv4, LISP, VXLAN, VRF.	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support routing protocols such as OSPF, BSR, IS-ISv4, LISP, VXLAN, VRF.
		The Switch should support IPv6 Routing capable protocols such as OSPFv3 in hardware.	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support IPv6 Routing capable protocols such as OSPFv3 in hardware.
		The Switch should support IP Multicast and PIM,	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support IP Multicast and PIM, PIM Sparse Mode, & Source-



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		PIM Sparse Mode, & Source-Specific Multicast for Wired and Wireless Clients.		Specific Multicast for Wired and Wireless Clients.
		The Switch should support basic IP Unicast routing protocols (static, RIPv1 & RIPv2).	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support basic IP Unicast routing protocols (static, RIPv1 & RIPv2).
		The Switch should support IPv6 & IPv4 Policy Based Routing (PBR)	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support IPv6 & IPv4 Policy Based Routing (PBR)
		The Switch should support Inter-VLAN routing.	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch should support Inter-VLAN routing.
		The Switch should support HSRP for IPv4 & IPv6.	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support HSRP for IPv4 & IPv6.
		The Switch should support VRRPv3.	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support VRRPv3.
		The Switch should support uRPF for IPv4 and IPv6.	The functionality needs to be verified by the board of officers through Data Sheet.	The Switch must support uRPF for IPv4 and IPv6.
12.9	Certifications	Safety certifications - IEC 60950-1,UL 60950-1,CAN/CSA C22.2 No. 60950-1,EN 60950-1,AS/NZS 60950.1,Class I Equipment.	The functionality needs to be verified by the board of officers through Data Sheet.	Switch must have Safety certifications - IEC 60950-1,UL 60950-1,CAN/CSA C22.2 No. 60950-1,EN 60950-1,AS/NZS 60950.1,Class I Equipment.
		Electromagnetic emissions certifications - 47 CFR Part 15,CISPR 22 Class A,CISPR 32 Class A,CNS 13438,EN 300 386*,EN 55022 Class A,EN 55032 Class A,EN61000-3-2,EN61000-3-3,ICES-003 Class A,KN 32,TCVN 7189 Class A,V-3 Class A,CISPR	The functionality needs to be verified by the board of officers through Data Sheet.	Switch must have Electromagnetic emissions certifications - 47 CFR Part 15,CISPR 22 Class A,CISPR 32 Class A,CNS 13438,EN 300 386*,EN 55022 Class A,EN 55032 Class A,EN61000-3-2,EN61000-3-3,ICES-003 Class A,KN 32,TCVN 7189 Class A,V-3 Class A,CISPR 24,EN 300 386*,EN 55024,KN 35,TCVN 7317.

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		24,EN 300 386*,EN 55024,KN 35,TCVN 7317		
		Environmental - Reduction of Hazardous Substances (ROHS) 5	The functionality needs to be verified by the board of officers through Data Sheet.	Switch must have Reduction of Hazardous Substances (ROHS) 5.
12.10	Operating Temperature Range	Normal operating temperature and altitudes:	The functionality needs to be verified by the board of officers through Data Sheet.	Temperature of the switch must be as per the requirement mentioned in the QRs.
		-5°C to +45°C, up to 5000 feet (1500m)	The functionality needs to be verified by the board of officers through Data Sheet.	
		-5°C to +40°C, up to 10,000 feet (3000m)	The functionality needs to be verified by the board of officers through Data Sheet.	
		Minimum ambient temperature for cold start is 32°F (0°C)	The functionality needs to be verified by the board of officers through Data Sheet.	
		-5°C to +50°C, up to 5000 feet (1500m)	The functionality needs to be verified by the board of officers through Data Sheet.	
		-5°C to +45°C, up to 10,000 feet (3000m)	The functionality needs to be verified by the board of officers through Data Sheet.	
		-5°C to +45°C, at sea level with single fan failure	The functionality needs to be verified by the board of officers through Data Sheet.	

### 13. . IP 66 Termination Box for ONU

13.1	IP 66 Cabinet with mounting arrangement	To be checked physically by BOO	Termination box must have IP 66 Cabinet with mounting arrangement.
13.2	CRCA Powder coated rugged metallic enclosure	To be checked physically by BOO	Termination box must have CRCA Powder coated rugged metallic enclosure.
13.3	Size to be customised as per the requirement	To be checked physically by BOO	Termination box must have size to be customised as per the requirement.
13.4	Compact design with air circulation space	To be checked physically by BOO	Termination box must have compact design with air circulation space.
13.5	Inner tray for splice sleeve	To be checked physically by BOO	Termination box must have inner tray for splice sleeve.
13.6	Available with 2 Pos SC Duplex number of adapters	To be checked physically by BOO	Termination box must have SC duplex as per the

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
				requirement mentioned in the QRs.
13.7	Normal splice type		To be checked physically by BOO	Termination box must have normal splice type.
13.8	DIN Rail mounting arrangement		To be checked physically by BOO	Termination box must have DIN rail mounting arrangement.
13.9	08 Nos Cable entry points with PVC gland		To be checked physically by BOO	Termination box must have 08 Nos cable entry points with PVC gland.
13.10	02 MCBs 10/16 AMP for AC mains power connectivity and control		To be checked physically by BOO	Termination box must have 02 MCBs 10/16 AMP for AC mains power connectivity and control.
13.11	Power extension point with 03 Nos 5 AMP power socket with switch and sufficient power cable		To be checked physically by BOO	Termination box must have power extension point with 03 Nos 5 AMP power socket with switch and sufficient power cable
13.12	Provision for earthing connection		To be checked physically by BOO	Termination box must have provision for earthing connection.
<b>14.Trial Directives 19 Inches 9U Network Rack</b>				
14.1	Rack enclosure 9U wall mount		To be checked physically by BOO	Rack enclosure must be as per the requirement mentioned in the QRs
14.2	EIA standard 19" Rack rails		To be checked physically by BOO	EIA standard must be as per the requirement mentioned in the QRs
14.3	Width : 600 MM (+/- 10 mm)		To be checked physically by BOO	Width must be as per the requirement mentioned in the QRs
14.4	Depth : 550 MM (+/- 10 mm)		To be checked physically by BOO	Depth must be as per the requirement mentioned in the QRs
14.5	Transparent toughened glass front door with lock		To be checked physically by BOO	Transparent toughened must be as per the requirement mentioned in the QRs
14.6	Fan tray with 2 fans for heat dissipation		To be checked physically by BOO	Fan Try must be as per the requirement mentioned in the QRs
14.7	One No. Horizontal power distribution unit with 5 Point AC 6 & 16 AMP socket and MCB		To be checked physically by BOO	Horizontal power distribution must be as per the requirement mentioned in the QRs
14.8	Mounting hardwares (20 NOS)		To be checked physically by BOO	Mounting hardware must be as per the requirement mentioned in the QRs
14.9	Horizontal Manager		To be checked physically by BOO	Horizontal Manager must



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
				be as per the requirement mentioned in the QRs
14.10	Support cable entry from top or bottom		To be checked physically by BOO	Support cable entry must be as per the requirement mentioned in the QRs
14.11	One Cantilever shelf		To be checked physically by BOO	Cantilever shelf must be as per the requirement mentioned in the QRs
<b>15. . 19 Inches 42U Network Rack</b>				
15.1	Rack enclosure 42U floor standing		To be checked physically by BOO	Rack enclosure must be as per the requirement mentioned in the QRs
15.2	EIA standard 19" rack rails		To be checked physically by BOO	EIA standard must be as per the requirement mentioned in the QRs.
15.3	Width : 800 MM (+/- 10mm)		To be checked physically by BOO	Width must be as per the requirement mentioned in the QRs.
15.4	Depth : 1000 MM (+/- 10mm)		To be checked physically by BOO	Depth must be as per the requirement mentioned in the QRs.
15.5	Transparent toughened glass front door with lock		To be checked physically by BOO	Transparent toughened glass must be as per the requirement mentioned in the QRs.
15.6	Side panels with key locks and slam latch		To be checked physically by BOO	Side panels must be as per the requirement mentioned in the QRs.
15.7	Rear door with lock		To be checked physically by BOO	Rear door must having lock.
15.8	Fan tray with 4 fans for heat dissipation		To be checked physically by BOO	Fan tray must be as per the requirement mentioned in the QRs.
15.9	Shelf for monitor display		To be checked physically by BOO	Rack must have shelf for monitor display.
15.10	Shelf with keyboard tray		To be checked physically by BOO	Rack must have shelf with keyboard tray.
15.11	Two Nos. vertical power distribution unit with 10 point AC 6 & 16 AMP socket and MCB		To be checked physically by BOO	Rack must have Two Nos. vertical power distribution unit with 10 point AC 6 & 16 AMP socket and MCB.
15.12	Earthing strip		To be checked physically by BOO	Rack must have earthing strip.
15.13	Mounting hardwares (50 NOS)		To be checked physically by BOO	Mounting hardware Two Nos. vertical power distribution unit with 10 point AC 6 & 16 AMP socket and MCB
15.14	Support cable for top or bottom		To be checked physically by BOO	Rack must have support cable for top or bottom.

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
15.15	Heavy duty castor wheels & break		To be checked physically by BOO	Rack must have heavy duty castor wheels & break.
15.16	Vertical Manager		To be checked physically by BOO	
<b>16. . SFP Module 1G Single Mode LC</b>				
16.1	IEEE Standard	1000 Base LX	Firm has submitted the OEM certificate	IEEE standard must be as per the specification mentioned in the QRs.
16.2	Signalling rate, each lane (range)	1.25 Gbps +/- 100 ppm	The functionality needs to be verified by the BOO through Data Sheet.	Signalling rate must be as per the specification mentioned in the QRs.
16.3	Connector Type	Lucent connector (LC)/ physical connector (PC)	The functionality needs to be verified by the BOO through Data Sheet.	Connector type must be as per the specification mentioned in the QRs.
16.4	Fiber pairs	1	The functionality needs to be verified by the BOO through Data Sheet.	Fiber pairs must be as per the specification mentioned in the QRs.
16.5	Wavelength range	1270 nm to 1355 nm	The functionality needs to be verified by the BOO through Data Sheet.	Wavelength range must be as per the specification mentioned in the QRs.
16.6	Average transmit launch power (minimum)	-9.5 dBm	The functionality needs to be verified by the BOO through Data Sheet.	Average transmit launch power (min) must be as per the specification mentioned in the QRs.
16.7	Average transmit launch power (maximum)	-3 dBm	The functionality needs to be verified by the BOO through Data Sheet.	Average transmit launch power (max) must be as per the specification mentioned in the QRs.
16.8	Average receive power (maximum)	-3 dBm	The functionality needs to be verified by the BOO through Data Sheet.	Average receive power (max) must be as per the specification mentioned in the QRs.
16.9	Receive Sensitivity	-19 dBm (maximum)	The functionality needs to be verified by the BOO through Data Sheet.	Receive Sensitivity must be as per the specification mentioned in the QRs.
16.10	Diagnostic support	Supported	The functionality needs to be verified by the BOO through Data Sheet.	Diagnostic support must be as per the specification mentioned in the QRs.
<b>17. . Network Video Recorder (32) Port</b>				
17.1	Channels	32 Nos Full HD/16 Nos 4K Resolution or better	To be physically checked by the BOO.	Channels must be as per the requirement mentioned in the QRs.
17.2	Camera Type	Should Support 4K Box Camera and Full HD PTZ Cameras	The FAT report needs to be submitted & the functionality needs to be verified by the BOO.	Type of camera must be as per the requirement mentioned in the QRs.
17.3	Recording Resolution and Frame Rate	Full HD & 4K (3840x2160) @ 25 FPS or higher	The FAT report needs to be submitted & the functionality needs to be verified by the BOO.	Recording Resolution and frame rate must be as per the requirement mentioned in the QRs.



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
17.4	Supported Image Resolution	HD resolution and 4K UHD Resolution	Specification to be verified by the BOO through specification sheet.	Supported image resolution must be as per the requirement mentioned in the QRs.
17.5	Operating System	<b>Embedded Linux/Windows based system</b>	Firm has submitted the OEM certificate.	Operating system must be as per the requirement mentioned in the QRs.
17.6	Video Compression	H.264,H.265 or better supporting the system	Firm has submitted the OEM certificate.	Video compression must be as per the requirement mentioned in the QRs.
17.7	Recording Bandwidth	Minimum 32 Channel full HD @320 Mbps or 16 Nos 4K resolution	The FAT report needs to be submitted & the functionality needs to be verified by the BOO.	Recording bandwidth must be as per the requirement mentioned in the QRs.
17.8	Video Playback	16 Channels Full HD synchronous play back	Specification to be verified by the BOO through specification sheet.	Video playback must be as per the requirement mentioned in the QRs.
17.9	Storage	Minimum 70 TB Usable after RAID 5/6 configuration ( Combination of Internal and external )	The FAT report needs to be submitted & the functionality needs to be verified by the BOO.	Storage must be as per the requirement mentioned in the QRs.
17.10	Drive Type	SATA Surveillance HDD or better	Specification to be verified by the BOO through specification sheet.	Drive type must be as per the requirement mentioned in the QRs.
17.11	<b>Video In Connections</b>	<b>2x 1G Ethernet and 2x 10G Ethernet/ SFP+ connectivity</b>	The FAT report needs to be submitted & the functionality needs to be verified by the BOO.	Video in connections must be as per the requirement mentioned in the QRs.
17.12	Discovery Interface	OEM interface to detect the camera automatically and configure network settings	The FAT report needs to be submitted & the functionality needs to be verified by the BOO.	Discovery interface must be as per the requirement mentioned in the QRs.
17.13	Video Output/ Interface	HDMI/ VGA/ USB	To be checked physically by the BOO.	Video output/interface must be as per the requirement mentioned in the QRs.
17.14	<b>Network Interface</b>	<b>1-Port of Ethernet 10/100/1000 Base T ports</b>	To be checked physically by the BOO.	Network interface must be as per the requirement mentioned in the QRs.
17.15	USB Interface	USB 2.0 x 2, USB 3.0 x 1 or better	To be checked physically by the BOO.	USB interface must be as per the requirement mentioned in the QRs.
17.16	Monitoring	USB Mouse	To be checked physically by	Monitoring must be as per

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		Control, Digital Keyboard Control	the BOO.	the requirement mentioned in the QRs.
17.17	Multi-screen Display	Support (support on local monitor Full screen, Quad view, 4x4 (min16-view) or any other window division based on the site requirement)	The FAT report needs to be submitted & the functionality needs to be verified by the BOO.	Multi-screen display must be as per the requirement mentioned in the QRs.
17.18	Camera Control	Yes	To be checked physically by the BOO.	Camera control must be as per the requirement mentioned in the QRs.
17.19	Recording/Playback Control	Required	To be checked physically by the BOO.	Recording/playback control must be as per the requirement mentioned in the QRs.
17.20	Recording Mode	Manual, Schedule (Continuous/Event), Event (Pre/Post), Motion detection, Alarms, Trigger Input etc.	Specification to be verified by the BOO through specification sheet.	Recording mode must be as per the requirement mentioned in the QRs.
17.21	Fail over Recording	Required	To be checked physically by the BOO.	Fail over recording must be as per the requirement mentioned in the QRs.
17.22	Search and Export	Recording search by Camera, date and time. Export of video clips to USB Flash Drives.	Specification to be verified by the BOO through specification sheet.	Search and export must be as per the requirement mentioned in the QRs.
17.23	System Log	Alarms, Events, Operator Log etc.	Specification to be verified by the BOO through specification sheet.	System log must be as per the requirement mentioned in the QRs.
17.24	User Management	Authentication of User Login, Configuration of Users, User Groups and User Access Rights.	Specification to be verified by the BOO through specification sheet.	User management must be as per the requirement mentioned in the QRs.
17.25	Power Supply	Dual, Redundant	To be checked physically by the BOO.	Power supply must be as per the requirement mentioned in the QRs.
17.26	Chassis Mounting	19" Rack Mounted	To be checked physically by the BOO.	Chassis Mounting must be as per the requirement

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
				mentioned in the QRs.
17.27	Regulatory Approvals/Certifications	UL, CE & FCC/BIS	Firm has submitted the OEM certificate.	Regulatory approvals/ certifications must be as per the requirement mentioned in the QRs.

**Additional Functionality:** The NVR should be able to synchronize video from cameras on restoration of Network after failure.

When any failover or network interference happens, the recording should start on the SD Card in the IP Cameras, however when network recovers, the data on SD Card should be automatically transferred to NVR without any impact on operation of NVR. It should be designed to guarantee to record 24 hours of recorded data during Network failure. 50% of SD Card capacity should record at originally configured resolution into the NVR, however after 50% of SD Card storage is filled, it drops frame rate automatically to ensure minimum 24 hours back up. On Resumption of the Network, the Recording should automatically be transferred to the NVR.

The failover should not only be supported between IP camera and NVR, but also between NVR and Failover NVR. Failover NVR is designed to support failover for multiple NVR. For example, there was 10 NVRs Are running with 1 failover NVR, the failover NVR will take its operation if any one of 10 NVR is failed

The NVR should support Two-way Audio function Security: The cameras should be connected through a physically separate subnet mask. Limiting direct access to the cameras and increasing security

#### 18. . SFP Module 2.5 Gbps

18.1	SFP transceiver can be used to connect multiple GPON optical network terminals to GPON OLT. Maximum link span can reach 60km. This transceiver is based on WDM (BiDi) technology thus it is possible to send (TX: 1310nm) and receive (RX: 1490nm) data simultaneously in both directions over single strain of fiber (optical splitters are needed to connect multiple ONTs). Module is compliant with ITU-T G.984.2 Class C+ and SFP MSA standards. Host device can access module internal EEPROM memory and DDMI via I2C interface. DDMI (Digital Diagnostic Monitoring Interface) is fully compliant with DOM.		The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	The specification must be as per the requirement mentioned in the QRs.
18.2	Supported transmission technology	ITU-T G.984.2	Firm has submitted the OEM certificate.	Supported transmission technology must be as per the requirement mentioned in the QRs.
18.3	Downstream throughput	2488Mbps	Firm has submitted the OEM certificate.	Downstream throughput must be as per the requirement mentioned in the QRs.
18.4	Upstream	1244Mbps	Firm has submitted the OEM	Upstream throughput



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
	throughput		certificate.	must be as per the requirement mentioned in the QRs.
18.5	Transmission medium	Single-mode fibre 9/125µm	Firm has submitted the OEM certificate.	Transmission medium must be as per the requirement mentioned in the QRs.
18.6	Transmission distance	60km	Firm has submitted the OEM certificate.	Transmission distance must be as per the requirement mentioned in the QRs.
18.7	Receptacle type	SC Simplex Wavelength TX: 1490nm / RX:1310nm	Firm has submitted the OEM certificate.	Receptacle type must be as per the requirement mentioned in the QRs.
18.8	Output power/Rx sensitivity	+3~+7dBm Receiver sensitivity -31dBm	Firm has submitted the OEM certificate.	Output power must be as per the requirement mentioned in the QRs.
18.9	Power supply voltage	3.3V	Firm has submitted the OEM certificate.	Power supply voltage must be as per the requirement mentioned in the QRs.
18.10	Total power consumption	< 2W	Firm has submitted the OEM certificate.	Total power consumption must be as per the requirement mentioned in the QRs.
18.11	Operating environment	-20 <sup>0</sup> to +85 <sup>0</sup>	Firm has submitted the OEM certificate.	Operating temperature must be as per the requirement mentioned in the QRs.
18.12	Operating environment	humidity 5~95% non-condensing	Firm has submitted the OEM certificate.	Operating humidity must be as per the requirement mentioned in the QRs.

#### 19. . Industrial GPON ONT/ONU with 1X POE LAN Port

19.1	Plug and Play	Based on automatic discovery and configuration of the ONU "Plug and Play"	To be checked physically by the BOO.	Plug and play must be as per the requirement mentioned in the QRs.
19.2	Link indication	Link Power, PON, LAN, POE+.	The functionality needs to be verified by the BOO through data sheet.	Link must be as per the requirement mentioned in the QRs.
19.3	Forwarding mode	Store and forward/ line rate forwarding	The functionality needs to be verified by the BOO through data sheet.	Forwarding mode must be as per the requirement mentioned in the QRs.
19.4	VLAN	IEEE802.1Q, VLAN tagging (Q-in-Q)	The functionality needs to be verified by the BOO through data sheet.	VLAN must be as per the requirement mentioned in the QRs.
19.5	Multicast	IGMP Snooping	The functionality needs to be	Multicast must be as per

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		V1/V2/V3	verified by the BOO through data sheet.	the requirement mentioned in the QRs.
19.6	Security :	AES encryption	The functionality needs to be verified by the BOO through data sheet.	Security must be as per the requirement mentioned in the QRs.
19.7	Compliant with:	ITU-T G.984.1, G.984.2, G.984.3, G.984.4, G.998	The functionality needs to be verified by the BOO through data sheet.	Must compliant with requirement mentioned in the QRs.
19.8	Certification	ONT/ONU should be BBF.247 Certified, UL, FCC	The functionality needs to be verified by the BOO through data sheet.	Certification must be as per the requirement mentioned in the QRs.
19.9	Quality of Service	Upgradeable dynamic DBA algorithm Rate-limiting on Ethernet and PON interface, 64K~1M bps increments Customized quality of service. IEEE802.1P QoS, scheduling policy TOS, COS, DSCP Priority, traffic	The functionality needs to be verified by the BOO through data sheet.	Quality of service must be as per the requirement mentioned in the QRs.
19.10	COS	Port-based downstream priority queues and strict priority scheduling for traffic CoS differentiation.	The functionality needs to be verified by the BOO through data sheet.	COS must be as per the requirement mentioned in the QRs.
19.11	Operation and maintenance	Standard-compliant OMCI interface as defined by G.984.4 and G.988.	The functionality needs to be verified by the BOO through data sheet.	Operation and maintenance must be as per the requirement mentioned in the QRs.
19.12	PON interface	1 PON interface optical module SC/LC connector Single mode, single-strand 1310nm upload and 1490nm download.	The functionality needs to be verified by the BOO through data sheet.	PON interface must be as per the requirement mentioned in the QRs.
19.13	PON Class	GPON optical uplink with class B+ support	The functionality needs to be verified by the BOO through data sheet.	PON Class must be as per the requirement mentioned in the QRs.
19.14	Transmit	Data TX power 0.5 ... +5 dBm	The functionality needs to be verified by the BOO through data sheet.	Transmit must be as per the requirement mentioned in the QRs.

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
19.15	Receive	Data RX power -8 ... -27 dBm.	The functionality needs to be verified by the BOO through data sheet.	Receive must be as per the requirement mentioned in the QRs.
19.16	Ethernet interface	<b>4*10/100/1000 BASE-T POE+ interface with RJ-45 connectors. Ethernet port auto-negotiation or manual configuration with media dependent interface crossover (MDI/MDIX).</b>	The functionality needs to be verified by the BOO through data sheet.	Ethernet interface must be as per the requirement mentioned in the QRs.
19.17	Power supply	External power supply adapter	The functionality needs to be verified by the BOO through data sheet.	Power supply must be as per the requirement mentioned in the QRs.
19.18	Power Consumption	<b>≤ 150W (at max load)</b>	The functionality needs to be verified by the BOO through data sheet.	Power must be as per the requirement mentioned in the QRs.
19.19	Working Temperature	-40°C to 60°C (-40°F to 140°F)	The functionality needs to be verified by the BOO through data sheet.	Working temperature must be as per the requirement mentioned in the QRs.
19.20	Working Humidity	RH:5 ~ 95% non-condensing	The functionality needs to be verified by the BOO through data sheet.	Working humidity must be as per the requirement mentioned in the QRs.
19.21	Working environment	Outdoor wall or pall mounted (IP30).	The functionality needs to be verified by the BOO through data sheet.	Working environment must be as per the requirement mentioned in the QRs.

## 20. . GPON 8 Port OLT

20.1	OLT Should be 19" ETSI Rack mountable with 4 slot for Line Modules	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	OLT must be 19" ETSI Rack mountable with 4 slot for Line Modules.
20.2	It should have dual DC Power supply.	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	It must have dual DC Power supply.
20.3	It should be fully compliant with ITU GPON standards.	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	df It must be fully compliant with ITU GPON standards.



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
20.4	It should have 8 downstream GPON ports expandable to 16 downstream GPON port with addition of PON SFP and with 4 uplink GE optical/electrical/ 10 GE support.		The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	It must have 8 downstream GPON ports expandable to 16 downstream GPON port with addition of PON SFP and with 4 uplink GE optical/electrical/ 10 GE support.
20.5	It should be using field-proven OMCI stack and OLT management software solution.		The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	It must be using field-proven OMCI stack and OLT management software solution.
20.6	It should be TR-101 compliant solution for FTT x OLT applications.		The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	It must be TR-101 compliant solution for FTT x OLT applications.
20.7	It should have high splitter rate with support up to 128 x ONT using C+ PON SFP. It addition GPON pon port should have support of C++ SFP for -34dB Rx sensitivity.		The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Must have high splitter rate with support up to 128 x ONT using C+ PON SFP. It addition GPON pon port should have support of C++ SFP for -34dB Rx sensitivity.
20.8	It should support uplink FEC, downlink FEC (Forward Error Correction)		The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Must support uplink FEC, downlink FEC (Forward Error Correction)
20.9	4096 port-IDs PER GPON MAC (downstream and upstream) & 1024 Alloc-IDs per GPON MAC (upstream).		The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	The Port must be as per the requirement mentioned in the QRs.
20.10	It should static & Dynamic Bandwidth Allocation.		The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Must static & dynamic bandwidth allocation.
20.11	It should support Port-based QinQ and Selective QinQ (Stack VLAN).		The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Must support Port-based QinQ and selective QinQ (Stack VLAN).
20.12	It should support Port-based/MAC-based/IP subnet-based VLAN.		The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Must support Port-based/MAC-based/IP subnet-based VLAN.
20.13	It should support IEEE 802. 1D		The FAT report needs to be	Must support IEEE 802.

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		Spanning Tree Protocol (STP)	submitted and the functionality need to be verified by the firm in presence of BOO.	1D spanning Tree Protocol (STP).
20.14		It should support IEEE 802.1w rapid Spanning Tree Protocol (RSTP) IEEE 802. 1s	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Must support IEEE 802. 1w rapid spanning Tree Protocol (RSTP) IEEE 802.1s.
20.15		It should have multiple spanning tree protocol instances (MSTP) Bi-directional bandwidth control. It should have static link aggregation and LACP (Link Aggregation Control Protocol)	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Must have multiple spanning tree protocol instances (MSTP) Bi-directional bandwidth control. Must have static link aggregation and LACP (Link Aggregation Control Protocol).
20.16		It should have port mirroring and traffic mirroring	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Must have port mirroring and traffic mirroring.
20.17		It should have rate-limit to packet sending/receiving speed of port of self-defined flow and provide general flow monitor and two-speed tri-color monitor of self-defined flow.	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Must have rate-limit to packet sending/receiving speed of port of self-defined flow and provide general flow monitor and two-speed tri-color monitor of self-defined flow.
20.18		It should have priority remark to port or self-defined flow and provide 802. 1P, DSCP priority and remark	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Must have priority remark to port or self-defined flow and provide 802.1P, DSCP priority and remark.
20.19		It should have CAR (committed Access Rate), Traffic Shaping and flow statistics Packet mirror and redirection of interface and self-defined flow.	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Must have CAR (committed Access Rate), Traffic Shaping and flow statistics Packet mirror and redirection of interface and self-defined flow.
20.20		It should support ERPS(recover-time <200 ms), RSTP/MSTP (recover time <1s) & LACP (recover-time < 200 ms)	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Must support ERPS(recover-time <200 ms), RSTP/MSTP (recover time <1s) & LACP (recover-time < 200 ms)
20.21		OLT Power consumption should be <= 270w	The FAT report needs to be submitted and the functionality need to be verified by the firm in	OLT Power consumption must be <= 270w.



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
			presence of BOO.	
20.22	It should have super queue scheduler based on port and self-defined flow. Each port/flow supports 8 priority queues and scheduler of SP, WRR and SP+ WRR.		The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Must have super queue scheduler based on port and self-defined flow. Each port/flow supports 8 priority queues and scheduler of SP, WRR and SP+ WRR.
20.23	It should support congestion avoid mechanism including Tail Drop and WRED		The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Must support congestion avoid mechanism including Tail Drop and WRED.
20.24	<b>OLT should have switching capacity of 480 Gbps or higher</b>		The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	OLT must have switching capacity of 480 Gbps or higher.
20.25	IPv4 ARP Proxy DHCP Relay Static route IPv6		The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Port must be as per the requirement mentioned in the QRs.

#### 21. QRs/Specification of EMS Software for Managing GPON Equipment

21.1	Based on standard SNMP protocol		The functionality needs to be verified by the board of officers.	The SNMP protocol must be as per requirement mentioned in the QRs.
21.2	Support multiple client access, C/S architecture		The functionality needs to be verified by the board of officers.	Client access, C/S architecture must be as per requirement mentioned in the QRs.
21.3	Support integrated management all our EPON/GPON series products		The functionality needs to be verified by the board of officers.	Must support integrated managed all our EPON/GPON series products.
21.4	Support auto topology or modify manually, and multi-layer map view		The functionality needs to be verified by the board of officers.	Must support auto topology or modify manually, and multi-layer map view.
21.5	Support configuration operation on all EPON/GPON products functions		The functionality needs to be verified by the board of officers.	Must support configuration operation on all EPON/GPON products functions
21.6	Support multiple level operation authority		The functionality needs to be verified by the board of officers.	Must support multiple level operation authority.
21.7	Real-time and history alarm record view, search and save		The functionality needs to be verified by the board of officers.	Must have real-time and history alarm record view, search and save.
21.8	Operation history record trace and		The functionality needs to be	Must have operation

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
	save		verified by the board of officers.	history record trace and save.
21.9	Use independent database and support data backup and import		The functionality needs to be verified by the board of officers.	Software must use independent database and support data backup and import.
21.10	Support performance monitor and traffic counters statistic		The functionality needs to be verified by the board of officers.	Must support performance monitor and traffic counters statistic.
21.11	The EMS is must be able to run on a Linux/Windows platform.		The functionality needs to be verified by the board of officers.	The specification must be as per the requirement mentioned the QRs.
21.12	The network representation shall be based on a tree like structure as well as in a graphical structure.		The functionality needs to be verified by the board of officers.	The network representation must be based on a tree like structure as well as in a graphical structure.
21.13	Support Map view with Google MAP		The functionality needs to be verified by the board of officers.	Must support map view with Google Map.
21.14	The proposed EMS has the capability to support very large networks in a single instance.		The functionality needs to be verified by the board of officers.	The specification must be as per the requirement mentioned the QRs.
21.15	Hardware or software upgrade of the EMS must not affect end-user services.		The functionality needs to be verified by the board of officers.	The specification must be as per the requirement mentioned the QRs.
21.16	System upgrades must be performed from the operator position without requiring any on-site visit.		The functionality needs to be verified by the board of officers.	The specification must be as per the requirement mentioned the QRs.
21.17	Compatibility between different versions of NE software must be maintained via "plug-in" architecture. Concurrency of different NE software versions must be supported without service degradation.		The functionality needs to be verified by the board of officers.	Compatibility must be as per the requirement mentioned the QRs.
21.18	The EMS should allow for the selection of a default map/list for some operators or group of operators. The default map/list shall be defined by the EMS Administrator.		The functionality needs to be verified by the board of officers.	The EMS must allow for the selection of a default map/list for some operators or group of operators. The default map/list must be defined by the EMS Administrator.
21.19	The EMS shall update automatically and in real time all local and remote Network Management operator maps/lists after a NE is added on the map/list or the NE settings on the map/list are modified (e.g. the		The functionality needs to be verified by the board of officers.	The EMS must update automatically and in real time all local and remote Network Management operator maps/lists after a NE is added on the map/list or the NE setting

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
	name, ...)			on the map/list are modified (e.g. the name, ...)
21.20	The EMS must be able to provide a tool to move the NE's amongst the map/list in order to restructure the network.		The functionality needs to be verified by the board of officers.	The specification must be as per the requirement mentioned the QRs.
<b>22. . 08-Port POE Managed Industrial Switch</b>				
22.1	Ethernet	Operating mode: Store and forward, L2 wire-speed/non-blocking switching engine, MAC address: 8K/16 K or better, Jumbo Frame : 9K bytes	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	The Ethernet must be as per requirement mentioned in the QRs.
22.2	Copper RJ45 Ports	<b>Speed: 8 nos of POE+ Ports. Speed of 10/100/1000 Mbps • MDI/MDIX Auto</b>	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Copper RJ45 Ports must be as per requirement mentioned in the QRs.
22.3	SFP (Pluggable) Ports	Port types supported: 4GE SFP Port	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	SFP (Pluggable) Ports must be as per requirement mentioned in the QRs.
22.4	Network Redundancy	Fast failover protection rings: - Support Single & Multiple rings; Ring coupling; Dual-homing, VLAN: 4K, IEEE 802.1Q tag based VLANs, rapid ring protection with self-recovery time in <b>50 ms</b> or better.	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Network redundancy must be as per requirement mentioned in the QRs.
22.5	IEEE 802.1ad Double Tagging (Qin Q)	Multicast protocols: - IGMP with up to 1000 multicast groups - IGMP snooping and querying, static routing.	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	IEEE 802.1ad Double Tagging (Qin Q) must be as per requirement mentioned in the QRs.



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
22.6	Chain	Spanning Tree Protocol: IEEE 802.1D STP bridge	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Chain must be as per requirement mentioned in the QRs.
22.7	Traffic management & QoS	Priority: IEEE 802.1p QoS • Number of queues per port: 4 egress • Ingress Policing, Rate-Limit, Egress Queuing/shaping, QoS, Ethernet QoS	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Traffic management & QoS must be as per requirement mentioned in the QRs.
22.8	Security	Port security: - IP and MAC-based access control IEEE 802.1X authentication Network Access Control - RADIUS and TACACS+ AAA (Authentication, Accounting and Authorization) • Storm Control: Multicast/Broadcast/Flooding	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Security must be as per requirement mentioned in the QRs.
22.9	Management	User Management interfaces: - CLI (command line interface), Console - WEB-based Management - SNMP v1, v2c, v3 - Telnet	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Management must be as per requirement mentioned in the QRs.
22.10	Management Security:	RFC 2068: HTTP, SSH - Radius Client for Management • Upgrade & Restore: FTP for Configuration Import/Export, FTP for Firmware Upgrade • Diagnostic: Syslog • MIBs: - RFC 1757 RMON 1,2,3,9; RFC-	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Management Security must be as per requirement mentioned in the QRs.

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		1493 Bridge MIB; RFC 2233 IF MIB • DHCP: Client, Server, Relay, Snooping, Option 82 • NTP/SNTP: Yes • System status: Device info/status; Ethernet port status; PoE status •		
22.11	Power Input	Redundant Input Terminals • Input voltage range: 48-57 VDC	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Power input must be as per requirement mentioned in the QRs.
22.12	Indicators	Ethernet port indication: Link & Speed through LEDs.	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Indicators must be as per requirement mentioned in the QRs.
22.13	Environmental & Compliances	Operating temperature range: -40 to +70°C ( Storage temperature range: -40 to +70 °C Humidity (non-condensing): 5 to 95% RH RoHS: RoHS (Pb free) • MTBF: > 25 years	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Environmental & Compliances must be as per requirement mentioned in the QRs.
22.14	Mechanical	Ingress protection: IP30 • Installation option: DIN-Rail mounting	The FAT report needs to be submitted and the functionality need to be verified by the firm in presence of BOO.	Mechanical must be as per requirement mentioned in the QRs.

### 23. Command Control & Analytical Software

S No.	Specification	Trial procedure suggested by the BOO.	Result expected/desired
<b>1</b>	<b>Requirement :</b>		
	The requirements VMS System shall be as below		
<b>1.1</b>	<b>Management Software</b>		
1.1.1	This shall be a highly scalable enterprise level software solution. It shall offer a complete video surveillance solution that will be scalable to required number of	The functionality needs to be verified by the BOO through Data Sheet.	Software must be a highly scalable enterprise level software solution. It must offer a complete video surveillance solution that

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		sensors that can be added on a unit-by-unit basis.		will be scalable to required numbers of sensors that can be added on a unit-by-unit basis.
1.1.2		The Management Software shall be licensed and shall operate on open architecture and shall require no proprietary IT hardware.	The functionality needs to be verified by the BOO through Data Sheet.	The Management Software must be licensed and must operate on open architecture and shall require no proprietary IT hardware.
1.1.3		The Management Software shall allow for video to be streamed on workstation I in Matrix or on a video wall.	The functionality needs to be verified by the BOO through Data Sheet.	The Management Software must allow for video to be streamed on workstation I in Matrix or on a video wall.
1.1.4		The user with administrative rights shall create clients (users) and give access to the software client application based on predefined user access rights.	The functionality needs to be verified by the BOO through Data Sheet.	The user with administrative rights must create clients (users) and give access to the software client application based on predefined user access rights.
1.1.5		The system shall allow the recording, live monitoring, playback of archived video and data simultaneously.	The functionality needs to be verified by the BOO through Data Sheet.	The system must allow the recording, live monitoring, playback of archived video and data simultaneously.
1.1.6		The software shall provide the following:	The functionality needs to be verified by the BOO through Data Sheet.	The software must provide the following
1.1.6.1		Several simultaneous live picture connections of camera in network.	The functionality needs to be verified by the BOO through Data Sheet.	Several simultaneous live picture connections of camera in network.
1.1.6.2		Configuration of monitoring situation (2 Dimensional Multi-Level site maps).	The functionality needs to be verified by the BOO through Data Sheet.	Configuration of monitoring situation (2 Dimensional Multi-Level site maps).
1.1.6.3		Programming of alarm-triggered automatic events in various alarms configuration.	The functionality needs to be verified by the BOO through Data Sheet.	Programming of alarm-triggered automatic events in various alarms configuration.
1.1.6.4		System set up with limited operation options for clearly defined surveillance tasks.	The functionality needs to be verified by the BOO through Data Sheet.	System set up with limited operation options for clearly defined surveillance tasks.
1.1.6.5		Programming of automatic recording events on a network recorder.	The functionality needs to be verified by the BOO through Data Sheet.	Programming of automatic recording events on a network recorder.
1.1.7		The software shall display dual H.264 video streams in real time simultaneously at frame rates	The functionality needs to be verified by the BOO through Data Sheet.	The software must display dual H.264 video streams in real time



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		ranging from 1 fps to 25 fps and resolution ranging Full HD to other HD/SD resolution.		simultaneously at frame rates ranging from 1 fps to 25 fps and resolution ranging Full HD to other HD/SD resolution.
1.1.8	Each camera's bit rate, frame rate and resolution shall be set independently from other cameras in the system, and altering these settings shall not affect the recording and display settings of other cameras.	The functionality needs to be verified by the BOO through Data Sheet.		Each camera's bit rate, frame rate and resolution must be set independently from other cameras in the system, and altering these settings may not affect the recording and display settings of other cameras.
1.1.9	The software shall provide automatic search and discovery of components of video surveillance system on the network, which can be network sensors	The functionality needs to be verified by the BOO through Data Sheet.		The software must provide automatic search and discovery of components of video surveillance system on the network, which can be network sensors
1.1.10	The software shall provide drag & drop functions on the system and also for setup of connection between sensors and monitors connected to one workstation	The functionality needs to be verified by the BOO through Data Sheet.		The software must provide drag & drop functions on the system and also for setup of connection between sensors and monitors connected to one workstation
1.1.11	The software shall allow:	The functionality needs to be verified by the BOO through Data Sheet.		The software must allow:
1.1.11.1	Live display of sensor feed	The functionality needs to be verified by the BOO through Data Sheet.		Live display of sensor feed
1.1.11.2	Live display of sensor sequences.	The functionality needs to be verified by the BOO through Data Sheet.		Live display of sensor sequences.
1.1.11.3	Control and integration of sensors using third party API/SDK integration including EO, Radar, IRIDS,UGS,UAV,PTZ etc	The functionality needs to be verified by the BOO through Data Sheet.		Control and integration of sensors using third party API/SDK integration including EO, Radar, IRIDS,UGS,UAV,PTZ etc
1.1.11.4	Playback of archived video	The functionality needs to be verified by the BOO through Data Sheet.		Playback of archived video
1.1.11.5	Retrieval of archived video.	The functionality needs to be verified by the BOO through Data Sheet.		Retrieval of archived video.
1.1.11.6	Instant Replay of live video.	The functionality needs to be verified by the BOO through Data Sheet.		Instant Replay of live video.
1.1.11.7	Use of site maps.	The functionality needs to be		Use of site maps.

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
7			verified by the BOO through Data Sheet.	
1.1.11.8	Configuration of system settings.		The functionality needs to be verified by the BOO through Data Sheet.	Configuration of system settings.
1.1.11.9	Configuration and programming of P/T/Z cameras, features like auto tours, presets etc.		The functionality needs to be verified by the BOO through Data Sheet.	Configuration and programming of P/T/Z cameras, features like auto tours, presets etc.
1.1.10	The software shall be able to do video recording on any of the following options - inbuilt hard disks on the server, direct attached storage boxes attached to servers, network attached storage, storage area network.		The functionality needs to be verified by the BOO through Data Sheet.	The software must be able to do video recording on any of the following options - inbuilt hard disks on the server, direct attached storage boxes attached to servers, network attached storage, storage area network.
1.1.11	The software shall be capable of handling sensors and alarm icons on area maps. The area map shall be configurable to pop up upon the receipt of an alarm received from a sensor on the map. This can be on the same or other monitors on the PC.		The functionality needs to be verified by the BOO through Data Sheet.	The software must be capable of handling sensors and alarm icons on area maps. The area map must be configurable to pop up upon the receipt of an alarm received from a sensor on the map. This can be on the same or other monitors on the PC.
1.1.12	The software shall be able to select the required recording based on the time recording was activated, the duration of recording, operator activated recording, event activated recording, scheduled recording.		The functionality needs to be verified by the BOO through Data Sheet.	The software must be able to select the required recording based on the time recording was activated, the duration of recording, operator activated recording, event activated recording, scheduled recording.
1.1.13	The software shall provide a reporting utility for tracking for the following minimum options. Video clips and image snapshots shall be stored with reports for documenting events		The functionality needs to be verified by the BOO through Data Sheet.	The software must provide a reporting utility for tracking for the following minimum options. Video clips and image snapshots shall be stored with reports for documenting events
1.1.13.1	Alarms		The functionality needs to be verified by the BOO through Data Sheet.	Alarms
1.1.13.2	Incidents		The functionality needs to be verified by the BOO through Data Sheet.	Incidents

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
1.1.13.3	Operator logs		The functionality needs to be verified by the BOO through Data Sheet.	Operator logs
1.1.14	The software shall have the facility to export the desired portion of clipping of video from a desired date/time to another desired date/time on DVD/ on any client/ network storage device. Viewing of this recording shall be possible on authorized player which shall be provided by software manufacturer or in media player on computer utilizing a Window environment.		The functionality needs to be verified by the BOO through Data Sheet.	The software must have the facility to export the desired portion of clipping of video from a desired date/time to another desired date/time on DVD/ on any client/ network storage device. Viewing of this recording shall be possible on authorized player which shall be provided by software manufacturer or in media player on computer utilizing a Window environment.
1.1.15	The Video Management servers shall not limit the number of network video recording servers which can be networked together to form video management and recording system		The functionality needs to be verified by the BOO through Data Sheet.	The Video Management servers must not limit the number of network video recording servers which can be networked together to form video management and recording system
1.1.16	The Video Management servers shall maintain a catalogue of settings for all the clients, servers, and IP cameras & IP enabled cameras in the system. If Video Management servers & recording cannot be managed by single server, in such cases, additional server shall be provided.		The functionality needs to be verified by the BOO through Data Sheet.	The Video Management servers must maintain a catalogue of settings for all the clients, servers, and IP cameras & IP enabled cameras in the system. If Video Management servers & recording cannot be managed by single server, in such cases, additional server shall be provided.
1.1.17	The software shall enable the client to dynamically create connections between sensors and clients and view live or recorded video on Monitors.		The functionality needs to be verified by the BOO through Data Sheet.	The software must enable the client to dynamically create connections between sensors and clients and view live or recorded video on Monitors.
1.1.18	The software shall provide the client seamless operation of all sensors and clients available in the system regardless of the actual connection to different		The functionality needs to be verified by the BOO through Data Sheet.	The software must provide the client seamless operation of all sensors and clients available in the system regardless of the



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
	Network Video Recording servers.			actual connection to different Network Video Recording servers.
1.1.19	The software shall detect signal loss of sensors and have the capability to alert the systems administrator.	The functionality needs to be verified by the BOO through Data Sheet.		The software must detect signal loss of sensors and have the capability to alert the systems administrator.
1.1.20	The software shall receive all incoming events (motion detection and triggered digital input and relay output) in the system and take appropriate actions based on user-defined event/action relationships.	The functionality needs to be verified by the BOO through Data Sheet.		The software must receive all incoming events (motion detection and triggered digital input and relay output) in the system and take appropriate actions based on user-defined event/action relationships.
1.1.21	The software shall create an audit trail of all events and user activities.	The functionality needs to be verified by the BOO through Data Sheet.		The software must create an audit trail of all events and user activities.
1.1.22	The Management Software shall support the following:-	The functionality needs to be verified by the BOO through Data Sheet.		The Management Software must support the following:-
1.1.23	The Management Software shall provide a full matrix operation of IP video to display monitors.	The functionality needs to be verified by the BOO through Data Sheet.		The Management Software must provide a full matrix operation of IP video to display monitors.
1.1.24	The Management Software shall have the capability of creating sensors sequences with the following functionalities:	The functionality needs to be verified by the BOO through Data Sheet.		The Management Software must have the capability of creating sensors sequences with the following functionalities:
1.1.24.1	Each Sequence shall have capability up to hundreds of sensors.	The functionality needs to be verified by the BOO through Data Sheet.		Each Sequence must have capability up to hundreds of sensors.
1.1.24.2	Each sensors in the sequence shall have its own individual dwell time, from 1 to 60 seconds.	The functionality needs to be verified by the BOO through Data Sheet.		Each sensors in the sequence must have its own individual dwell time, from 1 to 60 seconds.
1.1.24.3	Multiple users shall be able to view the same sensors sequence simultaneously, not necessarily synchronized nor with the other.	The functionality needs to be verified by the BOO through Data Sheet.		Multiple users must be able to view the same sensors sequence simultaneously, not necessarily synchronized nor with the other.
1.1.25	The software shall provide alarm management module.	The functionality needs to be verified by the BOO through Data Sheet.		The software must provide alarm management module.
1.1.25.1	The alarm management shall be able to set any monitor or groups of monitors to automatically	The functionality needs to be verified by the BOO through Data Sheet.		The alarm management must be able to set any monitor or groups of



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		display sensors in response to alarm inputs.		monitors to automatically display sensors in response to alarm inputs.
1.1.25.2		The alarm management shall be able to reset automatically or manually alarmed video	The functionality needs to be verified by the BOO through Data Sheet.	The alarm management must be able to reset automatically or manually alarmed video
1.1.26		It shall be possible to search for recordings in the software by sensors, date and time. If a data and time is specified, playback shall commence from that date and time. It shall be possible to playback more than one sensors simultaneously	The functionality needs to be verified by the BOO through Data Sheet.	It must be possible to search for recordings in the software by sensors, date and time. If a data and time is specified, playback shall commence from that date and time. It shall be possible to playback more than one sensors simultaneously
1.1.27		The software shall support at least 64 video streams concurrently. It shall support at least 4 monitors in one server/ workstation for displaying live video. It shall allow minimum 5 levels of user and alarm prioritization. It shall allow minimum 16 sensors to be replayed simultaneously.	The functionality needs to be verified by the BOO through Data Sheet.	The software must support at least 64 video streams concurrently. It shall support at least 4 monitors in one server/ workstation for displaying live video. It must allow minimum 5 levels of user and alarm prioritization. It must allow minimum 16 sensors to be replayed simultaneously.
1.1.28		The VMS shall be seamlessly integrated with Face recognition Software and have capability to receive the alerts.	The functionality needs to be verified by the BOO through Data Sheet.	The VMS must be seamlessly integrated with Face recognition Software and have capability to receive the alerts.
<b>1.2</b>	<b>Graphic User Interface Client Software Features</b>			
1.2.1		The GUI software shall perform the following applications simultaneously without interfering with any of the storage server operations (recording, alarms, etc.):	The functionality needs to be verified by the BOO through Data Sheet.	The GUI software must perform the following applications simultaneously without interfering with any of the storage server operations (recording, alarms, etc.).
1.2.1.1		Live display of sensors	The functionality needs to be verified by the BOO through Data Sheet.	Live display of sensors
1.2.1.2		Live display of sensors sequences.	The functionality needs to be verified by the BOO through Data Sheet.	Live display of sensors sequences.
1.2.1.3		Control of PTZ cameras / sensors	The functionality needs to be verified by the BOO through	Control of PTZ cameras / sensors

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
			Data Sheet.	
1.2.1.4	Playback of archived video.		The functionality needs to be verified by the BOO through Data Sheet.	Playback of archived video.
1.2.1.5	Retrieval of archived video		The functionality needs to be verified by the BOO through Data Sheet.	Retrieval of archived video
1.2.1.6	Instant replay of live video.		The functionality needs to be verified by the BOO through Data Sheet.	Instant replay of live video.
1.2.1.7	Use of graphical controls (maps) and alarm management.		The functionality needs to be verified by the BOO through Data Sheet.	Use of graphical controls (maps) and alarm management.
1.2.1.8	Configuration of system settings.		The functionality needs to be verified by the BOO through Data Sheet.	Configuration of system settings.
1.2.2	The GUI software shall support any form of IP network connectivity including LAN, WAN and wireless LAN technologies.		The functionality needs to be verified by the BOO through Data Sheet.	The GUI software must support any form of IP network connectivity including LAN, WAN and wireless LAN technologies.
1.2.3	The GUI software shall support multicast and unicast video streaming.		The functionality needs to be verified by the BOO through Data Sheet.	The GUI software must support multicast and unicast video streaming.
1.2.4	The GUI software shall provide an authentication mechanism, which verifies the validity of the user.		The functionality needs to be verified by the BOO through Data Sheet.	The GUI software must provide an authentication mechanism, which verifies the validity of the user.
1.2.5	The GUI software shall allow for live monitoring of video.		The functionality needs to be verified by the BOO through Data Sheet.	The GUI software must allow for live monitoring of video.
1.2.6	It shall enable view of 1 to minimum 16 video tiles simultaneously on a single digital monitor at 25 fps per camera		The functionality needs to be verified by the BOO through Data Sheet.	It must enable view of 1 to minimum 16 video tiles simultaneously on a single digital monitor at 25 fps per camera
1.2.7	The software shall provide on each of the digital monitors independently the following tile views		The functionality needs to be verified by the BOO through Data Sheet.	The software must provide on each of the digital monitors independently the following tile views
1.2.7.1	Full screen		The functionality needs to be verified by the BOO through Data Sheet.	Full screen
1.2.7.2	Quad view		The functionality needs to be verified by the BOO through Data Sheet.	Quad view
1.2.7.3	4x4 (16-view)		The functionality needs to be verified by the BOO through Data Sheet.	4x4 (16-view)
1.2.7.4	The Software shall also support		The functionality needs to be	The Software must also

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		any other window division based on the site requirement	verified by the BOO through Data Sheet.	support any other window division based on the site requirement
1.2.7.5	The GUI software shall allow operators to view an instant replay of any Camera.		The functionality needs to be verified by the BOO through Data Sheet.	The GUI software must allow operators to view an instant replay of any Camera.
1.2.7.6	The operator shall be able to define the amount of time he wishes to go back from a timeline bar or through a custom setup period.		The functionality needs to be verified by the BOO through Data Sheet.	The operator must be able to define the amount of time he wishes to go back from a timeline bar or through a custom setup period.
1.2.8	The operator shall be able to control the playback with play, pause, forward, and speed buttons.		The functionality needs to be verified by the BOO through Data Sheet.	The operator must be able to control the playback with play, pause, forward, and speed buttons.
1.2.9	The operator shall be able to choose and trigger following minimum action from a macro/site map:		The functionality needs to be verified by the BOO through Data Sheet.	The operator must be able to choose and trigger following minimum action from a macro/site map:
1.2.9.1	View Camera/sensors in a video tile.		The functionality needs to be verified by the BOO through Data Sheet.	View Camera/sensors in a video tile.
1.2.9.2	View map or procedure in a video tile.		The functionality needs to be verified by the BOO through Data Sheet.	View map or procedure in a video tile.
1.2.9.3	Starting/stopping PTZ pattern.		The functionality needs to be verified by the BOO through Data Sheet.	Starting/stopping PTZ pattern.
1.2.9.4	Go to PTZ preset.		The functionality needs to be verified by the BOO through Data Sheet.	Go to PTZ preset.
1.2.10	The GUI software shall provide management and control over the system using a standard PC mouse, keyboard and Digital keyboard.		The functionality needs to be verified by the BOO through Data Sheet.	The GUI software must provide management and control over the system using a standard PC mouse, keyboard and Digital keyboard.
1.2.11	The GUI software shall display all sensors attached to the system regardless of their physical location on the network.		The functionality needs to be verified by the BOO through Data Sheet.	The GUI software must display all sensors attached to the system regardless of their physical location on the network.
1.2.12	The GUI software shall display all sensors sequences created in the system.		The functionality needs to be verified by the BOO through Data Sheet.	The GUI software must display all sensors sequences created in the system.
1.2.13	The GUI software shall allow operators to control (pause/play,		The functionality needs to be verified by the BOO through	The GUI software must allow operators to control



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		skip forwards, skip backwards) camera sequences.	Data Sheet.	(pause/play, skip forwards, skip backwards) camera sequences.
1.2.14		The GUI software shall display all sensors, sequences and users in a logical tree	The functionality needs to be verified by the BOO through Data Sheet.	The GUI software must display all sensors, sequences and users in a logical tree
1.2.15		The GUI software operator shall be able to drag and drop a camera from a tree of available cameras into any video tile for live viewing.	The functionality needs to be verified by the BOO through Data Sheet.	The GUI software operator must be able to drag and drop a camera from a tree of available cameras into any video tile for live viewing.
1.2.16		The GUI software operator shall be able to view the sensors from a tree of available cameras into any video tile for live viewing.	The functionality needs to be verified by the BOO through Data Sheet.	The GUI software operator must be able to view the sensors from a tree of available cameras into any video tile for live viewing.
1.2.17		The GUI software shall support graphical site representation (map) functionality, where digital maps are used to represent the physical location of cameras and other devices throughout facility.	The functionality needs to be verified by the BOO through Data Sheet.	The GUI software must support graphical site representation (map) functionality, where digital maps are used to represent the physical location of cameras and other devices throughout facility.
1.2.18		The maps shall have the ability to contain hyperlinks to create a hierarchy of interlinked maps.	The functionality needs to be verified by the BOO through Data Sheet.	The maps must have the ability to contain hyperlinks to create a hierarchy of interlinked maps.
1.2.19		The GUI software operator shall be able to view the sensors from a map into a video tile for live viewing in the same browser without opening a new browser	The functionality needs to be verified by the BOO through Data Sheet.	The GUI software operator must be able to view the sensors from a map into a video tile for live viewing in the same browser without opening a new browser
1.2.20		The operator shall be able to click on an icon in a map to initiate PTZ camera preset, run PTZ pattern, view camera in an analog monitor or send an 1/0 stream	The functionality needs to be verified by the BOO through Data Sheet.	The operator must be able to click on an icon in a map to initiate PTZ camera preset, run PTZ pattern, view camera in an analog monitor or send an 1/0 stream
1.2.21		The GUI software shall support digital zoom on a fixed camera's live video streams	The functionality needs to be verified by the BOO through Data Sheet.	The GUI software must support digital zoom on a fixed camera's live video streams
1.2.22		The GUI software shall support	The functionality needs to be	The GUI software must



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
	digital zoom on a PTZ camera's live video streams.		verified by the BOO through Data Sheet.	support digital zoom on a PTZ camera's live video streams.
1.2.23	The operator shall be able to control Pan, Tilt and Zoom patterns of P/T/Z Camera		The functionality needs to be verified by the BOO through Data Sheet.	The operator must be able to control Pan, Tilt and Zoom patterns of P/T/Z Camera
1.2.24	The software shall be able to display video of cameras on 55 inch Large Format Display Monitors and Workstation Monitors.		The functionality needs to be verified by the BOO through Data Sheet.	The software must be able to display video of cameras on 55 inch Large Format Display Monitors and Workstation Monitors.
1.2.25	The software shall allow the control of display from the client PC.		The functionality needs to be verified by the BOO through Data Sheet.	The software must allow the control of display from the client PC.
1.2.26	The operator from the GUI software shall be able to decide the screen layout and also the cameras that shall be displayed on the monitors.		The functionality needs to be verified by the BOO through Data Sheet.	The operator from the GUI software must be able to decide the screen layout and also the cameras that shall be displayed on the monitors.
1.2.27	The software shall support multicasting.		The functionality needs to be verified by the BOO through Data Sheet.	The software must support multicasting.
1.2.28	It shall be possible to switch the screen layout in response to an alarm.		The functionality needs to be verified by the BOO through Data Sheet.	It must be possible to switch the screen layout in response to an alarm.
1.2.29	The GUI Software shall support text superimposing the title and date & time on the video		The functionality needs to be verified by the BOO through Data Sheet.	The GUI Software must support text superimposing the title and date & time on the video
<b>1.3</b>	<b>Video Recording Software</b>			
1.3.1	Software shall support recording of H.264/H.265 video streams. It shall support recording of video and audio for all the channels.		The functionality needs to be verified by the BOO through Data Sheet.	Software must support recording of H.264/H.265 video streams. It must support recording of video and audio for all the channels.
1.3.2	Software shall support triplex applications, recording, re-play and backup simultaneously. It shall be compatible with windows Server OS or Linux for highest performance and reliability.		The functionality needs to be verified by the BOO through Data Sheet.	Software must support triplex applications, recording, re-play and backup simultaneously. It must be compatible with windows Server OS or Linux for highest performance and reliability.
1.3.3	The software shall support absolute recording redundancy with X to N, N to X and N to N		The functionality needs to be verified by the BOO through Data Sheet.	The software must support absolute recording redundancy with X to N, N to X and N to N

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		redundancy configurations for recording servers. This feature shall be provided, if specified by purchaser.		to X and N to N redundancy configurations for recording servers. This feature must be provided, if specified by purchaser.
1.3.4		Software shall operate on open architecture and shall not require any proprietary hardware.	The functionality needs to be verified by the BOO through Data Sheet.	Software must operate on open architecture and must not require any proprietary hardware.
1.3.5		Software shall be able to record minimum 64 different video streams or more simultaneously. It shall be accessible from any client PC connected to the network.	The functionality needs to be verified by the BOO through Data Sheet.	Software must be able to record minimum 64 different video streams or more simultaneously. It must be accessible from any client PC connected to the network.
1.3.6		Software shall provide network time server function to ensure the synchronization of the video servers and the recordings	The functionality needs to be verified by the BOO through Data Sheet.	Software must provide network time server function to ensure the synchronization of the video servers and the recordings
1.3.7		The servers shall be connected to the network so that these can be placed at any location, which has network access. The software shall be able to receive alarms of different types from equipment to start a recording. These alarms can be motion detection, video loss, and unified picture and trigger input.	The functionality needs to be verified by the BOO through Data Sheet.	The servers must be connected to the network so that these can be placed at any location, which has network access. The software must be able to receive alarms of different types from equipment to start a recording. These alarms can be motion detection, video loss, unified picture and trigger input.
1.3.8		The software alarm recording shall support pre-and post-alarm periods. Both can be configured in duration.	The functionality needs to be verified by the BOO through Data Sheet.	The software alarm recording must support pre-and post-alarm periods. Both can be configured in duration.
1.3.9		The software shall provide a status of the available recording capacity.	The functionality needs to be verified by the BOO through Data Sheet.	The software must provide a status of the available recording capacity.
<b>1.3.10</b>	<b>Fault Tolerant Recording:</b>			
1.3.11		If software & server(s) operation are interrupted, like power disconnection and once the server(s) are restarted, these shall automatically resume recording of any cameras these were recording prior to the	The functionality needs to be verified by the BOO through Data Sheet.	If software & server(s) operation are interrupted, like power disconnection and once the server(s) are restarted, these shall automatically resume recording of any cameras

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		interruption.		these were recording prior to the interruption.
1.3.12		The software shall support network fault-tolerant recording such that if the network connection between a video management server and video recording server becomes unavailable, for example through cable breakage, network congestion or WLAN interruption, the system operation shall automatically recover when the connection is restored.	The functionality needs to be verified by the BOO through Data Sheet.	The software must support network fault-tolerant recording such that if the network connection between a video management server and video recording server becomes unavailable, for example through cable breakage, network congestion or WLAN interruption, the system operation shall automatically recover when the connection is restored.
<b>1.4</b>	<b>Search &amp; Export</b>			
1.4.1		It shall be possible to search for recordings in the software by camera, date and time. If a data and time is specified, playback shall commence from that date and time. It shall be possible to playback more than one camera simultaneously.	The functionality needs to be verified by the BOO through Data Sheet.	It must be possible to search for recordings in the software by camera, date and time. If a data and time is specified, playback shall commence from that date and time. It must be possible to playback more than one camera simultaneously.
1.4.2		The software shall be able to export sections of recordings to a separate Windows folder, which can then be written to CD-ROM, DVD-ROM or USB Flash Drives etc. to be played back at a location not connected to the network video management & recording network. The export process shall make available a player application, which can be provided with the exported video. Export shall be possible in Windows media player or any other media player compatible format. Simultaneous export of multiple cameras shall also be possible.	The functionality needs to be verified by the BOO through Data Sheet.	The software must be able to export sections of recordings to a separate Windows folder, which can then be written to CD-ROM, DVD-ROM or USB Flash Drives etc. to be played back at a location not connected to the network video management & recording network. The export process must make available a player application, which can be provided with the exported video. Export shall be possible in Windows media player or any other media player compatible format. Simultaneous export of



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
				multiple cameras shall also be possible.
1.4.3	The VMS should be able to integrate with IRIDISS and raise an alarm. It should support intelligent logics for entry-exit, entry-exitentry. It should also be able to detect multiple entry, false entry, division of intruders etc		The functionality needs to be verified by the BOO through Data Sheet.	The VMS must be able to integrate with IRIDIS and raise an alarm. It must support intelligent logics for entry-exit, entry-exitentry. It must also be able to detect multiple entry, false entry, division of intruders etc
1.4.4	VMS Should be able to integrate to unmanned ground sensors. This should be depicted on the live map with highlighting of zone of intrusion		The functionality needs to be verified by the BOO through Data Sheet.	VMS must be able to integrate to unmanned ground sensors. This must be depicted on the live map with highlighting of zone of intrusion
1.4.5	The VMS should be able to integrate with with exiting surveillance equipment. It should be able to highlight any movement of humans and vehicles under no light conditions and pop up alerts on the alert screen.		The functionality needs to be verified by the BOO through Data Sheet.	The VMS must be able to integrate with exiting surveillance equipment. It should be able to highlight any movement of humans and vehicles under no light conditions and pop up alerts on the alert screen
1.4.6	<p>The Command Control Software should be integrated to GIS Maps to support position of cameras with Lat/Long. In addition should be DMR ready to integrate the</p> <p>Police DMR sets for live display of location of policemen in the venue.</p>		The functionality needs to be verified by the BOO through Data Sheet.	<p>The Command Control Software must be integrated to GIS Maps to support position of cameras with Lat/Long. In</p> <p>addition must be DMR ready to integrate the Police DMR sets for live display of location of policemen in the venue.</p>
1.4.7	<b>Additional Feature</b>			
1.4.7.1	<p>The software should have an integrated Video Analytics to support following Features:</p> <p>i. Tripwire/Zone marking</p> <p>ii. Person moving in/out of an Area</p> <p>III. Un attended object Detection</p> <p>iv. Facial Recognition</p> <p>v. Person counting / Loitering /Tracking</p>		The functionality needs to be verified by the BOO through Data Sheet.	<p>The software must have an integrated Video Analytics to support following Features:</p> <p>i. Tripwire/Zone marking</p> <p>ii. Person moving in/out of an Area</p> <p>III. Un attended object Detection</p> <p>iv. Facial Recognition</p>



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
				v. Person counting / Loitering /Tracking
1.4.7.2	The VMS Software, Video Analytics should be a seamless integrated single software Platform.		The functionality needs to be verified by the BOO through Data Sheet.	The VMS Software, Video Analytics must be a seamless integrated single software Platform.
1.4.7.3	Software should be flexible, dynamic, distributed, reactive, real-time, scalable, expandable, redeploy able and shall have following characteristics:- i. Should be deployed on an IP based non-proprietary networks. ii. Leveraging existing infrastructure. iii. Automated policies, workflows and response plan. iv. Control monitor and maintain disparate networks v. Provide a single customized dash board interface which promotes situational awareness with control and monitoring vi. A place where different technology come together to create an efficient and operational requirements.		The functionality needs to be verified by the BOO through Data Sheet.	Software should be flexible, dynamic, distributed, reactive, real-time, scalable, expandable, redeploy able and shall have following characteristics:- i. Should be deployed on an IP based non-proprietary networks. ii. Leveraging existing infrastructure. iii. Automated policies, workflows and response plan. iv. Control monitor and maintain disparate networks v. Provide a single customized dash board interface which promotes situational awareness with control and monitoring vi. A place where different technology come together to create an efficient and operational requirements.
1.4.7.4	<b>Surveillance Integration Application:</b> - Real time display of surveillance feeds to the C&C Centre for OPS assessment by commanders. Software should cater for real time monitoring of surveillance sensors, display of surveillance feeds, archiving surveillance feeds, analysis of surveillance feeds and retrieval of feeds at any given time. Software should support display of feed in rugged Laptops/PDA allowing visualization of location surveillance video on map.		The functionality needs to be verified by the BOO through Data Sheet.	<b>Surveillance Integration Application:</b> - Real time display of surveillance feeds to the C&C Centre for OPS assessment by commanders. Software should cater for real time monitoring of surveillance sensors, display of surveillance feeds, archiving surveillance feeds, analysis of surveillance feeds and retrieval of feeds at any

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
		<p><b>ii.Video Management Software (VMS) Module :-</b> VMS shall offer centralized management of all devices, servers and users. VMS should manage, store, deliver and support encoding, distributing, managing and achieving. Video feed should allow recipients of the video to brings and play back the expected video without installing separate software on their computer. VMS should provide support for multi casting of video feeds to client work station in order to conserve network resource.</p> <p><b>iii.GIS Module:-</b> Software should have inbuilt integrated GIS module which shall give a multilayer visualization of area of interest with comprehensive view of deployment of sensors and surveillance devices.</p> <p><b>iv.Event Handling Module:-</b> System should be capable of handling various events with a time line view, integration with video/surveillance feed. Event handler shall be capable to provide detailed overview of incident to various concurrent users at a time.</p> <p><b>v.Data Visualizations Module :-</b> System should have functionality of simultaneously display on at least three screen included GIS, VMS and event logging screen.</p>		<p>given time. Software should support display of feed in rugged Laptops/PDA allowing visualization of location surveillance video on map.</p> <p><b>ii. Video Management Software (VMS) Module:-</b> VMS shall offer centralized management of all devices, servers and users. VMS should manage, store, deliver and support encoding, distributing, managing and achieving. Video feed should allow recipients of the video to brings and play back the expected video without installing separate software on their computer. VMS should provide support for multi casting of video feeds to client work station in order to conserve network resource.</p> <p><b>iii.GIS Module :-</b> Software should have inbuilt integrated GIS module which shall give a multilayer visualization of area of interest with comprehensive view of deployment of sensors and surveillance devices.</p> <p><b>iv.Event Handling Module :-</b> System should be capable of handling various events with a time line view, integration with video/surveillance feed. Event handler shall be capable to provide detailed overview of incident to various concurrent users at a time.</p> <p><b>v.Data Visualization Module :-</b> System should have functionality of</p>

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
				simultaneously display on at least three screen included GIS, VMS and event logging screen.
1.4.7.5	The software should have capability to incorporate the full open API/SDK of platform of any third party system and interface without keeping much dependency on OEM & vendor . It should interface various devices deployed seamlessly. User should be able to save data in GIS format with date and time stamping.		The functionality needs to be verified by the BOO through Data Sheet.	The software must have capability to incorporate the full open API/SDK of platform of any third party system and interface without keeping much dependency on OEM & VENDOR . It must interface various devices deployed seamlessly. User must be able to save data in GIS format with date and time stamping.
1.4.7.6	The system should be capable of interfacing with wireless (UHF\VHF) based IP communication network like DMR, Tetra etc.		The functionality needs to be verified by the BOO through Data Sheet.	The system must be capable of interfacing with wireless (UHF\VHF) based IP communication network like DMR, Tetra etc.
1.4.7.7	The software shall have feature and compatibility to use Artificial Intelligence (AI)			The software must have feature and compatibility to use Artificial Intelligence (AI).

#### 24. . Monitor 55" (Industrial grade) with wall mount

24.1	Native resolution (pixels)	<b>1920X1080 (full HD) or better</b>	Specification to be verified by the BOO through specification sheet.	Native resolution (pixels) must be as per the requirements mentioned in the QRs.
24.2	Screen type	Non touch	To be checked physically by BOO.	Screen type must be as per the requirements mentioned in the QRs.
24.3	Screen size (diagonal) minimum (cm)	<b>138 or better</b>	To be checked physically by BOO.	Screen size (diagonal) minimum (cm) must be as per the requirements mentioned in the QRs.
24.4	Aspect ratio	16:9	Specification to be verified by the BOO through specification sheet.	Aspect ratio must be as per the requirements mentioned in the QRs.
24.5	Duty cycle	24 x 7	Specification to be verified by the BOO through specification sheet.	Duty cycle must be as per the requirements mentioned in the QRs.
24.6	Technology	LED Backlit	Specification to be verified by the BOO through specification sheet.	Technology must be as per the requirements mentioned in the QRs.
24.7	Brightness (Nits) Minimum	<b>500 or better</b>	Specification to be verified by the BOO through specification sheet.	Brightness (Nits) minimum must be as per the requirements mentioned in the QRs.



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
24.8	On site OEM Warranty (Year)	<b>05 years</b>	Firm has to submit OEM certificate.	On site OEM warranty (year) must be as per the requirements mentioned in the QRs.
24.9	Panel technology	LED	Specification to be verified by the BOO through specification sheet.	Panel technology must be as per the requirements mentioned in the QRs.
24.10	Orientation	Portrait	Specification to be verified by the BOO through specification sheet.	Orientation must be as per the requirements mentioned in the QRs.
24.11	Arrangement of Speakers	Inbuilt	To be checked physically by BOO.	Arrangement of speakers must be as per the requirements mentioned in the QRs.
24.12	Bezel width (mm)	Less than 20 mm	To be checked physically by BOO.	Bezel width (mm) must be as per the requirements mentioned in the QRs.

**25. . 3C x 06 & 12 Sq mm CU ARM XLPE Insulated Cable**

25.1	Conductor Dia	06 Square mm or 12 square mm <b>(To be decided by the user department at the time of indent)</b>	To be checked physically by BOO.	Conductor dia must be as per requirements mentioned in the QRs.
25.2	Armour	Single layer of Galvanized Steel Round Wire according to IS-3975	Specification to be verified by the BOO through specification sheet.	Armour must be as per requirements mentioned in the QRs.
25.3	Packaging	Steel drum packaging, each having single length cable	To be checked physically by BOO.	Packaging must be as per requirements mentioned in the QRs.
25.4	Cable Type	A2XWY/ 2XWY	Specification to be verified by the BOO through specification sheet.	Cable type must be as per requirements mentioned in the QRs.
25.5	No. of Cores	3	Specification to be verified by the BOO through specification sheet.	Cores of the cable must be 03.
25.6	Voltage Level	1.1kV	To be checked physically by BOO.	Voltage level must be as per requirements mentioned in the QRs.
25.7	System Grounding	Solidly Grounded	Specification to be verified by the BOO through specification sheet.	System grounding must be as per requirements mentioned in the QRs.
25.8	Nominal System voltage	400V $\pm 10\%$	Specification to be verified by the BOO through specification sheet.	Nominal system voltage must be as per requirements mentioned in the QRs.
25.9	Nominal	50Hz $\pm 3\%$	Specification to be verified by	Nominal system frequency



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
	System Frequency		the BOO through specification sheet.	must be as per requirements mentioned in the QRs.
25.10	Temperature	1)Maximum conductor temp at rated current : 90° C ii) Maximum conductor temp at Short-circuit :250° C	Firm has to submit the OEM certificate.	Temperature must be as per requirements mentioned in the QRs.
25.11	Conductor Material	Electrolytic grade Copper, Purity > 99.97%	Firm has to submit the OEM certificate.	Conductor material must be as per requirements mentioned in the QRs.
25.12	Conductor type	Stranded with number of strands as per IS 8130 (Part-I) 1984	Firm has to submit the OEM certificate.	Conductor type must be as per requirements mentioned in the QRs.
25.13	Insulating material	Cross-Linked-Polyethylene (XLPE) Compound	Firm has to submit the OEM certificate.	Insulating material must be as per requirements mentioned in the QRs.
25.14	Core Identification Strips	Red, Black & Blue/ Green (for neutral)	Firm has to submit the OEM certificate.	Core identification must be as per requirements mentioned in the QRs.
25.15	Material of Inner Sheath	FRLS, PVC ST-2 Compound according to IS-5831	To be checked physically by BOO.	Material of inner sheath must be as per requirements mentioned in the QRs.
25.16	Outer Sheath	FRLS, PVC ST-2 Compound according to IS-5831	To be checked physically by BOO.	Outer sheath must be as per requirements mentioned in the QRs.

#### 26. . Rack Server (2CPU)

26.1	Form Factor	Rack	To be checked physically by BOO.	Form factor must be as per the requirement mentioned in the QRs.
26.2	Processor Make	Intel	Specification to be verified by BOO through specification sheet.	Processor make must be as per the requirement mentioned in the QRs.
26.3	Maximum number of sockets available on Chipset	2	Specification to be verified by BOO through specification sheet.	Sockets available on chipset must be as per the requirement mentioned in the QRs.
26.4	Maximum number of sockets populated with processor	2	Specification to be verified by BOO through specification sheet.	Sockets populated with processor must be as per the requirement mentioned in the QRs.
26.5	Number of	24 core	Specification to be verified by	Core per processor must

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
	core per processor		BOO through specification sheet.	be as per the requirement mentioned in the QRs.
26.6	Processor Configuration	<b>Intel Xeon Gold (2.10 GHz, 24 Cores, 36 MB/150 watt or better</b>	Specification to be verified by BOO through specification sheet.	Processor configuration must be as per the requirement mentioned in the QRs.
26.7	RAM size (GB)	<b>512 GB or better</b>	Specification to be verified by BOO through specification sheet.	RAM size (GB) must be as per the requirement mentioned in the QRs.
26.8	RAM upgraded upto (GB)	<b>1 TB or Higher</b>	Specification to be verified by BOO through specification sheet.	RAM upgraded upto (GB) must be as per the requirement mentioned in the QRs.
26.9	Type of Hard Disk Drive	<b>SSD / SAS In 20:80 ratio</b>	Specification to be verified by BOO through specification sheet.	Type Hard Disk Drive must be as per the requirement mentioned in the QRs.
26.10	Hard disk drive capacity (GB)	<b>5000 GB or above (both SSD &amp; SAS Mixed in 20:80 Ratio)</b>	Specification to be verified by BOO through specification sheet.	Hard disk drive capacity (GB) must be as per the requirement mentioned in the QRs.
26.11	On site OEM warranty	<b>5 Years</b>	Specification to be verified by BOO through specification sheet.	On site OEM warranty must be as per the requirement mentioned in the QRs.
26.12	Size	<b>SMART RACK</b>	Specification to be verified by BOO through specification sheet.	Size must be as per the requirement mentioned in the QRs.
<b>26.13</b>	<b>Availability of Co-processor</b>	<b>As requirement by the user.</b>	<b>Specification to be verified by BOO through specification sheet.</b>	<b>Co-processor must be available.</b>
26.14	Network card supported	1G (2 Nos) and 10G (2 Nos), SFP+ (Two or more )	Specification to be verified by BOO through specification sheet.	Network card supported must be as per the requirement mentioned in the QRs.
26.15	RAID Type	<b>RAID 5/6</b>	Specification to be verified by BOO through specification sheet.	RAID type must be as per the requirement mentioned in the QRs.
26.16	USB Port (version 2.0/3.0)	As Per OEM	Specification to be verified by BOO through specification sheet.	USB Port must be as per the requirement mentioned in the QRs.
26.17	FC HBA Dual port card	Yes	Specification to be verified by BOO through specification sheet.	FC HBA dual port card must be as per the requirement mentioned in the QRs.
26.18	FC HBA Dual port card speed	16 Gbps	Specification to be verified by BOO through specification sheet.	FC HBA dual port card speed must be as per the requirement mentioned in the QRs.

Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
				the QRs.
26.19	PCI Slot (express Gen 3.0 )	8	Specification to be verified by BOO through specification sheet.	PCI slot (express Gen 3.0) must be as per the requirement mentioned in the QRs.
26.20	DIMM SLOTS (Nos)	24	Specification to be verified by BOO through specification sheet.	DIMM slots (Nos) must be as per the requirement mentioned in the QRs.
26.21	Hard Disk (RPM)	<b>7200 RPM or higher</b>	Specification to be verified by BOO through specification sheet.	Hard Disk (RPM) must be as per the requirement mentioned in the QRs.
26.22	Total Nos of Port	6 (2 Nos of 1G, 2 Nos of 10 G and 02 Nos SFP)	Specification to be verified by BOO through specification sheet.	Ports must be as per the requirement mentioned in the QRs.
26.23	Redundant Power supply	Yes	Specification to be verified by BOO through specification sheet.	Redundant Power supply must be as per the requirement mentioned in the QRs.
26.24	Redundant Fan	Yes	Specification to be verified by BOO through specification sheet.	Redundant Fan must be as per the requirement mentioned in the QRs.

#### 27.. Computer (Work Station)

27.1	Processor Make	Intel	To be checked physically by BOO.	The processor must be of Intel.
27.2	Processor configuration	<b>Intel Xeon W-1350, 6 core, 12 MB cache, 4 GHz or better version</b>	To be checked physically by BOO.	The processor configuration must be as per the requirement mentioned in the QRs.
27.3	Type of graphics	Discrete	To be checked physically by BOO.	The type of graphics must be as per the requirement mentioned in the QRs.
27.4	<b>Graphic Card</b>	<b>Nvidia Quadro 2200 or RTX4000 Graphics with 8GB</b>	To be checked physically by BOO.	The graphic card must be as per the requirement mentioned in the QRs.
27.5	RAM	DDR4 Or higher	To be checked physically by BOO.	The RAM must be as per the requirement mentioned in the QRs.
27.6	RAM SIZE (GB)	32GB or higher	To be checked physically by BOO.	The RAM Size (GB) must be as per the requirement mentioned in the QRs.
27.7	RAM expandability (GB)	64 GB or higher	To be checked physically by BOO.	The RAM expandability must be as per the requirement mentioned in the QRs.
27.8	Type of Hard Drive-I	<b>SATA/SSD</b>	To be checked physically by BOO.	The type of Hard Drive-I must be as per the



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
				requirement mentioned in the QRs.
27.9	<b>Nos of hard drives-I</b>	<b>As per requirement.</b>	<b>To be checked physically by BOO.</b>	<b>Number of hard drives-I must be 1 or more</b>
27.10	Size of hard disk drive-I (GB)	<b>1 TB or Better</b>	To be checked physically by BOO.	Size of hard disk drive-I must be as per the requirement mentioned in the QRs.
27.11	Display Types	Non-Touch	To be checked physically by BOO.	The display types must be as per the requirement mentioned in the QRs.
27.12	Display Size (cm)	60.45cm or more	To be checked physically by BOO.	The display size must be as per the requirement mentioned in the QRs.
27.13	Display resolution	2560 x 1440 or higher	To be checked physically by BOO.	The display resolution must be as per the requirement mentioned in the QRs.
27.14	Type of Hard Drive-II	SATA	To be checked physically by BOO.	The type of hard drive-II must be as per the requirement mentioned in the QRs.
27.15	Nos of hard drives-II	1 or more	To be checked physically by BOO.	The Nos of hard drives-II must be as per the requirement mentioned in the QRs.
27.16	Size of hard disk drive-II (GB)	1 TB 7200 rpm SATA	To be checked physically by BOO.	Size of hard disk drive-II must be as per the requirement mentioned in the QRs.
27.17	Form Factor	Desktop	To be checked physically by BOO.	The form factor must be as per the requirement mentioned in the QRs.
27.18	No. of Processor	<b>01</b>	To be checked physically by BOO.	As per requirement.
27.19	Display (Antiglare, LED-backlit)	Monitor	To be checked physically by BOO.	The display (Antiglare, LED-backlit) must be as per the requirement mentioned in the QRs.
27.20	On site OEM warranty	<b>05 years Warranty</b>	To be checked physically by BOO.	On site OEM warranty must be as per the requirement.
27.21	Processor Generation	<b>11<sup>th</sup> or higher version</b>	To be checked physically by BOO.	Processor must be of 9 <sup>th</sup> generation
27.22	Networking Interface	Integrated bit N 10/100/1000	To be checked physically by BOO.	Networking interface must be as per the requirement mentioned in the QRs.
27.23	Operating Frequency	<b>3200 MHz or better</b>	To be checked physically by BOO.	Operating frequency must be as per the requirement mentioned in the QRs.
27.24	Number of	1 PCIe 3 x4 (x16)	To be checked physically by	PCIe slots must be as per



Srl/No.	Parameter	Specification	Trial procedure suggested for Board of Officers	Result expected/ desired
	PCIe slots Gen3(x16)	connector); 2 M.2 PCIe 3 x4; 1 PCIe Gen 3 x16; 2 PCIe 3 x1 (x4 open ended connector)	BOO.	the requirements mentioned in the QRs.



## **Contents**

<b>Sr. No</b>	<b>Appendix</b>	<b>Page No.</b>
1.	<b>APPENDIX – 1:</b> Proforma for Compliance Statement for Specification / QR & TDs: -	2
2.	<b>APPENDIX – 2:</b> Offer of Stores	3
3.	<b>APPENDIX – 3:</b> Details of Participating Firm	4
4.	<b>APPENDIX – 4:</b> Manufacturing Details of Indian OEM & System Integrator	7
5.	<b>APPENDIX – 5:</b> Service Centre and Workshop (After Sale Support) Details	10
6.	<b>APPENDIX – 6:</b> Performance (Supply) Statement for Previous 03 Years	11
7.	<b>APPENDIX – 7:</b> Bid Securing Declaration Certificate	12
8.	<b>APPENDIX – 8:</b> Price Schedule	13
9.	<b>APPENDIX – 9:</b> Electronic Clearing Service (Credit Clearing Payments)	17
10.	<b>APPENDIX – 10:</b> Certificate to be Signed by the Bidder	18
11.	<b>APPENDIX – 11:</b> Pre-Contract Integrity Pact	19
12.	<b>APPENDIX – 12:</b> Declaration & Undertaking by Micro & Small Scale Enterprises / Startup Companies	27
13.	<b>APPENDIX – 13:</b> Certificate Indicating Percentage of Local Content Requirement for Class-I Local Supplier and Class-II Local Supplier	29
14.	<b>APPENDIX – 14:</b> Certificate regarding compliance of Ministry of Finance, Department of Expenditure, Public Procurement Division Order No. F.NO. 6/18/2019-PPD dated 23.07.2020.	30
15.	<b>APPENDIX – 15:</b> Non – Disclosure Agreement	31
16.	<b>APPENDIX – 16:</b> Declaration in Respect of Conflict of Interest	34
17.	<b>APPENDIX – 17:</b> Check List for Bidders	36



## **APPENDIX – 1**

### **Proforma for Compliance Statement for Specification / QR & TDs: -**

- (a) Name of Item : Implementation of a Turnkey Project for providing Voice and Data Network over OFC with futuristic plan for Integration of Surveillance Equipments in the AOR for 08 Nos. IB Deployed Units Under FTR HQ JAMMU.
- (b) Brand of Item :
- (c) Company of Origin :
- (d) Make & Lot No. :
- (e) Bidders are requested to give Compliance of each Specification whether equipment being offered by them is complying with Specification or otherwise as per proforma below:-

Sr. No.	Technical Specification / Qualitative Requirements	Complied	Not Complied. If not complied attach deviation statement	Page No. in the Tech. literature attached / enclosed with tender which specifically confirms this

**Signature of Bidder**



## APPENDIX – 2

### OFFER OF STORES

Tender No., \_\_\_\_\_

<b>Full Name and Address:</b>  <b>Post Box No.:</b> <b>(It should be quoted in all communication to this office.)</b>	<b>Contractor's Telegraphic Address:</b>  <b>Telephone No(s): FAX</b> <b>No.:</b> <b>City Code used:</b> <b>E-mail Address.</b>
--	--

To,

Engineering Projects India Limited  
Core-3, SCOPE Complex, Lodhi Road  
New Delhi – 110003

Dear Sir,

1. I/We hereby offer to supply the stores detailed in the schedule hereto or such portion thereof as you may specify in the Acceptance of Tender at the price given in the said schedule and agree to hold this offer open till \_\_\_\_\_. I/We shall be bound by a communication of acceptance within the prescribed time.
2. I/We have understood the instructions of contract which will govern by Rules **contained in the GFR 2017, Manual of Ministry of Finance for procurement of goods 2017 & all orders issued by MHA, CVC and other relevant departments of Government of India from time to time** till date of issue of this tender, placed by the Central Purchase Organization of the Government of India", as amended up to date. I/We have also understood that **any special conditions attached to this invitation to tender will also form part of the conditions of contract and will supersede any corresponding general condition.**
3. The following pages have been added to and form part of this tender.
  - (a) \_\_\_\_\_
  - (b) \_\_\_\_\_
  - (c) \_\_\_\_\_
  - (d) \_\_\_\_\_

Yours faithfully

SIGNATURE OF WITNESS

Address:- \_\_\_\_\_

Dated:- \_\_\_\_\_

(Signature of Bidder)

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Dated: \_\_\_\_\_





## APPENDIX – 3

### DETAILS OF PARTICIPATING FIRM: \_\_\_\_\_

1.	(i)	Details of authorized Signatory of Participating Bidder :		
		(a) Name	:	
		(b) Address	:	
		(c) Email & website, if any	:	
		(d) Telephone & Fax No.	:	
	(ii)	Capacity in which filling the tender, Indian OEM / Distributor of Indian OEM / Indian System Integrator or PSU (Please specify if in any other category)	:	
2.	(i)	<b>As per TE clause, delivery period</b> accepted or not	:	
	(ii)	Monthly production capacity of tendered item.	:	
	(iii)	Payment Terms as per TE clause accepted or not	:	
	(iv)	Guarantee / Warranty as per TE clause accepted or not	:	
3.		Whether stores fully conforms to Tender Schedule Specifications in all respects.	:	
4.		State whether business dealings with you have been <b>banned</b> with Min./ Deptt. of Supply / Ministry of Home Affairs/ Any Central Government Ministry or Department / Any State Govt. ? If yes, then given the details otherwise upload the self-declaration certificate with technical bid.	:	
5.		GST Tax Assessment / Return Office Address	:	
6.		Income Tax Assessment / Return Office Address	:	
7.	i)	PAN Number	:	
	ii)	Income tax returns for the preceding three financial years	:	
8.		<b>After sales service centre</b> along with <b>Lab/Workshop</b> for periodical maintenance & repair in NCR Region.		
	(i)	Registration details with validity	:	
	(ii)	Location, building owned or leased	:	

	(iii)	Addresses with nearest Police Station	:	
	(iv)	Details must be filled in Appendix attached.	:	Yes / No
9		Details of <b>MOU / Authorization Certificate</b> with Indian OEM for tendered item for a period of minimum two years.		
	(i)	Name of OEM	:	
	(ii)	No. of items including tendered equipment for MOU / Authorization Certificate.	:	
	(iii)	Specific period and validity of MOU / Authorization Certificate.	:	
	(iv)	Warranty / Guarantee & Availability of spares, repairs & Price reasonability having ownership of liability by OEM for tendered equipment.	:	
10		Essential documents for distributor of Indian OEM. In case of Indian distributor of Indian OEM, then must produce <b>undertaking certificate</b> in accordance to Clause 1.1 of Chapter IV of Tender Enquiry.	:	Yes / No
11		Proforma invoice of OEM to system integrator.		
12		<b>Any criminal or civil case pending</b> against firm or owner of the firm (Furnish details thereof).		Yes / No
13		Do you agree to <b>sole arbitration</b> by Secretary, Ministry of Home Affairs or by other some other person appointed by him as provided in Clause 9.9.1 and 9.9.2 of Manual for procurement goods 2017, MOF (It should, however, be noted that an omission to answer the above question will be deemed as an acceptance of the clause.		
14.		For Partnership Firms state whether they are registered or not registered under Indian Partnership Act, 1932. Should the answer to this question by a Partnership firm be in the affirmative, please state further:		
	(a)	Whether the partnership agreement, authority to refer disputes concerning the business of the partnership to arbitration has been conferred on the partner who has signed the tender.		
	(b)	If the answer to (a) is in the negative, Whether there is any general power of attorney executed by all the partners of the firm authorizing the partner who has signed		



		the tender to refer dispute concerning business of the partnership to arbitration.		
	(c)	If the answer to either (a) or (b) is the affirmative, please furnish a copy of either the partnership agreement or the general power of attorney as the case may be		
<b>N.B. :-</b>				
	1.	Please attach to the tender a copy of either document on which reliance is placed for authority of partners on the partner signing the tender to refer dispute to arbitration. The copy should be attested by a Notary Public or its execution should be admitted by affidavit on a properly stamped paper by all the partners.		
	2.	Where authority to refer disputes to arbitration has not been given to the partner signing the tender, the tenders must be signed by every partner of the firm.		
15.	Here State specifically			
	(i)	<b>Whether the price tendered</b> by you is to the best of your knowledge and belief, not more than the price usually charged by you for stores of same nature/class or description to any private purchaser either foreign or as well as Govt. Purchaser. If not state the reasons thereof. If any, also indicate the <b>margin of difference</b> .		
	(ii)	In respect of indigenous items for which there is a controlled price fixed by law, the price quoted <b>shall not be higher than the controlled price</b> and if the price quoted exceeds the controlled price the reasons thereof should be stated.		

Signature of Bidder : \_\_\_\_\_

Name in Block letter : \_\_\_\_\_

Capacity in which tender signed : \_\_\_\_\_

Full Address : \_\_\_\_\_



## **APPENDIX – 4**

### MANUFACTURING DETAILS OF INDIAN OEM & SYSTEM INTEGRATOR

(To be compulsory filled by Indian OEM or their Authorized Distributor)

Tender No. & Date. \_\_\_\_\_ For the supply of \_\_\_\_\_

1.	Details of Manufacturer		
	(i)	Name	:
	(ii)	Office	:
		(a) Address	:
		(b) Telephone No.	:
		Landline	
		Mobile	
		(c) Fax	:
		(d) E-mail	:
	(iii)	Works / Factory / Lab	
		(a) Address	:
		(b) Telephone No.	:
		Landline	
		Mobile	
		(c) Fax	:
		(d) E-mail	:
2.	(i)	Manufacturer/OEM having their own premise must upload Documentary evidence for the same. Brief Details thereof	
	(ii)	In case you are having leased / rented premise For the manufacturing/ integration/ works, documentary evidence be uploaded. Brief details thereof.	
	(iii)	In case you do not own the factory but utilize the factory of some other firm for the manufacture/ fabrication of the stores for which you apply for registration on lease or other base you should upload a valid legal agreement that the factory of (Here indicate the name of the firm whose factory is being utilized) has been put at your disposals for the manufacture / fabrication of the stores for which registration has been applied for .	
3.	Brief description of factory / workshop / lab		
	(i)	Covered area & Open area	:
	(ii)	Whether area comes under Govt. authorized Industrial / commercial place for the same.	:



	(iii)	Power connection with load capacity and issued in the name of	:	
	(iv)	Functional departments of manufacturing/ works divided in to, details thereof)	:	
4.	<b>Details of Plant and machinery</b> erected and functioning in each department : -			
	(i)	Make & model of main machine	:	
	(ii)	Date of Purchase & commissioning	:	
	(iii)	Life of the Machine	:	
	(iv)	Details of subsidiary and associated machinery & equipment.	:	
5.	Details of Machine /equipment/laboratory for quality control		:	
6.	Details and stocks of raw material held (state whether imported or indigenous) against each item.		:	
7.	Production capacity of each item with existing plant & machinery			
	(i)	Normal	:	
	(ii)	Maximum	:	
8.	Details arrangement for quality control of products such as laboratory etc.		:	
9.	<b>Manpower</b>			
	(i)	Details of qualified Technical/Supervisory staff in-charge of production & quality control. Upload copies of CVs of these personnel with technical bid.	:	
	(ii)	Skilled labour employed	:	
	(iii)	Un-skilled labour employed	:	
	(iv)	Maximum no of workers (Skilled & unskilled)employed on any day during the 18 months preceding the date of application	:	
	(v)	Details of PF & ESI registration, available if any.	:	
10.	Whether stores were tested to any standard specification by National / International accredited Lab. If so, copies of original certificate should be submitted in triplicate.		:	
11.	Whether OEM having any <b>BIS (ISI Mark) / ISO</b> registration. If yes, give the details		:	

12.	<b>Industrial license</b> details. Upload the coy along with technical bid.	:	
13.	Give details & upload copy for following :-		
	(i) Whether MS (Micro Small Enterprises)	:	
	(ii) Whether medium or large sector Unit	:	
14.	<b>Constitution of the firm</b> (upload & furnish the details) : -		
	(i) Registration with under Indian Company Act 1956	:	
	(ii) Indian Partnership Act 1932	:	
	(iii) Indian Proprietary Firm Pvt. Ltd. Companies, LLC	:	
15.	<b>Ownership of firm</b> (Furnish the details of proprietor / partners / directors etc.)	:	
16.	<b>Local Content</b> If stores offered are manufactured in India, please state whether all the raw materials, components etc. used in their manufacture are also produced in India. If not, give details of materials components etc. that are imported and their breakup of the <b>indigenous components in percentage (%)</b> & Imported components in percentage (%).	:	
17.	<b><u>Declaration certificate :-</u></b>  Indian OEM & their authorized distributor and Indian System Integrator firm will provide all documentary declaration certificates which are mentioned in Clause 1.1 of Chapter IV respectively.	:	Yes / No

Place :

Signature of Bidder

Date :

DESIGNATION \_\_\_\_\_

COMPANY / FIRM \_\_\_\_\_



## APPENDIX – 5

### SERVICE CENTRE AND WORKSHOP (AFTER SALE SUPPORT) DETAILS

**(Essentially to be filled by all Bidders)**

1.	Name of the After Support Centre	:	
2.	Contact Details	:	
(i)	Address	:	
(ii)	Telephone No.	:	
(iii)	Fax	:	
(iv)	E-Mail & Website	:	
3.	Contact person, Mobile No. & Designation	:	
4.	Details of available Infrastructure	:	
5.	Accreditation of Service Centre & Workshop, if any.	:	
6.	Registration of <b>After sales service centre and Lab / Workshop</b> with MSME / NSIC or any other concerned Central Govt. agency.	:	
7.	Capability of Periodical maintenance and repair	:	
8.	Reserve stock of manufacturer recommended list of spares (MRLS).	:	
9.	Stock of Special Maintenance & Repair Tools (SMRT)	:	
10.	Qualified Technical personnel available with Service Centre & Workshop.	:	
11.	Past performance of the Service Centre & Workshop	:	
12.	ISO certification available, if any.	:	

**Signature of Bidder**



## **APPENDIX – 6**

### **PERFORMANCE (SUPPLY) STATEMENT FOR PREVIOUS 03 YEARS**

S/N	Order Placed by Whom, with Order No. & Date	Store	Qty	Value	Delivery Period	Remarks (To include Reasons for Delay/ Cancellation/ Complaints etc.)
1						
2						
3						
4						
5						

- Note :
- (i) Firms to submit performance report of tendered store, executed for the Govt. Organizations during the last three years.
  - (ii) Firms also to submit copy of Supply order (last three years) with Technical bid.
  - (iii) In case of distributor /dealer/agent, the past performance of OEM will also be considered.

**Signature of Bidder**





## **APPENDIX – 7**

Limited Tender Enquiry No.....

Dated .....

### **BID SECURING DECLARATION CERTIFICATE ( On Firm's letter head )**

To  
Engineering Projects India Limited  
Core-3, SCOPE Complex, Lodhi Road  
New Delhi – 110003

Sir,

Tender / GeM Bid No. \_\_\_\_\_ We, M/s  
\_\_\_\_\_ under take that if we withdraw or modify our bid during the  
period of validity, or we are awarded the contract and we fail to sign the contract, or to  
submit a performance security before the deadline defined in bids documents, we will  
be suspended for the period of **02 years** from being eligible to submit bids for contract  
with procuring entity i.e. **Engineering Projects India Limited**.

Yours Faithfully

(Signature of the Authorized Signatory of Bidder, with Official seal)



## (Price Bid to be submitted in sealed envelope (offline))

**Appendix – 8**

EOI No: EPI/CO/ITD/IT-DLI-DP/175/04/EOI Dated: 19.06.2025

**Name of Work:** Expression of Interest (EOI) for Pre-tender tie-up with Empanelled and Other Agencies for Implementation of a Turnkey Project for providing Voice and Data Network over OFC with futuristic plan for Integration of Surveillance Equipment on 08 Nos. IB deployed Units under BSF Frontier HQ Jammu.

**Bidder Name :**

### PRICE SCHEDULE

(This BOQ template must not be modified / replaced by the bidder and the same should be submitted in sealed envelope after filling the relevent columns, else the bidder is liable to be rejected for this tender)

Sl. No.	Item Description	Quantity	Units	Basic Price Per Unit in INR	GST per unit in INR	Custom Duty (CD) if any in Rs.	Price for free delivery to consignee basis (in INR)	Any Other leviable Taxes/Charges / Sub charges per unit in Rs.	Net Price Per Unit including all Taxes in Rs	TOTAL AMOUNT Without Taxes	TOTAL AMOUNT With Taxes	TOTAL AMOUNT In Words
1	2:4 Power PLC splitter (2:4 Optical power splitter)	80	Nos						0.00	0.00	0.00	INR Zero Only
2	2:8 Power PLC splitter (2:8 Optical power splitter)	94	Mtr						0.00	0.00	0.00	INR Zero Only
3	12 Core single mode Optical Fibre (Cable)	394000	Mtr						0.00	0.00	0.00	INR Zero Only
4	HDPE pipe for laying of OFC	394000	Mtr						0.00	0.00	0.00	INR Zero Only
5	24 Port fiber LIU fully loaded with single mode SC adaptor, Adopter plate and pigtail	538	Nos						0.00	0.00	0.00	INR Zero Only
6	SC-LC Fiber duplex patch cord	112	Nos						0.00	0.00	0.00	INR Zero Only
7	LC-LC Fiber duplex patch cord	32	Nos						0.00	0.00	0.00	INR Zero Only
8	SC-SC Fiber duplex patch cord	1528	Nos						0.00	0.00	0.00	INR Zero Only

9	UTP cat 6 patch cord 3 meter (CAT-6 Patch cord 3 Mtr)	780	Nos						0.00	0.00	0.00	INR Zero Only
10	Layer 3 managed switch Industrial grade with 4 SFP enabled and 24 port	50	Nos						0.00	0.00	0.00	INR Zero Only
11	IP 66 termination box for fiber termination and 8 port industrial switch	538	Nos						0.00	0.00	0.00	INR Zero Only
12	19 inches 9U network rack	66	Nos						0.00	0.00	0.00	INR Zero Only
13	19 inches 42 U network rack	8	Nos						0.00	0.00	0.00	INR Zero Only
14	Network Video recorder (NVR) 32 port with 16 TB HDD	48	Nos						0.00	0.00	0.00	INR Zero Only
15	Layer 2 managed switch Industrial grade with 2 SFP enabled and 8 Port POE	450	Nos						0.00	0.00	0.00	INR Zero Only
16	Layer 2 managed switch industrial grade with 2 SFP enabled and 8 Port	30	Nos						0.00	0.00	0.00	INR Zero Only
17	GPON 8 Port OLT	8	Nos						0.00	0.00	0.00	INR Zero Only
18	EMS software for managing GPON equipment	8	Nos						0.00	0.00	0.00	INR Zero Only
19	Monitor 55" (Industrial grade with wall mount)	74	Nos						0.00	0.00	0.00	INR Zero Only
20	Rack server (12 CPU)	8	Nos						0.00	0.00	0.00	INR Zero Only
21	Work station computer	74	Nos						0.00	0.00	0.00	INR Zero Only
22	3 KVA online UPS (With 60 Min Back up)	74	Nos						0.00	0.00	0.00	INR Zero Only
23	1 KVA offline UPS (with cabin with 120 Min backup)	640	Nos						0.00	0.00	0.00	INR Zero Only
24	GI Earthing	96	Nos						0.00	0.00	0.00	INR Zero Only



25	3.5 x 35 SQ mm aluminum armored cable for connection from Border track to mount/ FDP including laying as per CPWD specification	59500	Mtrs						0.00	0.00	0.00	INR Zero Only
26	3 core x 4 SQ mm copper wire for connection or wiring (for short distance below 50 Mtr)	31200	Mtrs						0.00	0.00	0.00	INR Zero Only
27	3 core x 2.5 SQ mm copper wire for connection or wiring (for short distance below 50 Mtr)	7800	Mtrs						0.00	0.00	0.00	INR Zero Only
28	3 phase aluminum bus bar on wall of FDP/ Mount from 63 amp to 100 amp	312	Nos						0.00	0.00	0.00	INR Zero Only
29	Joint Box	312	Nos						0.00	0.00	0.00	INR Zero Only
30	6 / 5 amp 2 switch + 2 socket box	624	Nos						0.00	0.00	0.00	INR Zero Only
31	15/ 16 amp 1 switch + 1 socket box	624	Nos						0.00	0.00	0.00	INR Zero Only
32	DP MCB	312	Nos						0.00	0.00	0.00	INR Zero Only
33	Lying of underground OFC cable for depth of 65 Cms	1	Mtr						0.00	0.00	0.00	INR Zero Only
34	Installation & Commissioning Charges	1	Nos						0.00	0.00	0.00	INR Zero Only
<b>Total in Figures</b>										<b>0.00</b>	<b>0.00</b>	INR Zero Only
<b>Quoted Rate in Words</b>		<b>INR Zero Only</b>										





Note	
a)	Bidders are requested to read the instructions carefully before filling the Price Bid Proforma.
b)	The complete commercial quote should be in Indian Rupees (INR).
c)	<p>Bidders are required to indicate Basic Prices, Custom Duty, GST and any other leviable taxes/charges separately within the Performa for Price Bid. Taxes/duties/charges reflected outside the Performa will not be accepted. Bidder must attach copies of Govt. Notification in support of all applicable Taxes/ duties/ charges quoted in the offer.</p> <p><b>The firm has to mention prevailing custom duty/ other taxes in the proforma along with price bid and must attach copy of Govt. notification in this regard. If Custom Duty/ any other taxes is quoted/ reflected as "Nil" or "Zero" under relevant column of Price Bid, no Custom Duty Exemption Certificate (CDEC) / any other tax exemption will be granted. Subsequently upon placement of Supply Order, no further request will be entertained in this regard. Final payment would be made only on production of other tax clearance.</b></p>
d)	Other Statutory Taxes will be applicable at actuals, if admissible.
e)	Bidder will attach justification of price quoted. This also includes the recently executed contracts of the store in question with Govt/ Semi Govt. organization etc. All the documents should be provided in pdf format.
f)	Firm will provide consumables & spares free of cost during demonstration/ Trial and training.
g)	Rates quoted in BOQ sheet would be considered for deciding L-1. L-1 will be decided on the final value (total amount with taxes) i.e. the item would cost to EPIL. Rates will be compared by taking account inclusive of all Taxes & Duties to decide L-1. <b>Spares parts (MRLS) rates will not be considered for deciding L-1 and the same are not binding on the purchaser.</b>
h)	No column should be left blank. Wherever amount is not quoted, the column should be filled with basic rate i.e 00.00.
i)	The decision / interpretation of EPIL shall be final in all respect.

**Signature of Bidder**



## **APPENDIX – 9**

### **ELECTRONIC CLEARING SERVICE (CREDIT CLEARING PAYMENTS)**

#### **A. DETAILS OF ACCOUNT HOLDER-**

Name of account holder	
Complete contact address	
Telephone number/Fax/E-mail	

#### **B. BANK ACCOUNT DETAILS**

Bank name	
Branch name with complete address, telephone number and E-mail	
Whether the branch is computerized?	
Whether the branch is RTGS enabled? If yes, then what is the branch's IFSC code?	
Is the branch also NEFT enabled?	
Type of bank account (SB/current/cash credit)	
Complete bank account number (new)	
MICR code of bank	
Name & address of the beneficiary/ payee	
IFSC (Indian financial system) code	

#### **C. DATE OF EFFECT-**

I hereby declare that the particulars given above are correct and complete. If the transaction is delayed, or not effected at all for reasons of Incomplete or Incorrect Information, I would not hold the user Institution responsible. I have read the option Invitation letter and agree to discharge responsibility expected of me as a participant under the Scheme.

Date: ( ..... )  
Signature of Customer

Certified that the particulars furnished above are correct as per our records.

(Bank's Stamp)

Date: ( ..... )  
Signature of the Authorized Official from the Bank

1. Please attach a photocopy of Cheque along with the verification obtained from the Bank.
2. In case your Bank Branch is presently not "RTGS enabled", then upon its up gradation to "RTGS Enabled" branch, please submit the information again in the above Proforma to the Department at the earliest.



## **APPENDIX – 10**

### **CERTIFICATE TO BE SIGNED BY THE BIDDER**

#### **DECLARATION CERTIFICATE**

It is certified that I/We have read over and understood all instructions contained in tender enquiry and its schedule along with policy matter given in Rules of **contained in the GFR 2017, Manual of Ministry of Finance for procurement of goods 2017 & all orders issued by MHA**, CVC and other relevant departments of Government of India from time to time till date of issue of this tender, placed by the Central Purchase Organization of the Government of India", as amended up to date. I/We have also understood that any special conditions attached to this invitation to tender will also form part of the conditions of contract and will supersede any general condition.

2. It is declared that all Appendix and forms given in Chapter IX and all other required documents are properly filled stamped and signed as correct and updated in best knowledge of bidder. This will be in support of bidder's eligibility, qualification and responsiveness of their bid.

3. **It is declared that all requisite Appendix, questionnaire and format given in RFQ Documents are duly signed, stamped and uploaded on CPP portal well before last date and time.**

4. Bidder is responsible for the correctness of the information filled in the Bid documents and shall be responsible for legal course of action in case of any mischief, incorrect, misleading fact or declaration found in their technical bid and other relevant documents. In that case they would also be liable for suspension of business, debar from participation in BSF along with other CAPF (MHA) tender.

Signature of Bidder ::

Name in block letters ::

Name of firm ::

Full address ::

Telephone No ::

Mobile No ::

Fax No. ::

Email ID ::

Website



## **APPENDIX – 11**

### **PRE- CONTRACT INTEGRITY PACT**

#### **GENERAL**

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on \_\_\_ day of the month of 20\_\_\_, between, on one hand, the President of India acting through Shri \_\_\_\_\_, Designation of the officer, Ministry / Department, Government of India (hereinafter called the "BUYER", which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s \_\_\_\_\_ represented by Shri ----- Chief Executive Officer (hereinafter called the "BIDDER/Seller" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the BUYER proposes to Implementation of a Turnkey Project for providing Voice and Data Network over OFC with futuristic plan for Integration of Surveillance Equipments on 08 Nos IB Deployed Units Under FTR HQ Jammu and the BIDDER / Seller is willing to offer / has offered the stores and

WHEREAS the BIDDER is a private company / public company / Government undertaking / partnership / registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is a Ministry / Department of the Government of India / PSU performing its functions on behalf of the President of India.

#### **NOW, THEREFORE**

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to: -

Enabling the BUYER to obtain the desired said stores/equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows: -





### **Commitments of the Buyer**

1.1 The Buyer undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.

1.2 The BUYER will, during the pre-contract stage, treat all BIDDERS alike, and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that Particular BIDDER in comparison to other BIDDERS.

1.3 All the officials of the BUYER will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

2. In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the BUYER with full and verifiable facts and the same is prima facie found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the BUYER the proceedings under the contract would not be stalled.

### **COMMITMENTS OF BIDDERS**

3. The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post- contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following: -

3.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

3.2 The BIDDER further undertakes that .it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, .any material or



immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favour or disfavor to any person in relation to the contract or any other contract with the Government.

3.3\* BIDDERS shall disclose the name and address of agents and representatives and Indian BIDDERS shall disclose their foreign principals or associates.

3.4\* BIDDERS shall disclose the payments to be made by them to agents / brokers or any other intermediary, in connection with this bid / contract.

3.5\* The BIDDER further confirms and declares to the BUYER that the BIDDER is the OEM or authorized dealer / agent / distributor of the stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

3.6 The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

3.7 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.

3.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

3.9 The BIDDER shall not use improperly, for purpose of competition or personal gain, or pass on to others, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.



3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

3.12 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an officer of the BUYER has financial interest / stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filing of tender.

The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act 1956.

3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

#### **4. Previous Transgression**

4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.

4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

#### **5. Bid Securing Declaration and PSD**

5.1 While submitting commercial bid, the BIDDER shall submit Bid Securing Declaration in the Company/Firm's letter head and **Performance Security Deposit @ 5% of the contract / order value within 14 days of award of contract** with the BUYER in the shape of Account Payee Demand Draft, Fixed Deposit Receipt from a Commercial bank, Bank Guarantee from a Commercial bank or online payment in an acceptable form safeguarding the purchaser's interest in all respects.

5.2 The Performance Security Deposit shall be valid up to 60 days after the expiry of the Guarantee/ Warranty period or the complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and the BUYER including warranty period, whichever is later.



5.3 In case of the successful BIDDER, Provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this pact.

5.4 No interest shall be payable by the BUYER to the BIDDER on Security Deposit for the period of currency.

## 6. **Sanctions for Violations**

6.1 Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions, wherever required: -

(i) To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.

(ii) The Security Deposit / Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason thereof.

(iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.

(iv) To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.

(v) To encash the advance bank guarantee and performance bond / warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the BUYER, along with interest.

(vi) To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation / rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

(vii) To debar the BIDDER from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the BUYER.





(viii) To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.

(ix) In cases where irrevocable Letters. of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.

(x) Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

6.2 The BUYER will be entitled to take all or any of the actions mentioned at Para 6.1 (i) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal Code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the BUYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purpose of this Pact.

## 7. **Fall Clause**

7.1 The BIDDER undertakes that it has not supplied / is not supplying similar product / systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry / Department of the Government of India or PSU and if it is found at any stage that similar product / systems or sub systems was supplied by the BIDDER to any other Ministry / Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

## 8. **Independent Monitors**

8.1 The BUYER has appointed independent Monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission. Names and Addresses of the Monitors is as under: -

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Mobile: \_\_\_\_\_

Telephone: \_\_\_\_\_

E-Mail: \_\_\_\_\_



8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

8.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

8.4 Both the parties accept that the Monitors have right to access all the documents relating to the project / procurement, including minutes of meeting.

8.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER.

8.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER / Subcontractor(s) with confidentiality.

8.7 The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

8.8 The Monitor will submit a written report to the designated Authority of BUYER / Secretary in the Department / within 8 to 10 weeks from the date of reference or intimation to him by the BUYER / BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

## **9. Facilitation of Investigation**

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

## **10. Law and Place of Jurisdiction**

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

## **11. Other Legal Actions**



The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

## 12. **Validity**

12.1 The validity of this Integrity Pact shall be from date of its **signing** and extend upto 5 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER / Seller, including warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

12.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

The parties hereby sign this Integrity Pact at \_\_\_\_\_ on \_\_\_\_\_

BUYER

BIDDER

(Rajeev Kumar Pandey)  
Head – SBU – 1

CHIEF EXECUTIVE OFFICER

For and on behalf of President of India

Witness

1. \_\_\_\_\_  
2. \_\_\_\_\_

Witness

1. \_\_\_\_\_  
2. \_\_\_\_\_

## **APPENDIX – 12**

(To be in the company letter head)

### **DECLARATION & UNDERTAKING BY MICRO & SMALL SCALE ENTERPRISES / STARTUP COMPANIES**

Sl. No	Particulars	Details
1	Is your organization Proprietary / Partnership / Private Limited Companies / Public Limited Company /Others	
2	Does your organization belong to Micro / Small / Medium scale Industry / Start-ups / others (Please tick mark appropriate box. If bidder is Start-up & MSE, then please tick mark both)	<input type="radio"/> Micro <input type="radio"/> Small Scale <input type="radio"/> Medium <input type="radio"/> Start-up Company <input type="radio"/> Others
3	Whether Manufacturer for the tendered items (supply) / Service Provider for the tendered services as per MSE certification. (Please tick mark the appropriate).	<input type="radio"/> Manufacturer for supply items <input type="radio"/> Service Provider for services <input type="radio"/> Trader/reseller/authorized agent /distributor <input type="radio"/> Non MSE Bidder
4	In Case you belong to Micro / Small / Medium Scale Enterprises whether you are registered under SC / ST Category (Please mark the appropriate)	<input type="radio"/> Yes <input type="radio"/> No If yes, <input type="radio"/> SC <input type="radio"/> ST
5	In case you belong to Micro / Small / Medium Scale category whether MSE firm owner by women.	<input type="radio"/> Yes <input type="radio"/> No

#### **A) CATEGORISATION OF MSE/SC-ST VENDORS**

1. In case of Micro / Small /Medium scale Enterprises, kindly attach Registration Certificate issued by DIC/KVIC/KVIB/Coir Board/ NSIC/Directorate of Handicrafts and Handlooms, or any other body specified by MSME for authentication such as Udyog Aadhaar Memorandum/Acknowledgement.
2. SC/ST entrepreneurs registered under MSEs need to submit valid documentary evidence.
3. MSEs owned by women.

#### **B) CATEGORISATION OF START-UP COMPANIES**

Bidder who intends to participate as "Start-up" company should also enclose the Certificate of Recognition issued by Department of Industrial Policy and Promotion, Ministry of Commerce & Industry, Govt. of India.

#### **C) DECLARATION IN CASE OF MSE BIDDERS / START-UP COMPANIES.**

In terms of Tender Conditions applicable for Micro & Small Enterprises (MSEs)/ Start-ups, we hereby declare as under -





- a) We are a Micro / Small Enterprise, as on bid closing date of this tender.
- b) We are a Manufacturer of the quoted supply item(s) / service provider for quoted services and valid documentary evidence for same is submitted.
- c) MSE certificate submitted by us is authentic & valid as on bid closing date of this tender.
- d) We are a 'Start-up' company and we are enclosing copy of certificate of recognition issued by Department of Industrial Policy and Promotion, Ministry of Commerce & Industry, Govt. of India.

We declare the above details are true. In case any of the details are found to be false/ untrue, our offer will be liable for rejection / cancellation of order / subjected to appropriate actions as per tender Terms & Conditions

Authorized Signatory  
(With Company Seal & Signature)



**APPENDIX – 13**

**CERTIFICATE INDICATING PERCENTAGE OF LOCAL CONTENT REQUIREMENT FOR  
CLASS-I LOCAL SUPPLIER AND CLASS-II LOCAL SUPPLIER**

Tender No. \_\_\_\_\_ date \_\_\_\_\_ for supply of \_\_\_\_\_

<b>S/No</b>	<b>Details</b>	
(i)	Type of Supplier (Class-1 local supplier or Class -II Local supplier	
(ii)	Percentage of local content	
(iii)	Self-Certification less than Rs.10 Crore. Above Rs.10 Crore, enclose a certificate from the Statutory auditor or cost Auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of other than companies)	
(iv)	Location(s) at which the local value addition	
(v)	Debarment for violation of Ministry of Commerce and Industry, Department for Promotion of Industry and Internal Trade (Public Procurement Section) order dated 04/06/2020.	

Signature of Bidder:

Name in block letters:

Name of firm:

Full address:



**APPENDIX - 14**

**(To be in the Company letter head)**

**Certificate regarding compliance of Ministry of Finance, Department of Expenditure, Public Procurement Division Order No. F.NO. 6/18/2019-PPD dated 23.07.2020.**

I certified that Engineering Projects (India) Ltd. (Name of the firm) is not covered by the definition of the bidder as mentioned in **Annexure-III of MOF order No. 6/18/2019-PPD dated 23.07.2020** and is thus not required to be registered with the Competent Authority for this purpose.

OR

I certify that Engineering Projects (India) Ltd. (Name of the firm) comes within the ambit of clauses mentioned in **Annexure-III of MOF order No. 6/18/2019-PPD dated 23.07.2020** and for this purpose, it is registered with the Competent Authority. Valid registration certificate no. ....dated .....issued by .....is enclosed.  
(Strike off the portion not applicable).

Signature of Bidder : \_\_\_\_\_

Name in block letters : \_\_\_\_\_

Name of firm : \_\_\_\_\_

Full Address : \_\_\_\_\_



## **APPENDIX – 15**

### **NON – DISCLOSURE AGREEMENT**

(To be signed by Recipients/ SIs before obtaining tender documents)

(Refer: Tender Enquiry No. \_\_\_\_\_ dated \_\_\_\_\_ )

[The Non-disclosure Agreement needs to be signed by a person duly authorised by the Recipient/ SI. A copy of the authorisation by the Recipient/ SI (copy of Board Resolution or Power of Attorney) should be provided along with the Non-Disclosure Agreement]

**[Non-Disclosure Agreement to be submitted on duly notarized stamp paper of Rs.100]**

This AGREEMENT (hereinafter called “Agreement” is made on the \_\_\_\_\_ day of the month of \_\_\_\_\_, \_\_\_\_\_ between, **Engineering Projects India Limited CORE -3, SCOPE Complex, Lodhi Road, New Delhi – 110003**, on the one hand, (hereinafter called the “Disclosing Party/Purchaser”) and, on the other hand, [\_\_\_\_\_] Name of the Recipient] (hereinafter called the “Recipient” / “SI”) having its registered office at [\_\_\_\_\_] (Address].

#### **WHEREAS**

1. The disclosing Party/ Purchaser has issued a public notice inviting various organizations for **“Implementation of a Turnkey Project for providing voice and Data Network over OFC with futuristic plan for Integration of Surveillance Equipment’s on 08 Nos. IB Deployed Units Under FTR HQ Jammu”**. (hereinafter called the “Project”) of the Disclosing Party/Purchaser,
2. The Recipient/ SI having represented to the "Disclosing Party"/ "Purchaser" that it is interested to bid for the proposed Project;

The Disclosing Party / Purchaser and the recipient /SI agree as follows:

1. In connection with the "Project", the Disclosing Party/ Purchaser agrees to provide to the Recipient/ SI a Document related to Turnkey Jammu Project vide the request for Proposal contains details and information of the Purchaser operations that are considered confidential.
2. The Agreement shall apply to all information relating to the project disclosed by the Disclosing Party/ Purchaser to the Recipient/ SI under this Agreement.
3. This Agreement shall benefit and be binding upon the Disclosing Party/ Purchaser and the Recipient/ SI and their respective subsidiaries, affiliates, successors and assigns.
4. The Recipient/ SI to whom this information is disclosed shall:
  - a) Hold such information in confidence with the same degree of care with which the Recipient/ SI protects its own confidential and proprietary information;



- b) Restrict disclosure of the information solely to its employees, agents and contractors with a need to know such information and advise those persons of their obligations here under with respect of such information;
  - c) Use the information only as needed for the purpose of bidding for the Project;
  - d) Except for the purpose of bidding for the project, the Recipient / SI shall not copy or otherwise duplicate such information or knowingly allow anyone else to copy or otherwise duplicate such information; and
  - e) Undertake to document the number of copies it makes on completion of the bidding process and in case unsuccessful, promptly return to the Disclosing Party/ Purchaser, all information in a tangible form or certify to the Disclosing Party/ Purchaser that it has destroyed such information.
5. **Third Party Information:** Recipient/ SI shall not communicate any information, in violation of the proprietary rights, to any third party.
6. **Return of Materials:** Any materials or documents of Disclosing Party/ Purchaser which are furnished to Recipient/SI, and all copies thereof, at the earlier of Disclosing Party's request for return of the materials, or the termination of the business relationship between the Disclosing Party and Recipient, at the disclosing Party's/ Purchaser's Option, will either be promptly returned to the Disclosing Party/ Purchaser.
7. **No License:** The confidential information shall remain the sole property of the Disclosing Party/ Purchaser. No license is granted to Recipient/ SI under any patents, copyrights, mask work rights or other proprietary rights by the disclosure of any information hereunder, nor is any warrant made as to such information.
8. **Remedies:** Recipient/SI understands and agrees that the disclosing party/ purchaser is providing the Confidential Information to Recipient in reliance upon this Agreement, and Recipient/ SI will be fully responsible to the Disclosing Party/ Purchaser for any damages or harm caused to the Disclosing Party/ Purchaser by a breach of this Agreement by Recipient/ SI or any of its officers, directors, employees or consultants. Recipient acknowledges and agrees that a breach of any of its promises or agreements contained herein will result in irreparable injury to the Disclosing Party/ Purchaser for which there will be no adequate remedy at law, and the Disclosing Party/ Purchaser shall be entitled to apply for equitable relief, including injunction and specific performance, in the event of any breach or threatened breach or intended breach of this Agreement by Recipient/ SI, such remedies, however, shall not be deemed to be the exclusive remedies for any breach of the Agreement but shall be in addition to all other remedies available at law or in equity.
9. **Termination & Survival:** This Agreement will become effective as of the date first mentioned herein above and will continue to be in force till the completion of Bid thereafter. Recipient's / SIs obligations under this Agreement with respect to Confidential Information it has received shall continue for a period of two (2) years after such disclosure.
10. **Attorneys' Fees, Jurisdiction/ Venue:** In the event of any litigation or other legal proceedings between the parties, the prevailing party shall be entitled to reasonable attorneys' fees and all costs of proceedings incurred in enforcing this agreement. The



courts in New Delhi, India shall have exclusive jurisdiction to try and dispose of any proceedings arising out of this Agreement. The laws of the Union of India shall govern the validity, interpretation and performance of this Agreement.

11. **General** : This Agreement sets forth the entire understanding and agreement of the parties with respect to the subject matter hereof and supersedes all other oral or written representations and understandings. This Agreement may be amended or modified only in writing signed by authorized representatives of the parties thereto.

Note : \_\_\_\_\_

For and on behalf of the Recipient/ SI

For and on behalf of the Recipient/ SI

\_\_\_\_\_  
(Signature with Company Seal)

\_\_\_\_\_  
(Signature with Company Seal)

Name :  
Designation :  
Contact Details:

Name :  
Designation :  
Contact Details:

## **APPENDIX – 16**

### **DECLARATION IN RESPECT OF CONFLICT OF INTEREST**

1)	Name of firm	Office address of firm, Phone No., Fax No. & Email ID	Firm works address as per vendor Registration, Phone No., Fax No., Email ID	Type of Firm (Sole Proprietorship / Partnership / Limited Liability Partnership / Private Limited Company / Public Limited Company)	CIN / LLPIN of firm	GST Registration No of the firm
	(1)	(2)	(3)	(4)	(5)	(6)
2)	Name of all Owner (s) / Director (s) of firm	Father's/ Husband's name of all Owners / Director(s)	DIN	Full residential Address	Aadhar Card of owner / Director(s) of firm be attached	Udyam Registration Certificate No., attach a copy
	(1)	(2)	(3)	(4)	(5)	(6)

- 3) **WE HEREBY DECLARE AND CONFIRM THAT** no bid has been submitted for the quoted item by any other Private Limited or Public Limited Company or Limited Liability Partnership (LLP) or Partnership Firm or Proprietor Firm in which any relative of any Director or Partner or Proprietor of Bidder Firm is Director, Partner or Proprietor. The work "relative" is defined as under: -

The companies Act, 2013 Sec 2(77) "relative" & "MOF Manual for Procurement of Goods (Para 5.1.4) with reference to any person, means anyone who is related to another, if: -

- (i) they are member of a Hindu Undivided Family"



- (ii) they are husband and wife " or
- (iii) One person is related to the other in such manner as prescribed below:-
- a) Mother including step-mother
  - b) Son including step-father
  - c) Son's wife
  - d) Daughter
  - e) Daughter' Husband
  - f) Brother including step-brother
  - g) Sister including step-sister

- 4) **WE FURTHER DECLARE THAT** we have carefully read and understood the clause relating to "Conflict of Interest" of Tender No. \_\_\_\_\_ Dated: \_\_\_\_\_
- 5) We hereby certify that our firm M/s \_\_\_\_\_ (firm name) do not have any Conflict of Interest with other bidders for particular quoted item viz \_\_\_\_\_ (Item name) We hereby declare and confirm that the above information and particulars are true and correct.

For \_\_\_\_\_ (firm name)

Signature of Director / Partner / Proprietor / Authorized Signatory

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

(With official Stamp)

Place:

Date:



## APPENDIX – 17

### CHECK LIST FOR BIDDERS

Before submission / uploading of Bid documents, Bidders should check they have complied with the following requirements: -

S. No.	Requirements to be checked before submission of the tender	Complied (Please indicate YES or NO)	Indicate Page No.
1.	Bid Securing Declaration has been enclosed.		
2.	If registered with NSI/ DIC/ KVIC/ MSME Udhdyog Aadhar and copies of valid registration certificate uploaded.		
3.	If an SSI / MSE (Micro Small Enterprises), it has been mentioned in tender & copy of valid registration certificate uploaded.		
4.	Monthly manufacturing & supplying capacity has been mentioned in the Bid documents.		
5.	Complete Bid documents have been uploaded, after digital signature & stamping on all pages.		
6.	Signatures of witness with full name and address have been added wherever required on Bid document.		
7.	Proposal has been submitted in two bid system - Technical Bid & separate Commercial Bid as per tender enquiry.		
8.	Offer validity as required in tender has been accepted & clearly mentioned in Bid document.		
9.	Delivery Terms & Period as per tender has been accepted and mentioned in tender.		
10.	Payment Terms as per tender have been accepted and mentioned in tender.		
11.	Compliance statement in format required in tender has been uploaded along with supporting technical documents/proof for each point/parameter clearly showing it is complied with or not.		
12.	Performance (supply) statement for previous years as required in tender, in the laid down format, has been enclosed. If not, reasons be specifically given in writing.		
13.	Warranty terms as per tender accepted.		
14.	Status of Bidder has been clearly written in tender- manufacturer or manufacturers authorized distributor/ System Integrator/ Customized service provider. If authorized distributor, valid authority letter / MOU for the stores quoted has been uploaded.		
15.	Declaration in respect of <b>Conflict of Interest</b>		
16.	If called for trial, tendered equipment will be deposited well in time before trial board detailed by BSF on given date, time & place along with necessary documents and lab report.		
17.	Lab test report from National/ International accredited lab as required in tender, in original, giving clear verdict as per requirement of tender has been enclosed.		
18.	Acceptance of Functional Demo clause, as required in tender, has been specified in writing.		

19.	Free Training on use of equipment after supply, as specified in tender, has been accepted in writing.		
20.	Condition of contract have been accepted and specifically written in Bid documents.		
21.	<p>The following proforma enclosed with tender have been properly &amp; completely filled in, signed &amp; stamped.</p> <p><b>a)</b> Compliance statement for specification QRs / TDs (<b>Appendix-1</b>)</p> <p><b>b)</b> Offer of stores (<b>Appendix-2</b>)</p> <p><b>c)</b> Details of participating firms (<b>Appendix-3</b>)</p> <p><b>d)</b> Manufacturing details of Indian OEM (<b>Appendix-4</b>)</p> <p><b>e)</b> Service Centre &amp; Workshop (<b>Appendix-5</b>)</p> <p><b>f)</b> Performance statement for previous year (<b>Appendix-6</b>)</p> <p><b>g)</b> Bid Securing Declaration (<b>Appendix-7</b>)</p> <p><b>h)</b> Proforma fore-payment (<b>Appendix-9</b>)</p> <p><b>i)</b> Declaration Certificate (<b>Appendix-10</b>)</p> <p><b>j)</b> Pre-Contract Integrity Pact (<b>Appendix-11</b>)</p> <p><b>k)</b> Declaration &amp; Undertaking by MSEs &amp; Start-ups firms (<b>Appendix-12</b>)</p> <p><b>l)</b> Percentage of Local Content (<b>Appendix-13</b>)</p> <p><b>m)</b> Certificate regarding compliance of Ministry of Finance, Department of Expenditure, Public Procurement Division Order No. F. No. 6/18/2019-PPD dated 23.07.2020 (<b>Appendix-14</b>)</p> <p><b>n)</b> Non-Disclosure Agreement (NDA) (<b>Appendix- 15</b>) (Firms will submit NDA physically in Engineering Projects India Limited, Core-3, SCOPE Complex, Lodhi Road, New Delhi – 110003)</p> <p><b>o)</b> Conflict of Interest (<b>Appendix- 16</b>)</p>		
22.	The Bidder has to clearly mention in writing that business dealings with their firms have not been banned by any Govt / Private agency.		
23.	If the Bidder wants to mention any specific condition, it must be uploaded along with technical bid but on separate letter head and not in the Bid documents. Such condition mentioned in any other document will not be given any consideration.		
24.	Is certificate indicating percentage of local content requirement and due location where local value addition is done for class-I Local Supplier and Class-II Local Supplier provided (Appendix-13).		
25.	Indigenous bidder must be prepared to offer the product/Eqpt for trial on short notice after hearing from the Purchaser/ TEC.		
26.	Bidders have to sign the Pre-Contract Integrity Pact in the presence of witness & upload it with their technical bids as it is pre-requisite and a mandatory requirement without which no bids would be accepted		
27.	Is certificate regarding compliance of Ministry of Finance order dated 23.07.2020 provided (Appendix-14)		

**Signature of Bidder**

EOI No: EPI/CO/ITD/TENDER-BSF-OFC/175/001 DTD. 19.06.2025												
Name of Work: Expression of Interest (EOI) for Pre-tender tie-up with Empanelled and Other Agencies for Implementation of a Turnkey Project for providing Voice and Data Network over OFC with futuristic plan for Integration of Surveillance Equipment on 08 Nos. IB deployed Units under BSF Frontier HQ Jammu.												
Bidder Name :												
<p style="text-align: center;"><b>PRICE SCHEDULE</b></p> <p style="text-align: center;">(This BOQ template must not be modified / replaced by the bidder and the same should be submitted in sealed envelope after filling the relevent columns, else the bidder is liable to be rejected for this tender)</p>												
Sl. No.	Item Description	Quantity	Units	Basic Price Per Unit in INR	GST per unit in INR	Custom Duty (CD) if any in Rs.	Price for free delivery to consignee basis (in INR)	Any Other leviable Taxes/Charges / Sub charges per unit in Rs.	Net Price Per Unit including all Taxes in Rs	TOTAL AMOUNT Without Taxes	TOTAL AMOUNT With Taxes	TOTAL AMOUNT In Words
1	2:4 Power PLC splitter (2:4 Optical power splitter)	80	Nos						0.00	0.00	0.00	INR Zero Only
2	2:8 Power PLC splitter (2:8 Optical power splitter)	94	Mtr						0.00	0.00	0.00	INR Zero Only
3	12 Core single mode Optical Fibre (Cable)	394000	Mtr						0.00	0.00	0.00	INR Zero Only
4	HDPE pipe for laying of OFC	394000	Mtr						0.00	0.00	0.00	INR Zero Only
5	24 Port fiber LIU fully loaded with single mode SC adaptor, Adopter plate and pigtail	538	Nos						0.00	0.00	0.00	INR Zero Only
6	SC-LC Fiber duplex patch cord	112	Nos						0.00	0.00	0.00	INR Zero Only
7	LC-LC Fiber duplex patch cord	32	Nos						0.00	0.00	0.00	INR Zero Only
8	SC-SC Fiber duplex patch cord	1528	Nos						0.00	0.00	0.00	INR Zero Only
9	UTP cat 6 patch cord 3 meter (CAT-6 Patch cord 3 Mtr)	780	Nos						0.00	0.00	0.00	INR Zero Only
10	Layer 3 managed switch Industrial grade with 4 SFP enabled and 24 port	50	Nos						0.00	0.00	0.00	INR Zero Only
11	IP 66 termination box for fiber termination and 8 port industrial switch	538	Nos						0.00	0.00	0.00	INR Zero Only
12	19 inches 9U network rack	66	Nos						0.00	0.00	0.00	INR Zero Only
13	19 inches 42 U network rack	8	Nos						0.00	0.00	0.00	INR Zero Only
14	Network Video recorder (NVR) 32 port with 16 TB HDD	48	Nos						0.00	0.00	0.00	INR Zero Only
15	Layer 2 managed switch Industrial grade with 2 SFP enabled and 8 Port POE	450	Nos						0.00	0.00	0.00	INR Zero Only
16	Layer 2 managed switch industrial grade with 2 SFP enabled and 8 Port	30	Nos						0.00	0.00	0.00	INR Zero Only
17	GPON 8 Port OLT	8	Nos						0.00	0.00	0.00	INR Zero Only
18	EMS software for managing GPON equipment	8	Nos						0.00	0.00	0.00	INR Zero Only
19	Monitor 55" (Industrial grade with wall mount)	74	Nos						0.00	0.00	0.00	INR Zero Only
20	Rack server (12 CPU)	8	Nos						0.00	0.00	0.00	INR Zero Only

(Price Bid to be submitted in sealed envelope (offline))

21	Work station computer	74	Nos						0.00	0.00	0.00	INR Zero Only
22	3 KVA online UPS (With 60 Min Back up)	74	Nos						0.00	0.00	0.00	INR Zero Only
23	1 KVA offline UPS (with cabin with 120 Min backup)	640	Nos						0.00	0.00	0.00	INR Zero Only
24	GI Earthing	96	Nos						0.00	0.00	0.00	INR Zero Only
25	3.5 x 35SQ mm aluminium armoured cable for connection from Border track to mount/ FDP including laying as per CPWD specification	59500	Mtrs						0.00	0.00	0.00	INR Zero Only
26	3 core x 4 SQ mm copper wire for connection or wiring (for short distance below 50 Mtr)	31200	Mtrs						0.00	0.00	0.00	INR Zero Only
27	3 core x 2.5 SQ mm copper wire for connection or wiring (for short distance below 50 Mtr)	7800	Mtrs						0.00	0.00	0.00	INR Zero Only
28	3 phase aluminium bus bar on wall of FDP/ Mount from 63 amp to 100 amp	312	Nos						0.00	0.00	0.00	INR Zero Only
29	Joint Box	312	Nos						0.00	0.00	0.00	INR Zero Only
30	6 / 5 amp 2 switch + 2 socket box	624	Nos						0.00	0.00	0.00	INR Zero Only
31	15/ 16 amp 1 switch + 1 socket box	624	Nos						0.00	0.00	0.00	INR Zero Only
32	DP MCB	312	Nos						0.00	0.00	0.00	INR Zero Only
33	Lying of underground OFC cable for depth of 65 Cms	1	Mtr						0.00	0.00	0.00	INR Zero Only
34	Installation & Commissioning Charges	1	No						0.00	0.00	0.00	INR Zero Only
Total in Figures									0.00	0.00	0.00	INR Zero Only
Quoted Rate in Words		INR Zero Only										