

Dt. 11-02-2022

To,

Dear BA/ SI Partner

Sub: Expression of Interest (EOI) for Selection of Business Associate (BA) from RailTel's empaneled BAs for the requirement of customer of RailTel (CoR) for "Supply and Installation of Smart Solutions Equipment in CoR- Delhi".

1. Schedule of Events

1	EOI No	RailTel/EOI/NR/BA/21-22/Business Delivery/RO/CoR-Delhi
2	EOI Availability Start Date	11-02-2022 18:00 Hrs.
3	EOI Availability End Date	17-02-2022 15:00 Hrs.
4	Last Date for Submission of EOI by Bidder	17-02-2022 15:00 Hrs.
5	Mode of Submission of EOI Document	E-Bid Submission only at https://railtel.enivida.com
6	Estimated Cost	INR 3,16,35,921.00/-
7	EMD*	INR 6,32,720.00/-
8	EOI Document Cost	Nil
9	EOI Processing Fee	INR 8850/- (Incl. GST) (Non-Refundable)
10	Opening of Bidder Response	17-02-2022 15:30 Hrs.
11	Number of Copies/ Packet	One (Single Packet System)
Note: This EOI complies the extant policy of Preference to Make In India. Please refer EOI for details.		

RailTel reserves the right to change the above dates at its discretion.

2. Introduction:

With reference to the above subject, RailTel Corporation of India Ltd. (RCIL) calls your attention to the Selection of Systems Integrator & Implementation Partner for "Supply and Installation of Smart Solutions Equipment in CoR- Delhi"

- a. The rates should be inclusive of taxes, however, breakup of all the taxes charged by the BA/SI shall be shown separately. The BA/SI has to submit the breakup of all taxes at the time of submission of their "Tax invoices" also. The BA/SI has also to submit their GSTIN No. at the time of submissions of their "Tax invoices". In addition to it, the BA/SI should submit a copy of the GSTIN registration certificate for the states wherever applicable. In case of the successful BA/SI is not liable to be registered under CGST/IGST/UTGST/SGST Act, the RailTel shall deduct the applicable GST from his/their bill under RCM and deposit the same to the concerned tax authority. Vendors should file GST return and transfer credit of GST in RailTel account as per

GST procedure.

b. The offers shall be opened on above said date, in the presence of those BA/SI, who choose to be present. If the above said date happens to be a holiday, the same shall be opened on the next working day.

c. This tender is covered under the Integrity Pact Programme of RailTel and the bidders are required to sign the Integrity Pact and submit the same to RailTel along with the bid. Tender received without signed copy of the Integrity Pact document shall be liable to be REJECTED.

3. Non-Disclosure Clause:

- a. No information of this document or related to this work shall be shared with anyone without permission of the RCIL-Northern Region office.
- b. Selected partner will be bound with NDA clause as per Annexure C enclosed to EOI document.

4. Scope of Work and Partner Selection:

4.A: The broad responsibility of the BA/SI under the scope of work for this EOI shall be as per **Appendix-A**

Note: The entire EOI will be governed by CoR Tender/ Corrigendum/ subsequent future instructions from CoR/ BA policy of RCIL till efficacy and will remain binding on OEM and selected business partner (BA).

4. B: Interested business partners needs to submit their EoI response:

You are requested to submit the complete 'Technical and Commercial Proposal online mode only through e-nivida portal.

The offer shall be submitted for this EOI with a Lowest Cost Based Selection Criterion. The bid should have a 'Index' at the starting and all pages of bid should be serially numbered and should be traceable as per the 'Index'.

Any document submitted must be duly signed & stamped by the bidder on each page.

The bidder should take into account any Corrigendum to this EOI document that may have been published (on RailTel website) before submitting their bids. The bid is to be submitted on-line at <https://railtel.enivida.com> portal on or before due date.

- I. Bidders in their own interest are advised to submit the bid well before the last date and hence to avoid any inconvenience at the last moment.
- II. The bidder may modify or withdraw its bid after submission, prior to the deadline date and time prescribed for the bid submission in this EOI. Bid withdrawal notices received after the bid submission deadline will be ignored, and the submitted bid will be deemed to be a validly submitted bid. No bid may be withdrawn in the interval between the bid submission last date and the expirations of the bid validity period. Withdrawal of a bid during this interval period may result cancellation of empanelment of BA/SI with RailTel.
- III. Bidder can submit only 'One Bid'. Submission of multiple bids by a bidder will lead to rejection of all of its bid.
- IV. BA/ SI shall quote in SOR provided in EOI only. In case the schedule of requirement

quoted by BA/SI is incomplete with reference to EOI document, the offer is liable to be rejected. Schedule of requirement (Price Bid) is placed at Appendix B.

- V. The rates quoted should be written both in words and figures. The unit of rates should be mentioned for each SoR item separately & shall be in metric system and as per EOI specification/schedule. In case of difference between words and figures, the rate in words will prevail. If there is a discrepancy between the unit price and total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected by the purchaser accordingly.
- VI. BA/SI are requested to go through all the conditions of the EOI document and note that, by submitting the EOI documents, duly signed, they have accepted these conditions and undertake to abide by these conditions.
- VII. **ATTESTATION OF ALTERATION:** No scribbling is permissible in the EOI documents. EOI containing erasures and alterations in the EOI documents are liable to be rejected. Any correction made by the BA/SI in his/their entries must be signed (not initiated) by him/them.

4.3 The Bidder, who have submitted lowest commercial bid for complete ‘Scope of Work’ will be declared as **‘Commercially Suitable Partner (hereafter referred to as ‘CSP’)**’. It is mentioned that the final selection of CSP will be on the L-1 basis only among the technically qualified bidder. Further, RailTel reserves the right to have negotiation with the CSP.

4.4 As of now, EOI responses from interested partners are invited considering that the selected partner will be responsible for delivering of complete ‘Scope of Work’ as mentioned in the EOI document. However, RailTel at its discretion, may take-up a certain portion / percentage of ‘Scope of Work’ by communicating to the CSP at any point of time during the engagement period. In this scenario, commercial engagement with the CSP will be for that portion / percentage only, which has not been taken by RailTel. Accordingly, resultant value of work will be derived on the basis of negotiated (*in case*) financial bid of the CSP.

5. Selection Criteria:

- a. **Stage-I:** Proposals through e-nivida portal, of only those BA/SIs will be entertained who are empaneled with RCIL. The PBG for empanelment should be valid on date of opening of the bids. A copy of PBG or proof of empanelment fee should be submitted along with the technical- commercialbid along with letter of empanelment.

- b. **Stage-II:**

Qualification criteria:

- 1. There should not be any ongoing or past arbitration case(s) between RailTel/REL/Customer of RailTel (CoR) and bidder for the past two years on the last date of submission of EOI. Self-Declaration is to be submitted in this regard.

2. The bidder should submit 'Acknowledgment Copy' of Income Tax Returns for last three Financial Years.
3. The bidder should have a valid Corporate Identification Number (CIN), Permanent Account Number (PAN), Goods and Service Tax Identification Number (GSTIN), on the last date of submission of EOI. Copy of documents in this regard is to be submitted.
4. The Applicant should not be blacklisted by any State / Central Government / PSU / Autonomous Body on the last date of submission of EOI. Self-Declaration is to be submitted in this regard.
5. Bidder must clearly identify the full title and authorization of the designated official and provide a statement of offer commitment with the accompanying signature of the official and submit the copy of power of attorney/authority letter authorizing the signatory to sign the bid.
6. MAF in the name of RailTel is mandatory from the major original equipment manufacturing (OEM). Formats are enclosed with the tender document.
7. Bidder has to submit the No Deviation Certificate.
8. "The BA/SI shall submit a notarized affidavit (as per Annexure-3) on a non-judicial stamp paper stating that they meet the 100% compliance requirements & all their statements/documents submitted along with the bid are true and factual. Standard format of the affidavit to be submitted by the bidder is given in the EOI document. Non submission of an affidavit by the bidder shall result in rejection of his/their bid and it shall be mandatorily incumbent upon the BA/SI to identify, state and submit the supporting documents duly self-attested by which they/he are/is qualifying the work experience / Qualifying Criteria mentioned in the EOI Document. It will not be obligatory on the part of the EOI Evaluation Committee to scrutinize beyond the submitted document of the BA/SI as far as his qualification for the EOI is concerned.
9. The BA shall submit a declaration/undertaking regarding their compliance with GOI Ministry of Finance OM No. F. No. 6/18/2019-PPD, dated 23-07-2020 regarding restrictions on procurement from a bidder of a country which shares a land border with India. Undertaking on the bidder's Letter Head duly Signed and stamped by the Authorized Signatory. The corresponding format is attached as Appendix-14.
10. Purchase Preference to Class-I local supplier/Preference to Make in India: Only 'Class-I local supplier' is eligible to participate for the subject tender, as defined under the Order No. P-45021/2/2017-PP(BE-II) dated 04.06.2020 issued by Department for Promotion of Industry and Internal Trade (DPIIT). Bidder must also provide details of the location(s) at which the local value addition is made. In case of procurement for a value in excess of Rs. 10 Crores, the 'Class-I local supplier' shall be required to provide 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 suppliers other than companies) giving the percentage of local content after completion of works to the Engineer. If any false declaration regarding local content is found, the company shall be debarred for a period of three years from participating in tenders of RCIL. Supplier/bidder shall give the details of the local content in a format attached as Appendix-12 and Appendix-13 of FOT duly filled to be uploaded along with the technical bid. In case, bidder do not upload Appendix-12 and Appendix-13 of FOT duly filled along with their technical bid, supplier/bidder shall be considered as 'non-local supplier' and will not be eligible to participate for estimated value of purchases up to Rs. 200

Crores except Global tender enquiries in terms of Clause 3(b) of Order No. P-45021/2/2017- PP(BE-II) dated 04.06.2020 issued by Department for Promotion of Industry and Internal Trade (DPIIT).

11. Qualifying Requirements for Bidders:

A. **Work Experience:** The tenderers will be qualified only if they have successfully completed work(s), completion date(s) of which falling during last seven years ending last day of the month previous to the month of tender submission as given below.

- I. BA may have work experience of working in any Govt/PSU as per following table:

Qualification criteria	Rs. (Incl. taxes)
At least 1 similar completed work	1,89,81,552.50
At least 2 similar completed works of minimum value not less than	1,26,54,368.40
At least 3 similar completed works of minimum value not less than	94,90,776.26

- II. BA may have work experience in Audio/Video based services implementation.
- III. BA may have an experience in Turnkey solutions implementation as on date of Last date of bid submission.
- IV. BA may have to provide similar work experience on last date of bid submission

B. OEM based qualifying criteria: -

In addition to above, the tenderers must submit OEM declaration/ Undertaking as per Appendices-7A-1, 7A-2, 7B-1, 7B-2, 7B-3, 7C-1, 7C-2, 7D-1, 7D-2, 7D-3 of FOT.

C. Financial Criteria for Bidder:

The tenderer must have received total contractual payments/operating turnover in the previous three financial years and the current financial year up to the date of inviting of tender, at least 150% of the advertised value of the tender. The tenderers shall submit Certificates to this effect which may be an attested Certificate from the concerned department / client or Audited Balance Sheet /Certificate from Chartered Accountant duly supported by Audited Balance Sheet. (Note: Client certificate from other than Govt. Organization should be duly supported by Form 16A/26AS generated through TRACES of Income Tax Department of India). Credentials if submitted in foreign currency shall be converted into Indian currency i.e., Indian Rupee as under: The conversion rate of US Dollars into Rupees shall be the daily representative exchange rates published by the Reserve Bank of India for the relevant date. Where, relevant date shall be as on the last day of month previous to the one in which tender is invited. In case of any other currency, the same shall first be converted to US Dollars as on the last day of month previous to the one in which tender is invited, and the amount so derived in US Dollars shall be converted into Rupees at the aforesaid rate. The conversion rate of such currencies shall be the daily representative exchange rates published by the International Monetary Fund for the relevant date.

Definition of Similar Work: “Similar work” means following:

1. “Supply, Installation, Testing and Commissioning of Audio Video related work in Board Rooms/Training Rooms/Meeting Rooms or Supply,

Installation, Testing and commissioning of Video Conferencing System or Supply, Installation, Testing and commissioning of Video wall along with AV / Video Conferencing solution.”

OR

2. “Supply, Installation, Testing and commissioning of AFC/Telecom/ IT systems in any metro rail network/ Government organization/ PSU/ Enterprise”.

12. JV and consortium are **not** allowed to participate in this EOI.

13. EMD and Integrity Pact (if applicable) shall be submitted in a sealed envelope separately offline/online by the stipulated bid submission closing date and time at the address given below. Any bid without an acceptable EMD and Integrity Pact (if applicable) shall be treated as non- responsive by RCIL.

14. Payment terms will be on back-to-back basis and as mentioned in the RFP document. Payment will be released on receipt of Tax Invoice for the work and after RailTel receives the payment from Customer for the same work. Acceptance certificate to be submitted along with bid by the bidder.

15. All the penalty/LD/SLA deduction will be applicable back-to-back as imposed by the CoR PLUS FIVE (5) percent on the bidder.

16. The bidders are required to submit a copy of the EOI document duly signed by Authorized Signatories as a token of acceptance of terms & conditions of contract.

17. DELETED

18. Bidder has to signed and submit the NDA enclosed in format of Annexure C.

19. Bidder to submit the Affidavit of Self certification regarding Minimum Local Content as per annexure- for Class 1 local Supplier.

20. Bidder has to submit the EOI cover letter.

- c. **Stage-III:** Those BA/SIs whose PBG is in place and those are fully complying with Stage-II, will be further evaluated on Financial Parameter as per the Price Bid. The BA/SIs meeting the technical compliance of RailTel’s customer 100% & quoting the lowest price shall be adjudged ‘**Successful BA/ SI**’. No upward price revision is allowed at a later stage.

6. Duration of Engagement:

The contract will be governed on back-to-back basis as per the contract between RailTel and CoR.

7. RCIL’s Right to Accept/Reject Bids:

RCIL reserves the right to accept or reject any bid and annul the bidding process or even reject all bids at any time prior to award of contract, without thereby incurring any liability to the affected BA/SI or without any obligation to inform the affected BA/SI about the grounds of rejection by RailTel.

8. Bidding Document

- (a) The BA/SI is expected to examine all instructions, forms, terms and conditions and specifications in the bidding documents. Submission of bids, not substantially responsive to the bidding document in every aspect, will be at the BA/SI’s risk and may result in rejection

of its bid without any further reference to the BA/SI.

- (b) All pages of the EOI documents shall be signed in ink by the BA/SI including the closing page in token of his having studied the EOI document. Signed copy of the EOI document is also to be submitted along with the offer.

9. Bid Validity

Bids shall remain valid for a period of 180 days from the date of opening of the bids. RCIL shall at its own discretion reject a bid validity of shorter period. The same shall be further extended, if need be, based on request from the purchaser.

10. Bid Currency

The prices in the bid document shall be expressed in Indian Rupees only and price figures quoted wherever will be considered as expressed in Indian Rupees only.

11. Performance Bank Guarantee (PBG)/ Performance Security Guarantee:

- 11.1 On receipt of the Letter of Acceptance of Tender from the RailTel, the successful BA/SI should give a Performance Guarantee in the form of irrevocable bank guarantee from any Nationalized Bank or Scheduled Bank in the Form given in Tender document amounting to **3% of the contract value**. It is mandatory that all the Bank Guarantees submitted under this EOI must be routed through Structured Financial Messaging System (SFMS) from issuing Bank to RailTel's Bank. Thereafter only physical Bank Guarantee will be acted upon. Format of PBG is as per **Annexure-5A**.
- 11.2 The Instruments for Performance Guarantee should be valid up to 6 months beyond the Defect Liability Period.
- 11.3 The successful BA/SI shall have to submit performance Security within thirty (30) days of the receipt of Purchase Order/Service Order from the RCIL, the Supplier shall furnish the Contract Performance Guarantee, if applicable, for due performance of the Contract(s)/Order(s) in form of DD or an irrevocable Bank Guarantee as per the RCIL standard format (Annexure 5A) from any Nationalized bank / Scheduled Bank as acceptable to RCIL.
- 11.4 A separate advice of the BG will invariably be sent by the BG issuing bank to the RailTel's bank through SFMS and only after this the BG will become acceptable to RailTel. It is therefore in own interest of bidder to obtain RailTel's bank IFSC code, its branch and address and advise these particulars to the BG issuing bank and request them to send advice of BG through SFMS to the RailTel's Bank.
- 11.5 Performance Guarantee shall be released after the period specified earlier.
- 11.6 Wherever the contracts are rescinded by the bidder, the security deposit should be forfeited and the Performance Guarantee shall be en-cashed by RailTel.
- 11.7 The balance work shall be got done independently by RailTel.
- 11.8 The original contractor shall be debarred from participating in the tender for executing the balance work.
- 11.9 In case Performance Bank Guarantee (PBG)/ Performance Security Guarantee value is less than Rs. 5 lakhs, same needs to be submitted in form of DD/RTGS.

Bank Account Details of RailTel Corporation of India Limited for Performance Bank Guarantee (PBG)/ Performance Security Guarantee

Name of The Firm: RailTel Corporation of India Ltd	Bank Name: Union Bank of India
Branch Name: Connaught Place Delhi	Account Number: 307801010917906
IFSC Code: UBIN0530786	MICR Code: 110026006
PAN: AABCR7176C	GSTN: 07AABCR7176C2ZE (Delhi)

Performance Security Guarantee in form of DD should be in favour of RailTel Corporation of India Limited payable at New Delhi.

12. Modification and/or Withdrawal of Bids:

Bids once submitted will be treated, as final and no modification will be permitted. No correspondence in this regard will be entertained.

No BA/SI shall be allowed to withdraw the bid after the deadline for submission of bids.

If successful BA/SI withdraw or back out from the bid commitments, the BG submitted or empanelment fee in reference to empanelment shall be forfeited and all interests/claims of such BA/SI shall be deemed as foreclosed/rejected. Such BAs withdrawal may be considered for further action as may be deemed fit by RailTel.

13. DELETED

14. Negotiation:

RCIL reserves the right to negotiate with the successful BA/SI in order to make the bid competitive.

15. Payment Terms:

Payment terms will be back-to-back basis and on receipt of payment from the customer of RailTel.

The following procedure shall be followed for paying the BA/SI the charges for the services rendered by the BA/SI under the contract: -

- i) The payment shall be made to the BA/SI as per details mentioned under Payment Terms mentioned below.
- ii) All payments shall be made by the RailTel (RCIL) Northern Region, New Delhi after deducting penalties if any as deducted by the customer of RailTel.
- iii) RCIL OR CUSTOMER OF RAILTEL reserves the right to adjust any over-payment of charges any time during the period of contract.
- iv) It is mandatory for the firm to indicate their bank account numbers and other relevant e-payment details so that payments could be made through ECS/EFT mechanism instead of payment through cheques wherever feasible. A copy of the model mandate form prescribed by RBI to be submitted by firm for receiving payments through ECS.
- v) Declaration in relation to section 206AB of the income tax Act 1962 ('the Act').
- vi) E-invoice or Declaration for non-applicability of e-invoicing as per Notification No. 05/2021 – Central Tax.
- vii) Declaration for non-applicability of labour Cess.
- viii) Paying Authority: Bill paying authority will be JGM-Finance /NR Delhi on submission of necessary document. Bill passing authority will be DGM-Marketing/NR.
- ix) The payment for items given in Bill of Quantity/Pricing Document shall be made

on the basis of actually executed quantities. The Key dates (KD) to be read as per CoR's Requirement document.

S. No.	Key date (KD) Schedule	Payment to be Made
1	On Completion of Key Date 1	10% of Schedule-A (SITC of items)
2	On Completion of Key Date 2	25% of Schedule-A (SITC of items)
3	On Completion of Key Date 3	30% of Schedule-A (SITC of items)
4	On Completion of Key Date 4	25% of Schedule-A (SITC of items)
5	On Completion of Key Date 5	Balance 10% of Schedule-A (SITC of items)
6	On Completion of 12 months of DLP (KD-6 Plus 12 months)	50% value of Schedule-B (DLP)
7	On Completion of 24 months of DLP (KD-6 Plus 24 months)	Balance 50% value of Schedule-B (DLP)
8	On Completion of 12 months of CAMC (KD-7 Plus 12 months)	20% value of Schedule-C (CAMC)
9	On Completion of 24 months of CAMC (KD-7 Plus 24 months)	20% value of Schedule-C (CAMC)
10	On Completion of 36 months of CAMC (KD-7 Plus 36 months)	20% value of Schedule-C (CAMC)
11	On Completion of 48 months of CAMC (KD-7 Plus 48 months)	20% value of Schedule-C (CAMC)
12	On Completion of 60 months of CAMC (KD-7 Plus 60 months)	Balance 20% value of Schedule-C (CAMC)

x) Selected BA has to submit completion certificate of all key date items marking payment needs to be submitted while claiming respective payment.

xi) GST (as applicable) is included in the contract price. The contractor shall maintain details of SGST/UTGST paid to Revenue department of the respective state in which the work is carried out and submit the following: -

- a) Tax Invoice
- b) GSTR-1 return filed with the respective authority or the form of return as amended by the Central/State Government time to time & copy of challans in regard to deposit tax.
- c) Certificate of the Chartered Accountant in regard to turnover of the contractor relating to CoR project and deposit of due taxes with respective tax authorities. All such documents or certificates which are provided by CA after 1st July, 2019, must contain UDIN thereon and the particulars of certifications must be same as mentioned on document/certification and submitted to ICAI on its website which can be verified online on <https://udin.icai.org/search-udin>.
- d) Relevant abstract of filed GSTR-1 return showing the details of relevant tax invoice submitted by the contractor. GST shall be paid on reimbursement basis once vendor files its GSTR-1 Return and its invoice gets reflected in GSTR-2A of CoR.
- e) In view of above, the bidders are advised to quote the price inclusive of all central/state/local taxes, duties, levies, Cess, and all other incidental charges required to fulfil the tender conditions including statutory deduction viz TDS towards Income Tax/GST/Labour Cess etc.

Note: - No advance payment will be released to BA even in case of back-to-back basis, after advance is received from CoR. PAC and FAC will be governed by CoR.

16. Agreement & Restrictions on ‘Transfer of Agreement’:

- (1) An agreement shall need to be signed for successful completion of the contract at the quoted/ agreed rate as per RailTel terms & conditions in the format attached as Annexure 6.
- (2) The successful BA/SI shall not assign or transfer its right in any manner whatsoever under the agreement to a third party or enter into any agreement for subcontracting and/or partnership relating to any subject matter of the agreement to any third party either in whole or in any part i.e., no subcontracting/partnership/third party interest shall be created with reference work/project assigned through this EoI.

17. Delivery Timeline:

05 Months from date of issue of LOA / LOI / Purchase Order.

18. Liquidated Damage (LD):

In the event of the BA/SI's failure to submit the Bonds, Guarantees and Documents, supply the stores/goods /services and conduct trials, installation of equipment, training, etc. as specified in this EOI, the RailTel or Customer of RailTel may, at his discretion, withhold any payment until the completion of the contract.

19. Liability under Agreement/EoI:

Except as provided in the EoI document, neither party i.e., RCIL and successful BA/SI shall be liable to each other party or any other party by virtue of termination of the EoI for any reason whatsoever for any claim for loss or profit or on account for any expenditure, investment, leases, capital improvements or any other commitments made by the other party in connection with their business made in reliance upon or by virtue of the EoI document.

20. Suspension, Revocation or Termination of agreement /EoI:

RailTel reserves the right to suspend the operation of the EoI, at any time, due to change in its own license conditions or upon directions from the competent government authorities, In such a situation, RailTel shall not be responsible for any damage or loss caused or arisen out of aforesaid action. Further, the suspension of the EoI will not be a cause or ground for extension of the period of the EoI and suspension period will be taken as period spent. During this period, no charges for the use of the facility of the successful BA/SI shall be payable by RailTel.

RailTel may, without prejudice to any other remedy available for the breach of any conditions of EoI, by a written notice of Three month issued to the Successful BA/SI at its registered office, terminate/or suspend the agreement under any of the following circumstances:

- I. The successful BA/SI failing to perform any obligation(s) under the agreement.
- II. The successful BA/SI failing to rectify, within the time prescribed, any defect as maybe pointed out by RailTel
- III. The successful BA/SI going into liquidation or ordered to be wound up by competent authority.
- IV. If the successful BA/SI is wound up or goes into liquidation, it shall immediately (and not more than a week) inform about occurrence of such event to RailTel in writing. In that case, the written notice can be modified by RailTel as deemed fit under the circumstances. RailTel may either decide to issue a termination notice or to continue the agreement by suitable modifying the conditions, as it feels fit under the

circumstances.

- V. It shall be the responsibility of the successful BA/SI to maintain the agreed Quality of Service, even during the period when the notice for surrender/termination of agreement is pending and if the Quality of Performance of Solution is not maintained, during the said notice period, it shall be treated as material breach liable for termination at risk and consequent of successful BA/SI and Performance Bank Guarantee submitted along with empanelment letter shall be forfeited, without any further notice. Also, the PBG submitted for the EoI in context shall be forfeited, without any further notice.
- VI. Breach of non-fulfilment of Agreement conditions may come to the notice of RailTel through complaints or as a result of the regular monitoring. Wherever considered appropriate RailTel may conduct an inquiry either suo-moto or on complaint to determine whether there has been any breach in compliance of the terms and conditions of the agreement by the successful BA/SI or not. The successful BA/SI shall extend all reasonable facilities and shall endeavour to remove the hindrance of every type upon such inquiry. In case of default by the selected BA/SI in successful implementation and thereafter maintenance of work as per the conditions mentioned in the Scope of work and EoI, the PBG of successful BA/SI available with RailTel will be forfeited.

21. Dispute Settlement:

In case of any dispute concerning this order both the successful BA/SI and RailTel shall try to settle the same amicably through mutual discussion/negotiation. Any unsettled dispute shall be settled in terms of Indian Act of Arbitration and conciliation 1996 or any amendment thereof. Place of arbitration shall be New Delhi. Arbitrator shall be appointed by Chairman & Managing Director, RailTel Corporation of India Limited.

22. Force-Majeure under Agreement/EoI:

If at any time, during the continuance of this agreement, the performance in whole or in any part, by either party i.e., RCIL and successful BA/SI, of any obligation under this is prevented or delayed, by reason of war, or hostility, acts of the public enemy, civic commotion, sabotage, Act of State or direction from Statutory Authority, explosion, epidemic, quarantine restriction, strikes and lockouts (as are not limited to the establishments and facilities of the successful BA/SI, fire, floods, natural calamities or any act of God (hereinafter referred to as event), provided notice of happenings of any such event is given by the affected party to the other, within 21 Calendar days from the date of occurrence thereof, neither party shall, by reason of such event, be entitled to terminate the agreement, nor shall either party have any such claims for damage against the other, in respect of such non-performance or delay in performance. Provided service under the agreement shall be resumed as soon as practicable, after such event comes to an end or ceases to exist. The decision of RailTel as to whether the service may be so resumed (and the time frame within which the service may be resumed) or not, shall be final and conclusive. However, the force-majeure events noted above will not in any way cause extension in the period of the agreement.

23. Labour Laws to be complied by the successful BA/SI:

The successful BA/SI shall obtain a valid license under the Contract Labour (RA) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, before the commencement of the work, and continue to have a valid license until the completion of

the work. The BA/SI shall also comply with the provisions of the Inter-State Migrant Workmen(Regulation of Employment and Conditions of Service) Act 1979. The successful BA/SI shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996. Any failure to fulfil these requirements shall attract the penal provisions of this contract arising out of the resultant non-execution of the work.

24. EOI Submission Details:

You are requested to submit the complete 'Technical and Commercial Proposal' online using e-Procurement Portal <https://railtel.enivida.com>.

- 24.1. Single Packet Bid system will be followed for this EOI with a Lowest Cost Based Selection Criterion. The bid should have a 'Index' at the starting and all pages of bid should be serially numbered and should be traceable as per the 'Index'.
- 24.2. The bidder should take into account any Corrigendum to this EOI document that may have been published before submitting their bids. The bid is to be submitted online i.e. at RailTel's e-Tender portal (www.railtel.enivida.com). Physical / Offline submitted bid will not be entertained.
- 24.3. Bidders in their own interest are advised to submit the bid well before the last date and hence to avoid any inconvenience at the last moment.
- 24.4. The bidder may modify or withdraw its bid after submission, prior to the deadline date and time prescribed for the bid submission in this EOI. Bid withdrawal notices received after the bid submission deadline will be ignored, and the submitted bid will be deemed to be a validly submitted bid. No bid may be withdrawn in the interval between the bid submission last date and the expirations of the bid validity period. Withdrawal of a bid during this interval may result in the forfeiture of the bidders EMD or cancellation of empanelment of BA/SI with RailTel.
- 24.5. An Organization / Bidder can submit only 'One Bid'. Submission of multiple bids by a bidder will lead to rejection of all of its bids.
- 24.6. Tenderer shall quote in SOR provided in eNivida portal only. In case the schedule of requirements quoted by the tenderer is incomplete with reference to the EOI document, the offer is liable to be rejected.
- 24.7. The rates quoted should be written both in words and figures. The unit of rates should be in the metric system and as per EOI specification/schedule. In case of difference between words and figures, the rate in words will prevail. If there is a discrepancy between the unit price and total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected by the purchaser accordingly.
- 24.8. BA/SI are requested to go through all the conditions of the EOI document and note that, by submitting the EOI documents, duly signed, they have accepted these conditions and undertake to abide by these conditions (unless specifically disagreed to clause wise).
- 24.9. ATTESTATION OF ALTERATION: No scribbling is permissible in the EOI documents. EOI containing erasures and alterations in the EOI documents are liable to be rejected. Any correction made by the BA/SI in his/their entries must be signed (not initialed) by him/them.

In reference to the above, Bid Proposal should consist of:

1. Copy of PBG submitted to RailTel in reference to their empanelment letter and LOA

- copy. The PBG should be valid on the date of opening of bids for the EOI in context.
2. **Earnest Money Deposit (EMD)**:- Rs. 6,32,720.00/- in form of Bank Guarantee or Demand Draft in favour of RailTel Corporation of India Limited payable at New Delhi. EMD shall be waived for MSME registered vendors as per GOI norms. However, entire EOI and work awarded by this EOI shall be governed by BA Policy of RailTel Corporation of India Limited and MSME norms shall be limited to EMD waiver for EPO Participation.
 3. The bidders are required to submit copy of the EOI document duly signed by Authorized Signatories as a token of acceptance of terms & conditions of contract.
 4. Price Bid format as per **Appendix-B**
 5. Documents as per clause 5 b of selection criteria.

25. Compliance to the EoI Document: BA/SIs should ensure compliance to all clauses of this EoI. Any deviation will lead to rejection of the bid of BA/SI.

26. All the terms and conditions as per CoR will be applicable back-to-back and contractor will have to follow the same.

27. Contact Details

In case of any query/issue you may contact the following officers.

S. No.	Officer Name	Designation	Mobile No.	E-mail ID
1	Sh. Arya Vrat Sharma	DGM/ Marketing	97176 44155	aryavrat@railtelindia.com
2	Sh. Hemant Yadav	DGM/ Marketing	9717644137	hemant Yadav@railtelindia.com
3	Sh. Abhishek Kumar	Sr. Mgr.-Marketing	9717644075	abhishek.kumar@railtelindia.com

It is advised that queries may be raised through e-mail communication for unambiguous revert cum clarification till 3 days before the last date of bid submission.

SCOPE OF WORK

1. **Brief Description of Work:** “Supply and Installation of Smart Solutions Equipment in CoR-Delhi”. For in depth details refer to Scope of work and Technical Detail.pdf file attached to tender document.
2. **Description of the Project:** As per Appendix A and Scope of work and Technical Detail.pdf
3. **Completion Period:** Delivery, Installation & Configuration of the complete solution should be done within **05 Months** from the date of issuance of purchase order/ LOA. The warranty shall remain valid for the period of **Twenty-Four months** from the date of installation and commissioning or as specified in the Technical Specifications / SPC. The period of CAMC services shall be **Sixty Months** from the date of handing over.
4. The system of e-tendering will be of “Single Packet Bid System”. The bidder has to submit bid online only in the prescribed format given in the e-nivida portal.
5. **Documents to be submitted by bidder/s:**
 - i) Bidder/s shall note that original tender documents (all pages including drawings), addendum, corrigendum issued (if any) should be submitted intact without detaching any pages at the time of submission of tender.
 - ii) Bidder/s has to submit all the documents required as per EOI conditions at the time of submission of bid. Documents submitted for any other EOI(s) or submitted for any other purpose and available with RCIL will not be entertained or considered against present EOI.
 - iii) The documents required under the EOI conditions for submission along with the EOI are listed below. The bidder/s are advised to examine the various conditions and submit their offer with following details.
 - iv) In addition, required document as mentioned in clause 5 (Selection Criteria) above.
 - v) Tender document.
 - vi) BOQ duly filled in all respect.
 - vii) All documents required as per Appendix 15.
 - viii) MAF from all the OEMs involved.

Note: The relevant documents shall be submitted in accordance with E-Tender Notice and as stated in Tender Documents.

Section - I

Technical Specifications and Scope of work.

(THIS DOCUMENT IS MEANT FOR THE EXCLUSIVE PURPOSE OF
BIDDING AGAINST THIS SPECIFICATION AND SHALL NOT BE
TRANSFERRED, REPRODUCED OR OTHERWISE USED FOR PURPOSES
OTHER THAN FOR WHICH IT IS SPECIFICALLY ISSUED)

]

Employer's Requirement and Scope of Work

The contractor shall execute the work for Supply, installation, testing and commissioning of various smart solution equipment at various locations of CoR. The contractor shall also provide two years of DLP and five years of comprehensive Annual Maintenance thereafter, for each item installed in Cor as part of this contract.

Employer Requirement for Supply and Installation, Testing and commissioning of Smart Solution equipment:

1. The employer requirements pertaining to the Tele-Presence Room (Block-A) is as below:
 - 1.1. Supply, installation, testing and commissioning of All-in-One multi-media digital podium with all its accessories as per the specified technical specifications document and quantity as per BOQ.
 - 1.2. Supply, installation, testing and commissioning of ceiling fixed document camera with all its accessories as per the technical specifications document and quantity as per BOQ.
 - 1.3. Supply, installation, testing and commissioning of Active LED Video wall with all its accessories as per the technical specifications document and quantity as per BOQ. The pixel pitch of video wall should be a maximum of 1.6mm with the aspect ratio of 16:9.
 - 1.4. Supply, installation, testing and commissioning of 65" and 55" 4K UHD display with all its accessories as per the technical specifications document and quantity as per BOQ.
 - 1.5. Supply, installation, testing and commissioning of one 15" or better touch screen laptop for chairman, as per the technical specifications document and quantity as per BOQ.
 - 1.6. Supply, installation, testing and commissioning of Video Conferencing system with 3 cameras with all its accessories as per the technical specifications document and quantity as per BOQ. The system must have the ability to pair mobile devices such as Tablets and Smartphones based on iOS or Android platforms and with laptops for sending content without any wires to the VC system. The system must have built-in Multi-conference capability to connect at least 1+3 sites at 720p in a continuous presence mode.
 - 1.7. Supply, installation, testing and commissioning of under-table wall-plate along-with cable cubby with all its accessories as per the technical specifications document and quantity as per BOQ.
 - 1.8. Supply, installation, testing and commissioning of HDMI Matrix Switcher with all its accessories as per the technical specifications document and quantity as per BOQ for switching the content from laptops, podium and to different displays inside the room.
 - 1.9. Supply, installation, testing and commissioning of HDMI transmitter and receiver and scalar solutions with all its accessories as per the technical specifications document and quantity as per BOQ.
 - 1.10. Supply, installation, testing and commissioning of Wireless Presentation System with 4K switcher with all its accessories as per the technical specifications document and quantity as per BOQ. Wireless presenter should support Mira cast/ Chrome cast/ Air play. It should be such that the presenter need not setup any .exe file in laptop or mobile device for presenting wireless on screen. It should support one-click Skype for Business and Zoom meeting launch.
 - 1.11. Supply, installation, testing and commissioning of Compact Full Range Ceiling Speakers with dual channel class D amplifiers as per the technical specifications document and quantity as per BOQ.

- 1.12. Supply, installation, testing and commissioning of passive two-way multiple drive Column Speakers and digital signal processor for audio system in the room as per the technical specifications document and quantity as per BOQ.
- 1.13. Supply, installation, testing and commissioning of Digital Audio Conference Control Unit as per the technical specifications document and quantity as per BOQ. The control unit can control up to 10 chairman units & 999 delegate units by extension power supply.
- 1.14. Supply, installation, testing and commissioning of Flush Mount Digital Discussion Conference unit as per the technical specifications document and quantity as per BOQ. The conference unit should be configurable as per chairman and delegate microphone units.
- 1.15. Supply, installation, testing and commissioning of handheld microphones and lapel microphones as per the technical specifications document and quantity as per BOQ.
- 1.16. Supply, installation, testing and commissioning of Lighting Control Wall-mount as per the technical specifications document and quantity as per BOQ. It should have dimming and on-off feature and should be able to integrate with master AV system to work as single platform for user.
- 1.17. Supply, installation, testing and commissioning of Room Scheduling System with hallway sign indicator as per the technical specifications document and quantity as per BOQ. The system should be compatible with Google calendar wherein meetings can be scheduled and pushed to the scheduler through network IP.

2. The requirements pertaining to the Meeting Room (Block-A) is as below:

- 2.1 Supply, installation, testing and commissioning of ultra-short throw projector as per the specified technical specifications document and quantity as per BOQ.
Ceramic whiteboard shall be installed as the projector screen of size 8.8 X 5 sqfts. having very smooth surface with minimum reflection.
- 2.2 Supply, installation, testing and commissioning of interactive pen computer with latest windows configuration as per the specified technical specifications document and quantity as per BOQ.
- 2.3 Supply, installation, testing and commissioning of under-table wall-plate along-with cable cubby with all its accessories as per the technical specifications document and quantity as per BOQ, for interfacing with laptops and tablets in the meeting room.
- 2.4 Supply, installation, testing and commissioning of HDMI Matrix Switcher with all its accessories as per the technical specifications document and quantity as per BOQ for switching the content from laptops and pen computer to the main projector screen inside the room.
- 2.5 Supply, installation, testing and commissioning of HDMI transmitter and receiver and scalar solutions with all its accessories as per the technical specifications document and quantity as per BOQ.
- 2.6 Supply, installation, testing and commissioning of Wireless Presentation System with 4K switcher with all its accessories as per the technical specifications document and quantity as per BOQ. Wireless presenter should support Mira cast/ Chrome cast/ Air play. It should be such that the presenter need not setup any exe file in laptop or mobile device for presenting wireless on screen. It should support one-click Skype for Business and Zoom meeting launch.
- 2.7 Supply, installation, testing and commissioning of Audio system for the room consisting of Compact Full Range Ceiling Speakers with dual channel class D amplifiers as per the technical specifications document and quantity as per BOQ.
- 2.8 Supply, installation, testing and commissioning of digital audio conference control unit as per the technical specifications document and quantity as per BOQ. It should have speech filter engine, capable to control 3rd party devices with TCP IP and RS 232, should have 1nos of RS 232 port for integration with control system, should have Bi-Directional Locate Functionality and should have 48 or more digital audio Channel Bus.

- 2.9 Supply, installation, testing and commissioning of Cardioid Condenser Boundary Microphone with Mute Switch and LED Indicator as per the specified technical specifications document and quantity as per BOQ.
 - 2.10 Supply, installation, testing and commissioning of rack mountable 14 Channel Mic/Line audio mixer as per the specified technical specifications document and quantity as per BOQ. It should have Real-time frequency analyser (RTA) on inputs and outputs, shall be able to record and mix with the warmth of 20 professional-quality preamps inputs, should possess built-in dual-band Wi-Fi control and can be controlled wirelessly.
3. The requirements pertaining to the Library (Block-A) is as below:
 - 3.1. Supply, installation, testing and commissioning of all-in-one touch PC along with headphones with 21" display or better and latest Window OS as per the technical specifications document and quantity as per BOQ.
 - 3.2. Supply, installation, testing and commissioning of flat touch kiosk as per the technical specifications document and quantity as per BOQ.
 - 3.3. Supply, installation, testing and commissioning of Audio system for the room consisting of Compact Full Range Ceiling Speakers with dual channel power amplifiers as per the technical specifications document and quantity as per BOQ.
 - 3.4. Supply, installation, testing and commissioning of gooseneck microphones for the librarian desk and 8 channel Mic/Line audio mixer as per the technical specifications document and quantity as per BOQ.
 - 3.5. Supply, installation, testing and commissioning of Library Management Software with 2 Barcode Scanners and door sensors as per the technical specifications document and quantity as per BOQ. The barcode scanner should be used for issuing the books to users and the door sensors should be able to detect the unissued books going out of library. The software should be able to send sms to user regarding issuance of book and in case due date of issued book is approaching etc.
 4. The requirements pertaining to the MDP Room (Block-B) is as below:
 - 4.1. Supply, installation, testing and commissioning of digital Podium with in-build PC as per the technical specifications document and quantity as per BOQ. It should have one digitizer battery-less pen with backside eraser. It should be able to communicate with existing interactive display inside the room.
 - 4.2. Supply, installation, testing and commissioning of Audio system for the room consisting of Compact Full Range Ceiling Speakers with dual channel power amplifiers as per the technical specifications document and quantity as per BOQ.
 - 4.3. Supply, installation, testing and commissioning of cardioid condenser wireless clip on microphone and the audio mixer as per the technical specifications document and quantity as per BOQ.
 5. The requirements pertaining to the EDP Room (Block-B) is as below:
 - 5.1 Supply, installation, testing and commissioning of ultra-short throw projector as per the specified technical specifications document and quantity as per BOQ.
Ceramic whiteboard shall be installed as the projector screen of size 8.8 X 5 sqft. having very smooth surface with minimum reflection.
 - 5.2 Supply, installation, testing and commissioning of professional quality Lectern with integrated audio receiver and speaker system as per the technical specifications document and quantity as per BOQ. It should be supplied with gooseneck condenser microphone and should have output connectors for LINE OUT & REC OUT through mini male XLR & 6.3mm

phone socket respectively, allowing the lectern system to be connected to external amplifiers for further amplification, if required.

- 5.3 Supply, installation, testing and commissioning of cardioid condenser wireless clip on microphone and audio mixer as per the technical specifications document and quantity as per BOQ.

6 The requirements pertaining to the Auditorium Room (Block-B) is as below:

- 6.1 Supply, installation, testing and commissioning of ultra-short throw projector as per the specified technical specifications document and quantity as per BOQ.
Ceramic whiteboard shall be installed as the projector screen of size 12.4 X 7 sqft having very smooth surface with minimum reflection.
- 6.2 Supply, installation, testing and commissioning of digital Podium with in-build PC compatible configuration for annotation functionality as per the technical specifications document and quantity as per BOQ. It should have one digitizer battery-less pen with backside eraser.

7 The requirements pertaining to the Miscellaneous items of Block-B is as below:

- 7.1 Supply, installation, testing and commissioning of all-in-one Portable 200-Watt Speaker with Class-D amplifier as per the technical specifications document and quantity as per BOQ.
- 7.2 Supply, installation, testing and commissioning of Wireless Presentation System with 4K switcher with all its accessories as per the technical specifications document and quantity as per BOQ. Wireless presenter should support Mira cast/ Chrome cast/ Air play. It should be such that the presenter need not setup any exe file in laptop or mobile device for presenting wireless on screen. It should support one-click Skype for Business and Zoom meeting launch.
- 7.3 Supply, installation, testing and commissioning of cardioid condenser wireless clip on microphone as per the technical specifications document and quantity as per BOQ.
- 7.4 Supply, installation, testing and commissioning of 55" diagonal interactive display as per the technical specifications document and quantity as per BOQ. It should be able to be used in portrait as well as landscape mode.
- 7.5 Supply, installation, testing and commissioning of portable document camera with all its accessories as per the technical specifications document and quantity as per BOQ. The document camera should support wired as well as wireless connections.

8 The other requirements pertaining to the contract is given as below:

- 8.1 Supply, laying, installation, testing and commissioning of power cables for various locations of network switches and routers inside the rooms. The power supply point for different equipment is provided by CoR. However, contractor has to tap power from these power points. Supply, installation and commissioning of various MCB's installed inside the rooms is within the scope of contractor.
- 8.2 Proper electrical earthing must be ensured for all equipment being installed in all the rooms by the contractor.
- 8.3 Supply, installation, testing and commissioning of switches and routers as per the technical specifications document and quantity as per BOQ.
- 8.4 All software and firmware as supplied shall be with license given to RCIL/ CoR for lifetime and any upgrades within the currency of contract shall be free of cost.
- 8.5 The contractor shall prepare all the configurations in network devices and other smart solution devices and submit them to RCIL/ CoR.

- 8.6 The contractor shall prepare necessary design documentation, training document, application engineering, configuration detail, site drawing etc. and submit to employers for evaluation and approval.
- 8.7 All configurations, programming in smart solution equipment will be done by the contractor.
- 8.8 Contractor shall prepare all as built drawing and document and same will be submitted to RCIL/ CoR along with method statement for installation to be carried out.
- 8.9 Contractor shall coordinate with RCIL/ CoR representative for all interface requirements for other departments like civil and electrical works etc. and shall work in coordination with other department contractors.
- 8.10 Contractor shall submit method statement of step-by-step procedure for installation of equipment in different rooms of CoR.
- 8.11 Contractor shall inspect all the site/locations where the equipments are proposed to be installed shall plan, site activity, prepared drawing and prepare details.
- 8.12 All cable/connector/installation material required for the work to be supplied and installed by contractor. Cable trays, cable jumpers, cable ties, saddles, nut bolts, thimbles etc. are to be provided by the contractor for laying of cable, hanging of equipment along with wall/site structure. Any small civil work for drilling in the wall/making hole in the wall or making small cut-outs and restored same after completion of activity will be in scope of the contractor.
- 8.13 Contractor also shall provide training of installed smart solution system to RCIL/ CoR staffs.
- 8.14 All the systems installed and commissioned by contractor will be under DLP by the contractor for a period of 24 months from the date of successful commissioning of the system. All the installed systems shall also be maintained by the contractor for the next five years after completion of DLP. This period will be treated as CAMC (Comprehensive Annual Maintenance Contract) period.
- 8.15 During CAMC, it will be responsibility of contractor for maintain the spare and necessary support.
- 8.16 Any other items required for successful completion of the work shall be part of this contract.
- 8.17 CoR reserve the right to change/modify the tender work.

9. Original Equipment Manufacturer (OEM):

- 9.1 Microphone, Amplifier, DSPs and Mixer should be from the same OEM.
- 9.2 Active equipment OEMs like Video Conferencing, Video Wall, Switcher, Controller, Amplifier, Mixer, DSPs should have direct presence in India from last 5 years.
- 9.3 Active equipment OEMs like Video Conferencing, Video Wall, Amplifier, Switcher, Controller, Mixer, DSPs should have the Service Centre support in India for any service-related issue.
- 9.4 OEM shall submit the declaration/Undertaking for 9.1, 9.2 and 9.3 in Format provided in Appendices-7A-1, 7A-2, 7B-1, 7B-2, 7B-3, 7C-1, 7C-2, 7D-1, 7D-2, 7D-3 of FOT.

I. Employer Requirement regarding CAMC of Smart Solution equipment:

1. Brief Scope

The contractor will execute the work i.e., Comprehensive Annual Maintenance Contract (CAMC) for all smart solution items installed in CoR as part of this contract.

Schedule of Maintenance: -

a. Preventive Maintenance to be carried out on half yearly basis.

During Preventive Maintenance not limited to following activities to be carried out

- i. General cleaning of the equipment externally.
- ii. Check all the alarms and faults observed on the Equipment and take necessary action to remove them.
- iii. Check all the power supply to the equipment.
- iv. Check the health of the connectors of the Networking equipment.
- v. Check status of all parts of servers and cables.

The Preventive Maintenance is to be carried out in such a manner that overall functioning of the system and functional equipment are not affected.

b. Corrective Maintenance for equipment:

The Corrective/Breakdown Maintenance is to be carried out any time during **24 hrs. x 5 year** inclusive of all Sundays & Holidays, from the date of completion of DLP.

Name and Contact Number of the Service Engineer who will attend the failure is to be priority provided by contractor.

i. Minor Corrective Maintenance:

Inclusive of Repairing and Replacement of all Spares/Components and all other associated accessories, which are covered otherwise, and attention of all defects other than major defects.

- a) Response Time (Max.) - 01 hour
- b) Rectification Time (Max.) - 04 hours

Replacement warranty for the components on 24x7x04 basis*

ii. Major Corrective Maintenance

It covers the attention of all type of major Failures / Breakdown, which includes Repair/Replacement of Assemblies, Sub-Assemblies, and Components etc.

- a) Response Time (Max.) - 01 hour
- b) Rectification Time (Max.) - Should be in proportion with the failure

The decision regarding minor/major maintenance shall be of EMPLOYER, which will be binding on the contractor.

(*24x7x4 means - 24 Hrs. 7 Days of week and Service & replacement will be provided in 4 Hrs.)

Note:

1. EMPLOYER is an ISO-14001 & OHSAS 18001 certified Organization for Environment, Health & safety. The work is to be carried out as per International Norms/Standards and in such a manner that all premises always look Neat & Clean. Similarly, the waste disposal is also carried out in totally sealed manner without affecting the Environment.
2. All T&Ps and M&Ps, testing instruments etc. required for preventive & corrective maintenance shall be arranged by the contractor. No T&P shall be supplied to contractor by EMPLOYER
The work should be carried out under the supervision of EMPLOYER representative only.

2. Time Schedule:

Works envisaged under this contract are required to be carried out in all respects for a period of 05 years from the date of completion of DLP.

3. Do's and Don'ts for Staff:**DO'S:**

1. In case of fire/ anything unusual on electric equipment or wires, inform the respective Engineer-in-charge.
2. Extinguish fire by special extinguishers (carbon tetrachloride or carbon dioxide type, if available).
3. Ensure no water jet to be directed at the fire under any circumstances.

DON'Ts:

1. Do not enter any switching station or remote-control centre unless specially permitted.
2. Do not throw garbage in haste. Dispose it properly at designated place.

4. Safety:

- 4.1 Contractor shall adopt the necessary safety procedures to avoid any type of accidents to Employer's personnel, any other personnel & to avoid damages to CoR assets.
- 4.2 The contractor shall display necessary signage while carrying out the work.

5. Accidents:

- 5.1 It shall be the sole responsibility of the contractor to adopt all the safety measures & deploy personnel who are adequately trained in safety.
- 5.2 If any accident occurs within the station and associated area due to maintenance work or due to negligence on the part of the contractor's personnel it shall be the full responsibility of the Contractor.
- 5.3 If any damage occurs to the structures/ material & equipment due to maintenance work, the cost of damage will be recovered from the contractor's bill.
- 5.4 Contractor shall submit the indemnity bond such that the contractor's staff shall not claim of any type, payment, and employment etc. with employer.

Schedule-1
Maintenance Services

1.1 The Maintenance Services apply to all items defined as comprising the supply and installation of smart solution equipment in CoR.

1.2 The Maintenance Services include the provision of all labour and the provision of all materials and equipment together with spares (as given in schedule-2) necessary for the following: -

- i) The planning and management as described in **Schedule 3** of all routine inspection and preventative maintenance.
- ii) The performance of all routine inspection, attendance, configuration management, maintenance support, on-call maintenance, equipment examination and testing and preventative and corrective maintenance for all the equipments installed as part of this contract in accordance with the Maintenance Services Plan described in **Schedule 3**.
- iii) The correction of all defects of whatsoever nature and howsoever arising.
- iv) The repair of all damage, unless arising solely as a result of the act or omission of the Employer, its personnel, agents or contractors (but not the Maintenance Contractor or any of its subcontractors) or third parties.
- v) On completion of equipment examination and testing, on-call maintenance or corrective maintenance, the Maintenance Contractor shall report to Employer's Representative details of the faults including the identity of Equipment, timing of relevant events (site arrival, recovery, maintenance suspension, completion, etc.), failure symptoms, results of fault finding, cause of failure, action taken and component replaced. The data shall be used for monitoring the Maintenance Contractor's achievement of the performance targets.
- vi) Notwithstanding the above, the Maintenance Contractor shall maintain details, records of all maintenance services activities carried out on equipment and provide reports which the Employer's Representative required for the management of the maintenance services. Such reports shall include, but not be limited to the following:
 - Summary and details of repairs and component replacements undertaken within a given period.
 - History of the failure and maintenance services activities carried out on specific items of equipment.
- vii) To avoid repeated faults the maintenance contractor shall submit recommendations of alternations to preventive maintenance to the employer's Representative.
- viii) The planning and performance of all necessary safety audits and inspections in accordance with the requirements of the approved maintenance safety plan described in **schedule 3**.
- ix) The establishment and maintenance of a fault reporting centre, so that 7 days a week and for 24 hours a day, fault reports shall be recorded.
- x) Immediate action in response to a request from the Employer in the event of any

major incident including all necessary support to emergency services and the employer's incident manager and subsequently to assist in the Employer's investigation into the cause of the incident.

- xi) Subject to the approval of the Employer, the updating, detailing and as necessary, revision of the Maintenance Services Plan and of any other maintenance procedure in such a way as to take account of trends of failure or of other aspects of equipment performance as recorded during Maintenance of equipments.
- xii)** The furnishing to the Employer of regular reports regarding the progress of the services and prior to the commencement of the maintenance **S e r v i c e s** regarding the preparations thereto as further specified in clause 4 of **schedule 3**.

The Maintenance Contractor should strictly adhere to the Environment, safety and security guidelines during the execution of the Maintenance contract.

Schedule-2
Spares and Tools

The Maintenance Contractor shall maintain the inventory of maintenance Spares, Maintenance Equipment, tools and software up to date at all times and shall make this available to the Employer on demand.

1. All safety equipments like safety shoes, helmet etc. will be provided by contractor to its staff.
2. All necessary tools, measuring instruments, laptop, cleaning devices like blower, cleaning cloth etc. will be arranged and provided by contractor.
3. All consumable materials are to be provided by the contractor.

Schedule-3
Management of services

1. Organizational and Manpower Planning

The Maintenance contractor shall submit to the Employer for approval of the following plans; criteria and guidelines describing the manner in which the Maintenance Contractor intends to establish its organization.

- 1.1. A chart of all proposed positions in the Maintenance Contractor's Organization structure showing laterally equivalence of responsibility and vertically lines of reporting responsibility.
- 1.2. Job Descriptions for each position identified in this Organization structure which shall include but not be limited to the following: -
 - i) Job title;
 - ii) Job function;
 - iii) Position to which the holder is responsible;
 - iv) Position responsible to the holder;
 - v) Responsibility of holder for care of assets;
 - vi) Responsibility of holder for expenditure; and
 - vii) Responsibility of holder for safety critical maintenance activities.
- 1.3 Personnel specifications for each position identified in the organization structure which shall include but not be limited to the following: -
 - i) Educational qualification requirements;
 - ii) Experience requirements; and
- 1.4 Minimum Manpower to be deployed for achieving employer's requirement will be as per Annexure-1 of ITT and with prescribe qualifications and experiences as detailed in Annexure-2 of ITT.

2. Maintenance Services Planning

- 2.1 The Maintenance Contractor shall, prepare and submit to the Employer a proposed Maintenance Services Plan. This plan shall take account of the Employer's operation plans.
- 2.2. The Maintenance Services Plan shall be consistent with the smart solution equipments installed in CoR.
- 2.3. The Maintenance Services Plan shall also reflect the results of the hazard analysis and other requirements of the installed System.
- 2.4. The Maintenance Services Plan shall describe the strategy adopted to maximize the installed System availability during Scheduled Service hours taking account of the limited hours available for Maintenance between the end of one operating day and the beginning of

the next and shall, as a minimum, include the following: -

- i) Procedures for the preventive and corrective maintenance of each piece of equipment or sub-system which forms part of the scope of work of the Maintenance Services;
- ii) Schedules of preventive maintenance for each piece of equipment, structure or sub-system including a provisional program of anticipated Possessions required;
- iii) Schedules for cleaning of each piece of equipment.
- iv) Procedures for the maintenance of spares.

2.5. On-Call Maintenance

- i) The Maintenance Contractor shall provide 24 hours on-call maintenance for equipment recovery and restoration of systems or equipment in the shortest possible time to meet the overall performance targets.
- ii) The Maintenance Contractor shall respond immediately upon notification of a fault by the Employer Representative. The total response time of each call shall be within the specified standards and the Maintenance Contractor shall Endeavour to resume the faulty item to normal operation within the specified recovery time.
- iii) The Maintenance Contractor shall advise the Employer Representative at his arrival at the site and the commencement of on-call maintenance. Before the Maintenance Contractor leaves the site, they shall confirm with the Employer Representative that full operation has been restored.
- iv) The Maintenance Contractor shall conduct on-call maintenance and subsequent re-test in order to restore the equipment to full operation. The Maintenance Contractor shall check all the equipment parameters essential to the continued full operation of the equipment. Should any parameter be found to be outside the required nominal tolerances, the call-out staff shall adjust, such parameters back to the nominal values before leaving the site.
- v) The Maintenance Contractor shall provide experienced staff for 24 hours per day, 7 days per week, throughout the year, for call out to carry out on-call maintenance for the equipment.
- vi) The Maintenance Contractor shall provide a dedicated PSTN/ mobile no. maintenance hotline for, fault reporting 24 hours per day, 7 days per week, throughout the year readily accessible by the Employer's Representative or his delegates. Voice mail system or answering machine for fault reporting shall not be accepted.
- vii) The attendant of the maintenance PSTN/ mobile no should be able to communicate in both Hindi and English. The Maintenance Contractor shall also provide facsimile line and email address for written fault reporting of service non-critical faults.
- viii) The Maintenance Contractor shall submit fault notification procedures, including the detailed procedures, the primary and the secondary names of contact persons and all maintenance staff to the Employer's Representative. The list of maintenance staff and contact no. pager/telephone plus the notification procedure shall be readily submitted to the Employer's Representative.

ix) Any changes to the procedure shall be notified to the Employer's Representative a minimum of 7 days before such changes become effective.

2.6. Corrective Maintenance

The Maintenance Contractor shall provide maintenance including the following activities:

- i) Rectification, replacement or in-situ, local or overseas repair of defective, broken, faulty or unserviceable parts, modules and assemblies of the equipment as a result of normal wear and tear.
- ii) Testing of repaired and replaced components to ensure good working condition and in compliance with the equipment specification.
- iii) The Maintenance Contractor shall provide rectification for the equipment, which includes the collection of defective parts removed from the system for repairing at his workshop or manufacture's premises.
- iv) Corrective maintenance shall also include the use of Maintenance Contractor's special tools and test equipment for fault isolation and verification.
- iv) After repair, the Maintenance Contractor shall perform all adjustments, alignment, or calibrations as required for such parts so that they are fully functional and comply with the manufacturer specification.
- v) The repair of a defective part can only be considered as complete when it has been tested and verified of its fitness for use in the system and returned to stock.
- vi) The performance of the defective parts after shall not be degraded deteriorated due to repairing.
- vii) The transportation cost for pick-up and return of defective part/equipment from CoR to workshop or manufacture's premise as part of corrective maintenance shall be borne by contractor.

2.7. Preventive Maintenance

i) The Maintenance Contractor shall carry out planned and periodic-inspection, cleaning, servicing and maintenance for all the equipments installed as part of this contract on regular basis in order to keep them in a satisfactory working order. The following preventive maintenance activities on the equipment shall be provided:

- Cleaning, inspection, functional testing
- Replacement of worn out parts/defective components as a result of normal wear and tear.
- Housekeeping of the equipment and installation material.

ii) The Maintenance Contractor shall carry out at minimum the preventive maintenance tasks as specified in the Maintenance Services Plan document submitted by the contractor. The minimum preventive maintenance tasks and minimum frequencies shall only be changed upon the approval by the Employer's Representative in accordance with Clause viii)

of this section below.

iii) Notwithstanding the requirements of Clause ii) above, the Maintenance Contractor shall carry out additional preventive maintenance activities as he considers necessary to ensure that the equipment operates to the required performance and minimizes the failure/fault occurrence.

iv) The carrying out of preventive maintenance in accordance with the frequencies and standards specified in the Maintenance Services Plan document does not relieve the Maintenance Contractor of his obligation to achieve the equipment service performance targets.

v) The Maintenance Contractor shall send the preventive maintenance record sheets duly signed by his appointed representative completed with the necessary data to the Employer's Representative for each service within 7 days completion of services.

vi) The deviation of the actual date of the preventive maintenance service from that in the approved master program or rolling program shall require prior notification to and approval from the Employer's Representative.

vii) Any fault found or created during the preventive maintenance shall be rectified during the preventive maintenance and recorded as corrective maintenance. If rectification cannot be completed during preventive maintenance period and the fault will not affect the safe and reliable operation of the system, it may be scheduled at a later date as agreed with Employer's Representative.

viii) Adjustment to minimum maintenance frequency:

- The Maintenance Contractor may, in light of service experience, submit proposals to the Employer's Representative for approval for adjustments to the minimum maintenance frequency of preventive maintenance activities specified in the Maintenance Services Plan document. Such proposals shall be supported by a quantified risk assessment and / or maintenance requirements analysis.
- Acceptance of such proposals is solely at the discretion of the Employer's Representative.

2.8. Equipment Examination and Testing

The Maintenance Contractor shall carry out periodic examination and periodic testing of the safety equipment, at half-yearly interval for all equipments installed as part of this contract and make any necessary adjustments. Within 14 days of completion of such checks or adjustments, the Maintenance Contractor shall submit a service report to the Employer's Representative confirming that all safety and performance features of all the items are satisfactory and in compliance with the Local Regulation, or otherwise. The format of the service report is to be agreed with the Employer's Representative.

2.9. Attendance

i) The Maintenance Contractor shall provide attendance to maintenance, testing or interfacing works undertaken by the Employer on equipment included in the scope of the Maintenance Services.

ii) The Maintenance Contractor shall afford all necessary attendance upon the local government authorities to enable them to carry out such tests and inspections as required by the local regulation and any relevant regulations.

iii) The Maintenance Contractor shall afford all necessary attendance upon the Employer's Representative and local government authorities for the carrying out of investigation of accidents which are under his maintenance.

2.10. Configuration Management

i) The Maintenance Contractor shall ensure that all the spares, special tools and test equipment for system configurable items are maintained, calibrated and modified in accordance with the Configuration Management Plan.

ii) The Maintenance Contractor shall maintain and update configuration records of the equipment. This shall be inclusive of all modifications on hardware and software arrangements.

iii) The Maintenance Contractor shall prepare and submit the Configuration Management Plan for the Employer's Representative's approval.

iv) The Maintenance Contractor shall update all drawings, documentation and Engineering Document for the modification work due to the maintenance services and update the relevant control record.

v) The Maintenance Contractor shall monitor the versioning and modification of system configurable items.

vi) The Maintenance Contractor shall develop control and monitoring measures to manage the change of configuration items. Detail procedures, roles and responsibilities and all deliverables in the change control life cycle shall be clearly defined and documented in the configuration item release note, T&C record, test plan and procedures.

vii) The Maintenance Contractor shall develop the detailed procedures to manage the versioning of configuration item and baseline release.

viii) The Maintenance Contractor shall submit any change records, history and status and configuration item version information upon request by the Employer's Representative.

ix) The Maintenance Contractor shall carry out regular audits (functional and physical) to ensure efficiency and effectiveness of its configuration system.

x) Audit reports shall be submitted to Employer's Representative within one month after each audit.

xi) The Maintenance Contractor shall define the audit frequency and develop audit checklists.

xii) One set of hard and soft copies is required for software, document and drawing submission.

2.11. Maintenance Support

- i) The Maintenance Contractor shall provide maintenance support for the equipment that shall include steps to review the efficiency and effectiveness of the equipment maintenance.
- ii) When instructed to do so by the Employer's Representative, the maintenance Contractor shall perform technical investigations on incident, repeated fault and interface problems that arise. The Maintenance Contractor shall identify the cause of the incident/fault, and make short term and long term recommendations for rectification.
- iii) The Maintenance Contractor shall keep all the technical investigation records that shall be part of the Monthly Report.

3. Maintenance Safety Plan

- 3.1. The Maintenance Contractor shall submit to the Employer for review a maintenance safety plan which shall describe the rules, procedures and other measures that shall be implemented to reduce the possibility of injury to persons or damage to equipment in the performance of the Services.
- 3.2. The maintenance safety plan shall be consistent with the relevant parts of the Employer's operation plans and system safety plan and shall identify in particular the maintenance activities that have been classified as safety critical and shall set down the requirements for ensuring that safeguards as to the correct implementation of these activities are established.
- 3.3. The maintenance safety manager shall be responsible during the whole period of the Contract for keeping records, reviewing performance, updating procedures and reporting to the Employer on safety performance as set down in the maintenance safety plan.

4. Implementation of Maintenance Services

- 4.1. The Maintenance Contractor shall promptly commence to implement the plans, criteria and guidelines in the manner specified in its submittals (subject to any amendment there to approved by the Employer).
- 4.2. The Maintenance Contractor shall thereafter and at regular intervals (but not less than monthly) provide a written report to the Employer identifying progress and any difficulties encountered in the implementation of the program. The Maintenance Contractor's report shall include an updated schedule showing key milestones in the establishment of a fully trained maintenance organization.
- 4.3. Throughout the term of the Contract, the Employer shall be given access by the Maintenance Contractor to view data, both hard copy and that generated by the various computer based systems described above, and shall facilitate the transfer of data in usable format to the Employer to assist in the monitoring of the work performed by the Maintenance Contractor.
- 4.4. During the period of the provision of the Services, the Maintenance Contractor shall at regular intervals (but not less than monthly) provide a written report to the Employer identifying progress and any difficulties encountered in the performance of the Services. The format, scope and date of submission of this written report shall be to the Employer's requirements.

Schedule-4

Handover of Services

1. Handover of Documents spares and other Assets Held by the Maintenance Contractor

On expiry or termination of the Contract (for whatever reason) the Maintenance Contractor shall, subject to the provision of Indian law, provide as the minimum to the Employer the following: -

- i. All records relating to current inventory, spares on order, items awaiting disposal and items due for recording within the succeeding 6 months.
- ii. Maintenance manual with all updates and amendments issued up to and including the day of expiry or terminations.
- iii. Drawings of all systems, sub-systems and other drawings relating to the assets of the Employer incorporating all amendments, additions or deletions issued up to and including the day of expiry or termination.
- iv. The Maintenance service plan and maintenance safety plan containing the latest updates and amendment issued up to and including the day of expiry or termination.
- v. All records relating to incidents reported in according with the maintenance safety plan up to and including the day of expiry or termination.
- vi. The fully functioning fault Tracking system together with user operating manuals containing the latest updates and amendment issued up to and including the day of expiry or termination.
- vii. Any system developed or purchased, computer based or otherwise, for the facilitation of operations or maintenance of the installed equipments as part of this contract, together with user operating manuals containing the latest updates and amendments issued up to and including the day of expiry or termination.
- viii. Copies of all continuing sub-contracts and all records of the Maintenance contractor relating to all such sub- contract and sub-contractors.
- ix. Documentation relating to any modifications to the installed equipments planned but not yet implemented.

2. Inspection of the Equipment Maintained by the Maintenance Contractor:

Prior to the expiry of this Contract or in the event of earlier termination of this contract, those parts of the project covered by the scope of this contract together with the spares and software to be handed over and all of the Maintenance equipment, depot building, plant, equipment tools and test equipment in the care of the Maintenance Contractor during the performance of the service shall be jointly inspected by the employer and the Maintenance Contractor to ascertain that in all respects they are in Good working Order, except for the spares which shall be new and unused. Any items or items found not to be good working Order during such inspection shall be remedied forthwith by the Maintenance Contractor and then jointly re-inspected by the Employer and the Maintenance Contractor.

Once all items have been inspected and found to be in Good Working Order, the Employer shall provide to the Maintenance Contractor written notice of acceptance of handover of the services, such written notice not to be unreasonably withheld.

The bidder who will successfully integrate the above requirements will be treated as technically qualified.

Delivery Plan

The contractor shall complete the work in phased manner by fixing priorities to different stretches of work as per requirement of work from time to time and as per the key dates (Mile stones) indicated below:

D0: - Date of issue of LOA.

D1: - Date of take over certificate.

Key Dates	Work Description	Time to achieve the work	Remarks
KD-1	Submission of design documents and drawings for all locations.	D0 + 1 Month	
KD-2	Supply of items for display system for all locations of CoR	D0 + 2 Months	
KD-3	Installation, testing and commissioning of items for display system for all locations and Supply of rest all items (video conferencing system, switching system, control system, audio system, cabling and miscellaneous items) for all locations.	D0 + 3 Months	
KD-4	Installation, testing and commissioning of rest all items (video conferencing system, switching system, control system, audio system, cabling and miscellaneous items) for all locations.	D0 + 4 Months	
KD-5	Final Testing, commissioning of all items and System handover.	D0 + 5 Months	
KD-6	Start of DLP	D1	
KD-7	Completion of DLP and Start of CAMC	D1 + 24 Months	

Technical Specification

1. TELEPRESENCE ROOM (BLOCK – A)

1.1 Display System:

1.1.1 All in One multimedia digital podium:

- Digital Podium with House structure: Metallic (MS) powder-coated with castor wheels & brakes. Drawer for keyboard & mouse.
- External Connectivity: Having 2 X USB, one MIC XLR, 1 Audio IN (3.5mm Female), 1 HDMI IN, Power Socket with ON/OFF.
- Internal Connectivity: 4 x 2 HDMI Matrix Switcher with Auto-switching, Video resolution up to 4K@60hz 4:4:4 Inbuilt Audio extractors.
- 8 Universal 6 Amp Socket power strip.
- Provision of 19" Rack inside podium to fit in international standard equipment.
- Interactive Display: Interactive Panel Size of 21.5" Diagonal, Panel Type: IPS LCD, Display. Resolution: 1920 x 1080.
- Touch Technology: Electromagnetic Touch Digitizer Battery-less Pen with backside eraser.
- Inbuilt PC with latest windows 10 configuration and should provide Wireless connectivity, Bluetooth, Wi-Fi etc.
- Approved Makes- UNI/ AHA/ TECOM Or Equivalent

1.1.2 Document Ceiling Camera:

- Full HD 1080p Ceiling Mount Document Camera
- Supports high-definition output resolution
- One button optimization function,
- High-definition USB image transmission in real time
- Minimum 16 X Optical Zoom, LAN Port
- Projector type (DLP/LCD) select mode, 1200mm x 900mm Shooting Area
- Internal Memory for 100 JPEG Image
- Approved Makes- Lumens/ Wolf vision /Vaddio or equivalent

1.1.3 Active LED Video Wall:

- 163" LED Screen in 16:9 Aspect
- Pixel Pitch: 1.6mm or less
- Minimum Size: 12ft X 6.5ft with (+, -) 5 % variation.
- Resolution: 2304 X 1296 or higher
- UHD LED Controller of Same Brand
- Minimum Brightness 600 nits or more
- Lifetime 1,00,000 hours or more
- Contrast 5000:1 or more
- LED Controller of same Make as LED Screen with Original OEM Software for Configuration.
- Physical Parameters:
 - Total Resolution of Screen 2304 x 1296 or more
 - Diagonal Size 163" or more in 16:9 Aspect
 - Pitch pitch 1.6mm or less
 - Pixel Configuration 3 in 1 SMD
 - Physical Pixel Density (pixels/m²) 390625/Sq meter or more
 - Cabinet Depth- 70mm or less
 - Service access- Front
 - Processing 14 Bit or better

Brightness uniformity 97%
 Refresh Rate 3000Hz or better
 Colors Temperature 3500-9000 adjustable
 Hor. viewing angle 140° or better
 Vert. viewing angle 140° or better
 Operational temperature range 0 to +40
 Operational humidity 10-80% RH

- Optical Specifications:
- Resolution Supported:
 - 3840x2160 @ 60HZ or better
 - Output Pixel- 8.2 Million or more
 - LAN Output- 8 or more
 - Temperature Sensor- Yes
 - Chrome Adjustment- Yes
 - Original LED Configuration Software of LED Screen OEM- Yes
 - Brightness Adjustment- Yes
 - Scaling- Yes
 - HDR- Yes
- Certifications:
 - CE/UL/BIS or equivalent
- Operation Specifications:

IP rating Front-	IP30
IP rating Rear-	IP30
- Approved Make- LG/ Barco/ Christie/ Delta/Planar / Mitsubishi / NEC/ Daktronics or equivalent

1.1.4 65" 4K UHD Display:

- Screen Size- 65"
- Panel Technology- IPS or Edge LED BLU
- Native Resolution- 3840*2160
- Brightness- 350 nits or better
- Response time- 8ms
- Input-HDMI (2) or better, DP, DVI-D, Audio, USB 2.0
- Output-DP, Audio
- External Control -RS232C In/Out, RJ45 (LAN) In, IR
- Operating system: Inbuilt Windows/Web OS/Android / Tizen 4.0
- 24X7 operational with mounting arrangements
- UL/ FCC/BIS Certified. Or equivalent
- Approved Makes- LG/ Samsung / Christie or equivalent.

1.1.5 55" 4K UHD Display:

- Screen Size- 55"
- Panel Technology- IPS or Edge LED BLU
- Native Resolution-3840*2160
- Brightness-350cd/m2 or better
- Response time-8ms
- Input- HDMI (2) or better, DP, DVI-D, Audio, USB 2.0
- Output- DP, Audio (Off/Fixed/Variable)
- External Control -RS232C In/Out, RJ45 (LAN) In, IR
- Operating system: Inbuilt Windows/Web OS/Android/ Tizen 4.0

- 24X7 16/7 operational with mounting arrangements
- UL/FCC/BIS Certified or equivalent
- Approved Makes- LG/ Samsung / Christie or equivalent.

1.1.6 15" or better touch screen laptop:

- Screen Size 15" or better
- With processor i7, 10th Gen, 2.4GHz processor or better
- Memory (RAM)- 8GB
- OS-Windows 10
- HDD-512 GB SATA
- LED backlit keyboard
- 4 x USB interface, HDMI out, LAN network, NVIDIA Graphic card
- Built in Speakers
- Easily Customizable
- Cooling Fan etc.
- Approved Makes: HP / DELL / Lenovo.

1.2 Video Conferencing System :

1.2.1 Video Conferencing solution with 3 cameras:

- High-Definition Visual Communication System with 1+3 License and Camera 3 nos
- Video Standards:
H.264, H. 264 high profile/H.265 or better
H.264 in an Encrypted call should be possible
H.264 should be possible when sending or receiving two live video sources e.g., Presenter and Presentation.
- Video Frame Rate:
- Should support 60 fps with 1080p resolution in Motion mode.
- Video Features:
- Ability to send and receive two live simultaneous video sources in a single call, so that the image from the main camera and PC or document camera can be seen simultaneously.
- Should support H.239 and BFCP protocols
- The codec should support recording via USB or by adding a local external recorder."
- Video Output:
- Should have at least. 2 Nos. of HD (High Definition) output to connect Full High-Definition display devices such as plasma and projectors for both Video and content.
- The unit must provide the flexibility to display video or content one any of the video output.
- Video Input:
- Should have at least 3 HDMI inputs to connect multiple HD cameras or Video Inputs at Full HD 1080p resolution
- Should have HDMI / DVI (Digital Video Interface) input to connect PC/ Laptop directly to the Video conferencing system and display resolutions from HD 720p to Full HD 1080p
- Support for 1080p 60fps has to be present on the HDMI inputs
- "The system must have the ability to pair mobile devices such as Tablets and Smartphones based on iOS or Android platform's so that these devices can be used for:
 - 1) View the Presentation that is being shown in the VC call.
 - 2) Add and disconnect call.
 - 3) Take snapshot of the presentation being shown"
- The system must have the ability to pair with laptop for sending content without anywires to the VC system
- Audio standards supported:
G.711, G.722, G.722.1, 64 kbps MPEG-4 AAC-LD standard must be supported.

- Noise Reduction, Automatic Gain control, Acoustic Echo Canceller, Active Lip synchronization
 - Audio Inputs:
 - Should support 6 Microphone 4 Microphone inputs to connect 6 microphones 4 Microphone.
 - Echo Cancellation for every input must be available.
 - Audio Outputs:
 - Should support digital main audio output with the HDMI interface
 - Network Interfaces:
 - 1 LAN /Ethernet--10/100/1000 Mbps full duplex
 - Bandwidth:
 - H323/SIP up to 6 Mbps point-to-point.
 - Network Capabilities:
 - Packet Loss Based Down-speeding
 - H.323/ IP Features
 - QoS - Diff Serve
 - IP adaptive bandwidth management (including flow control)
 - Auto Gatekeeper discovery
 - Auto Network Address Translation (NAT) support
 - Standards based- Packet Loss Recovery feature
 - Should support URI Dialling
 - Support for H.245 DTMF tones in H.323
 - Must support IPv4 and IPv6 from day one.
 - Security:
 - Password protected system menu
 - ITU-T standards-based Encryption of the video call
 - Call should be encrypted end-to-end on IP
 - Should support Standards-based: H.235 v3 and AES Encryption via Automatic key generation and exchange. The same should be available in a call with Video with presentation (dual-video)
 - Ability to manually turn encryption ON or OFF should be there.
 - Automatic key generation and exchange
 - Camera:
 - Should have Three Cameras
 - There should be provision to control cameras individually through the touch Panel
 - Minimum of 10 x optical zoom
 - 1920 x 1080 pixels progressive @ 60fps
 - Each camera should have minimum +15°/-25° tilt, +/- 90° pan
 - The Camera and codec should be from the same manufacturer.
 - Multipoint Capability
 - Must have built-in Multi-conference capability to connect at least 1+3 sites at 720p in a continuous presence mode
 - All sites must be visible in a continuous presence mode with rate matching and transcoding such that different sites may connect at different speeds and protocols and still maintain a resolution of at least 720p
 - User Interface:
 - In order to provide a good user experience, the unit must be equipped with an intuitive Touch Screen/Panel for controlling the VC unit.
 - Must have ability to browse the directory, search a contact, change layouts, mute/unmute increase-decrease volume.
 - Approved Makes- Cisco/ Polycom/ Avaya/lifesize/vaddio or equivalent.
- 1.2.2 HDMI/ HDCI extender for cameras:
- 4K Ultra HD extender (Transmitter), HD signal transmission up to 70 meters / 230ft (1080p) , Shall be a Single CatX cable solution, including transmission of HD

Audio/Video, IR control, RS232 pass-through, and PoE , Fully compliant with HDMI/ HDCI 1.4, and compatible with HDMI 2.0/ HDCI (4K@60Hz 4:2:0), HDCP 2.2 compliant, Bi - directional IR control from source or display location , RS232 /LAN/USB port for firmware upgrading and serial communication , Universal power supply of high reliability and energy efficiency for reduced operation cost. Shall have 1 x HDMI/ HDCI IN , Input Signal Type: TMDS, Input Resolution Support 4K, 1080p, 1080i, 720p, 576p, 480p, 576i, 480i, Input DDC Signal :5 V p-p, Output :1 x HDBT/Twisted pair OUT, Output Signal Type: HDBT/Twisted pair, Output Resolution Support 4K, 1080p, 1080i, 720p, 576p, 480p, 576i, 480i, Maximum Pixel Clock: 297 MHz, Certification :CE, FCC

- Shall be supplied with HDBT/Twisted pair Receiver with below technical specs:
4K Ultra HD extender (Receiver), HD signal transmission up to 70 meters / 230ft (1080p) , Shall be a Single Cat X cable solution, including transmission of HD Audio/Video, IR control, RS232 pass-through, and PoE , Fully compliant with HDMI /HDCI, and compatible with HDMI 2.0 /HDCI (4K@60Hz 4:2:0), HDCP 2.2 compliant, Bi- directional IR control from source or display location , RS232/LAN/USB port for firmware upgrading and serial communication , Universal power supply of high reliability and energy efficiency for reduced operation cost. Shall have 1 x HDBT/Twisted pair IN , Input Signal Type: TMDS, Input Resolution Support 4K, 1080p, 1080i, 720p, 576p, 480p, 576i, 480i , Input Video Level: 0.5 -1.2 V p-p, Output :1 x HDMI/ HDCI OUT
- Output Signal Type: HDMI/ HDCI, Output Resolution Support 4K, 1080p, 1080i, 720p, 576p, 480p, 576i, 480i,
- Maximum Pixel Clock: 297 MHz,
- Certification: CE/FCC/BIS
- Approved Makes-Lightware / AMX -Harman / Extron/Kramer or equivalent

1.3 Switching System:

1.3.1 Wall-plate along with cable cubby:

- 3x1 digital switcher transmitter and receiver solution with scalar and extender
- Should support HDCP 2.2 and auto scaling at output
- Should have Transport Over a Single Category Cable
- 4K30 Support for source devices and displays
- Inputs (TX) – Transmitter includes 2x HDMI/(1HDMI + 1DP) and 1x VGA inputs
- Outputs (RX) – Receiver includes 1x HDMI input and scaled HDMI output or scaling through external receiver or switcher.
- Distance Transport – Eliminates the need for additional cable extenders by connecting the TX and RX with a single category cable
- Simplified Room Control – Control the display or projector and a screen from built-in, control ports on the RX
- Transmitter and receiver connect via a single category cable.
- External converter can be used for USB-C connectivity.
- Approved Makes- Lightware / AMX -Harman / Extron /Kramer or equivalent

1.3.2 Cable Cubby

Connection Ports Table mount modular multi-Connection Solution Cable manager, should be with 1 universal AC power outlet & cable pass-through for 1 HDMI, 1 USB-C and 1 Ethernet cable.

- Design Rectangular Shape

1.3.3 4K HDMI Matrix Switcher as per requirement :

- Presentation matrix switcher, shall have 4 HDMI inputs & 4 HD BaseT inputs and 4 HDMI & 4 HD BaseT outputs and must fulfil functional requirement
- Shall Support video source up to 4K@60Hz or better
- Fully compliant with HDMI 2.0. , HDCP 2.2 compliant
- Supports Analog and digital audio de-embedding for each HDMI output.
- Supports front panel, IR/RS232/LAN (Telnet API & Web UI) control options
- Audio input/output Balanced Stereo Audio,

- Control Ports infrared remote-control , RS-232 ports in transmitter , Ethernet, USB port,
- HDTV, HDCP & HD Base T 2.0 compliant Yes
- Default EDID Yes
- easily replaceable, low-noise FAN, hot-swappable cards
- HDMI Support — 3D, Deep Color, x.v.Color, Dolby True HD, Dolby Digital Plus/ other dolby,, DTS-HD®, and 7.1/ 5.1 multi-channel audio must fulfil functional requirement.
- Analog Audio Embedding/De-embedding
- Redundant Power supply
- Front Panel Lockout
- Power Supply – 100-240V AC
- Approved Makes- Lightware / AMX -Harman / Extron / Kramer or equivalent.

1.3.4 HDMI Transmitter:

- 4K Ultra HD extender (Transmitter)
- Shall be a Single Cat X cable solution, including transmission of HD Audio/Video, IR control, RS232 pass-through, and PoE
- Fully compliant with HDMI 1.4, and compatible with HDMI 2.0 (4K@60Hz 4:2:0), HDCP 2.2 compliant, Bi-directional IR control from source or display location
- RS232/LAN/USB port for firmware upgrading and serial communication
- Universal power supply of high reliability and energy efficiency for reduced operation cost.
- Shall have 1 x HDMI IN , Input Signal Type: TMDS, Input Resolution Support 4K, 1080p, 1080i, 720p, 576p, 480p, 576i, 480i, Input DDC Signal :5 V p-p, Output :1 x HDBT/Twisted pair OUT
- Output Signal Type: HDBT/Twisted pair, Output Resolution Support 4K, 1080p, 1080i, 720p, 576p, 480p, 576i, 480i, Maximum Pixel Clock: 297 MHz
- Certification :CE, FCC or BIS
- Approved Makes- Lightware / AMX -Harman / Extron / Kramer or equivalent.

1.3.5 Scaler solution as per requirement :

- HD Base T Transmitter : 4K Ultra HD extender (Transmitter), Shall be a Single Cat X cable solution, including transmission of HD Audio/Video, IR control, RS232 pass-through, and PoE .
- Fully compliant with HDMI 1.4, and compatible with HDMI 2.0 (4K@60Hz 4:2:0), HDCP 2.2 compliant, Bi-directional IR control from source or display location , RS232/LAN/USB port for firmware upgrading and serial communication ,
- Universal power supply of high reliability and energy efficiency for reduced operation cost.
- Shall have 1 x HDMI IN , Input Signal Type: TMDS, Input Resolution Support 4K, 1080p, 1080i, 720p, 576p, 480p, 576i, 480i , Output :1 x HDBT OUT, Output Signal Type: HDBT, Output Resolution Support 4K, 1080p, 1080i, 720p, 576p, 480p, 576i, 480i,
- Maximum Pixel Clock: 297 MHz,
- Certification :CE/FCC/BIS
- HDBT Receiver: 4K@60Hz Scaler Capable of Via Cat6a/7 cables: Up to 100m/328ft: 4K@30Hz YUV 4:4:4 24bit or 4K@60Hz YUV4:2:0 24bit, Up to 100m/328ft: 1080p@60Hz 48bit
- Support analog and digital audio de-embedding for HDMI Audio Out
- Fully compliant with HDMI 1.4, and compatible with HDMI 2.0 (4K@60Hz, 4:2:0), HDCP 2.2 compliant
- Bi-directional IR, RS232 and Ethernet pass-through over a Cat X cable
- Default auto-scaler for HDMI Scaling Out or output resolution adjustment by API

- Built-in CEC controller for HDMI OUT , Built-in RS232 controller for pre-loading or storage of RS232 commands of the display device
- Automatic CEC and RS232 command to power on or standby the display by detecting input signal status , Input Signal Type HDBT , Input Video Level 0.5-1.2 V p-p
- Output: 1 x HDMI OUT, 1 x S/PDIF OUT (optional), 1 x AUDIO OUT but must fulfil the functional requirement.
- Output Signal Type HDMI: TMDS, Audio Output S/PDIF OUT, L/R OUT Audio Format, /PDIF OUT: PCM 2.0, Dolby 2.0, Dolby 5.1, L/ R OUT: PCM 2.0, Video Impedance 100 Ω , Maximum Pixel Clock 594 MHz, Control via Telnet, RS232, IR.
- Approved Makes- Lightware / AMX -Harman / Extron / Kramer or equivalent.

1.3.6 Wireless Presentation System:

- Supports wireless sharing (includes all required installation accessories)
- Should support one-click Skype for Business and Zoom meeting launch
- Share content wirelessly from a mobile device or PC using Airplay or Google Cast
- View documents from the web, cloud storage, network drive, or a USB thumb drive.
- Built-in document viewers allow for side-by-side view of two documents
- 4K support for dual monitors provides an optimal collaboration experience,
- CONNECTORS : 4x USB 3.0 2x USB 3.1, 2x USB 2.0, 2x HDMI 1x HDMI Input and 1 x HDMI Output , Ethernet 2x RJ-45 connector for gigabit Ethernet
- Analog Stereo Input 1/8" mini-stereo jack and Analog Stereo Output 1/8" mini-stereo jack
- HDMI Resolution Up to 4K30
- WIRELESS :Wi-Fi 802.11 a/b/g/n/ac
- Shall support two users laptop or handheld device simultaneously on single screen
- Approved Makes- Creston / AMX-Harman / Kramer or equivalent.

1.4 Audio/Sound System:

1.4.1 2-Channel 500W Class D or higher Power Amplifier:

- Dual Channel Digital Power Amplifier, 2 x400 W or higher @ 70/100V
- On-board Digital Signal Processor and includes these integrated features:
- Input Router, Input Delay – Up to 1000ms, Input Parametric EQ – 8 band, Crossover, Output Parametric EQ – 8 band
- Output Delay – Up to 100ms, Limiter, should be controllable, configurable and monitorable through standard TCP/IP network.
- Each output channel should be capable of providing either 70V or 100V for high impedance applications.
- Completely configure the amplifier using an intuitive front-panel interface, should have GPIO/AUX Port to Recall presets, mute channels, monitor faults, power on/off the amplifier, and more through a combined
- Impedance 4-8 Ω , 70/100V
- THD+N < .5 or better%
- Gain 34 dB or better
- Frequency Response 20 Hz - 20 kHz
- Channel Separation (Crosstalk) >60 dB @ 1 kHz
- Signal to noise ratio 80 dB
- Audio Inputs 2 unbalanced, 2 balanced
- Audio Outputs 2 Speaker output
- Built-in DSP Standard mixer, loudspeaker EQ, 9-band PEQ, Vpeak/Vrms limiters, delay, band pass, mute/output polarity inversion
- A/D-D/A Converters 24-bit / 48 kHz
- Approved Makes- Crown -Harman / Labgruppen / Bose / Kramer or equivalent

1.4.2 Dual Channel Power Amplifier

Amplifier Power 2x 120 W, 70/100V
Frequency Response 100 Hz – 20 kHz

Inbuilt Dynamic EQ settings per output

THD+N < 0.5% or better

Approved Makes- Labgruppen / Bose / Kramer/JBL-Harman or equivalent.

1.4.3 Compact Full Range Ceiling Speaker:

- Two Way 4" or above Ceiling speaker
- Frequency Range 100Hz - 19 kHz
- 6.5 inch high output LF driver and 0.75 inch tweeter
- Nominal Coverage Angle 110° conical coverage maximum Transformer Taps 40 W, 20 W or better, 7.5 W or better @ 70V or 100V
- Rated Maximum SPL : 98 Db or better
- Approved Makes- JBL- Harman / Tannoy / Bose / Martin Audio / EAW

1.4.4 Column Speakers:

- Constant Beam width Technology
- Line Array Column Loudspeaker with 100W or better Power
- Built-in 70V/100V transformer
- Frequency Range: 100 Hz - 19kHz or better
- Coverage: Vertical: 20°, Horizontal 150° or better
- Sensitivity (2.83V@ 1m): 93 dB or better
- Power Capacity: 600W peak and 100W or better cont.
- Enclosure: Fiberglass reinforced ABS cabinet
- Approved Makes- JBL- Harman / Tannoy / Bose / EAW / Fohhn Audio / d&B Audiotechnik or equivalent

1.4.5 Digital Signal Processor:

Inputs 8 mic / line
Outputs 8 line
AEC 8 x mic /line with AEC

Sampling Rate 48kHz
A/D-D/A Converters 24-bit
THD+N .3% or better
EIN < 128dBu
Propagation Delay 4ms at 48 kHz

- 8 x 8 Networked Digital Signal Processor With AEC ,
- DSP with 8 inputs and 8 outputs as minimum
- 48V phantom power on all analog inputs
- Open architecture software configurable, Separate logic processing power
- 2 digital audio bus RJ 45 Port , 1 Ethernet port for Monitoring and configuration, \
- Capable to handle +5V unloaded logic output voltage
- Should have speech filter engine , Capable to control 3rd party devices with TCP IP and RS 232
- Should have 1nos of RS 232 port for integration with control System
- Should have Bi-Directional Locate Functionality
- Should have 48 or more digital audio Channel Bus
- Should have monitoring LED for COM, STAT, ERR and PWR
- Approved Makes- BSS- Harman / Biamp / Bose / Xilica or Equivalent

1.4.6 Digital Audio Conference Control Unit:

- Central Control unit:-

- Supply of Control unit should have the RS-232 interface for the programming purpose for Auto Tracking of Cameras.
- It should have a built in DSP chip which can adjust the audio output and sensitivity automatically.
- System should have the facility to be able to connect the cameras for look at me feature through required hardware.
- The control unit can control up to 10 chairman units & 999 delegate units by extension power supply.
- It should have 128x64pixels digit LCD monitor display, the configurations can be set up and displayed.
- The system should have auto testing facility when powered on.
- Should support built-in voting feature.
- Technical specification:-
Frequency response : 100HZ~12KHZ(± 1 dBV)T.H.D. : $\leq 0.1\%$
S/N Ratio : ≥ 75 dBV
- Conference microphone connection : CAT5E cable RJ-45 port x 4 sets
- Ethernet Technology: 10 MBPS Ethernet.
- Approved Makes- BXB / Bayer dynamics/ Sennheiser Bosch / Brahlar / DIS or equivalent.



Table Mount Digital Multimedia Chairman and Delegate Unit

Flush Mount Digital Discussion Conference unit:

- Chairman Microphone Unit:-
- Supply of Complete Flush Mount Chairman Unit should support Cat5 cabling for digital Series-Parallel daisy chain connection and with push to talk and priority speak button, pluggable gooseneck microphone easy to remove when not in use and with light ring for easy identification of the speaker.
- Microphone length should be 16" to 22"
- Microphone should get auto off when not in use and also get auto activated when someone starts to speak
- MIC auto-Off: 10-99 seconds
- Technical Specification:-
Frequency response : 100HZ~16KHZ
Sensitivity : ≥ -50 dB
S/N ratio : ≥ 65 dB
Auto Gain Control (AGC) -45 0dB
Connections RJ-45 Jack x 2 or equivalent
Earphone jack 3.5Ø Stereo
- Approved Makes- BXB / Bayer dynamics/ Sennheiser
- Delegate microphone unit:-
- Supply of Complete Flush Mount Chairman Unit should support Cat5 cabling for digital Series-Parallel daisy chain connection and with push to talk, pluggable gooseneck microphone easy to remove when not in use and with light ring for easy identification of the speaker.
- Microphone length should be 16" to 22".
- Microphone should get auto off when not in use and also get auto activated when someone starts to speak.
- Technical Specification:-
Frequency response :100HZ~16KHZ
Sensitivity : ≥ -50 dB
S/N ratio : ≥ 65 dB
Auto Gain Control (AGC) -45 ~ 0dB
Connections RJ-45 Jack x 2 or equivalent
Earphone jack 3.5Ø Stereo

- Approved Makes- BXB / Bayer dynamics/ Sennheiser Bosch / Brahlar / DIS or equivalent.

1.4.8 Power Supply unit for Conference system:

- Power extension with Capable of simultaneous control between main control unit and extension power supply.
- RJ45 * 5 (Output *4 / Input * 1).
- Protection: Short circuit / Overload / Over voltage.
- Enable to supply up to 50 microphone units (Max 20 units in a single output).
- Switch / Power supplies for supplying additional power to the conference devices, Total power supply as per OEM Design.
- Approved Makes- BXB / Bayer dynamics/ Sennheiser Bosch / Brahlar / DIS or equivalent

1.4.9 Handheld wireless microphone system:

- Wireless Microphone system with 500-860 MHZ carrier frequency band
- Up to 16 pre-programmed frequencies within the same frequency band
- Audio bandwidth 35 - 20,000 Hz
- THD at 1 kHz: <0.5% (Receiver) ,Signal-to-noise: 110 dB(A) (Receiver),
- Wideband FM Modulation, Up to 12 Simultaneous channels
- Upto 14 hours operation with one single AA battery or better
- Receiver should have microphone level and line level output
- Transmitter should have display to show the battery and LED to show the Muted /Unmuted status
- Sensitivity 6.3 dB V / -100 dBm
- Should have Microprocessor-controlled diversity, T.H.D.: 0.7 % (Transmitter)
- Infrared programmable, RF output power: 10 or 50 mW 250 mW
- Approved Makes- AKG-Harman/ Bayer Dynamics/ Sennheiser / Shure or equivalent.

1.4.10 Lapel wireless microphone system:

- Wireless Lavalier Microphone System,
- Wireless Microphone system with MHZ carrier frequency band,
- Up to 16 pre-programmed frequencies within the same frequency band
- Audio bandwidth 35 - 20,000 Hz
- THD at 1 kHz: <0.5% (Receiver), Signal-to-noise: 110 dB(A) (Receiver),
- Wideband FM Modulation, Up to 12 Simultaneous channels
- Upto 15 hours 14 hours operation with one single AA battery or better
- Receiver should have microphone level and line level output
- Transmitter should have display to show the battery and LED to show the Muted /Unmuted status
- Sensitivity 6.3 dB V / -100 dBm
- Should have Microprocessor-controlled diversity, T.H.D.: 0.7 % (Transmitter)
- Infrared programmable, RF output power: 10 or 50 mW
- Approved Makes- AKG-Harman/ Bayer Dynamics/ Sennheiser / Shure or equivalent.

1.5 Control Systems:

1.5.1 Control Processor:

- AV controller with Network Interface card
- Should support IPv6
- Should Supports IEEE Standard for Port-based Network Access Control with the ability to grant or deny network access to devices wishing to attach to a LAN based on credentials tied to the device rather than to a user
- Should have High Performance Architecture

- Flexible Programming Platform Java,
- Should have ability to manage secure port TLS and SSH communications with a remote device or server
- Enhanced Diagnostics On Serial and IR Ports
- Ultra-Fast 1600 MIPS processor or equivalent, 512 MB Onboard RAM, 1x M Non-Volatile Memory, 4 GB SDHC FLASH Memory, 1x RU x 1/3 Rack Space, 1 x Interface link ,1x 10/100 LAN Interface, 4x Digital I/O Ports, 1x RS232/422/485 Port, 1 x RS232-Only Port ,2x IR/Serial Output Ports ,1x IR Receiver Port
- Approved Makes- AMX- Harman / Extron / Creston / Kramer or equivalent.

1.5.2 Lighting Control Wall-mount:

- 6 channel lighting control system with dimming and On Off.
- The same shall be integrated with master AV system to work as single platform for user.
- Approved Makes- Lutron / Crestron / Extron or equivalent.

1.5.3 Network Switch:

- 24 port PoE+ Network Switch
- 24 port 10/100/1000Mbps RJ45 ports
- Works with IEEE 802.3af/at compliant devices, expanding home and office networks
- Web-based user interface and management utility simplify configuration
- Approve Makes :Cicso/HP or equivalent

1.5.4 Wireless Router:

- Wifi Router with 2.4 GHz WLAN,WPS, 5 GHz WLAN, Internet
- Should have reset button & power switch
- Should be 802.11ac Wi-Fi specification
- WPA/WPA2 encryption to secure your wireless traffic etc
- Approve Makes : Linksys / D-Link / Netgear

1.5.5 Room Scheduling System with hallway sign indicator:

- 7" Wall mount Touch Panel
- Fully configurable, Capacitive Touch Screen
- Resolution (WH) Landscape: 1280x800,
- Aspect Ratio (WH) Landscape: 16:9
- Brightness 330 cd/m2, Contrast Ratio 800:1
- SDRAM 2 GB, Flash 8 GB or more
- Ethernet 10/100, RJ-45 connector, USB (1) USB host 2.0, Type A ports, Speakers 4 ohm, 2 Watt, 300 Hz cutoff frequency
- Shall be supplied with OEM recommended POE Injector
- Approved Makes- AMX- Harman / Extron / Creston / Kramer

2. Meeting Room (Block – A)

2.1 Display System:

2.1.1 Ultra-short throw interactive projector:

- Ultra short throw laser projector
- DLP single Chip technology
- 3,200 ANSI Lumens or More
- Resolution WXGA
- Inputs: HDMI x 2 ,VGA x 1 + monitor out or VGA x 2,USB A ,Composite video

- Outputs: VGA monitor out, Audio output
- Control: RS232, LAN,
- Built in Speaker
- Complete with ultra-short Throw Lens
- Light source should be Laser.
- Approved Makes : Christie / Epson / Benq/Panasonic.

2.1.2 Ceramic whiteboard as projector screen:

- With minimum reflection smooth surface of size 8 X 5 sqfts.

2.1.3 13" or better Interactive pen computer:

- Minimum 13" size touch based pen computer
- Inbuilt processing (intel i7)
- Windows 10 OS or better
- 512 GB Storage
- 16 GB DDR
- Resolution: WQHD (2560 x 1440)
- Approved Makes : Parblo / Wacom / Benq

2.2 Switching System:

2.2.1 Wall-plate along with cable cubby:

- 3x1 digital switcher transmitter and receiver solution with scalar and extender
- Should support HDCP 2.2 and auto scaling at output
- Should have Transport Over a Single Category Cable
- 4K30 Support for source devices and displays
- Inputs (TX) – Transmitter includes 2x HDMI and 1x VGA inputs
- Outputs (RX) – Receiver includes 1x HDMI input and scaled HDMI output
- Distance Transport – Eliminates the need for additional cable extenders by connecting the TX and RX with a single category cable
- Simplified Room Control – Control the display or projector and a screen from built-in, control ports on the RX
- Transmitter and receiver connect via a single category cable.
- External converter can be used for USB-C connectivity.
- Approved Makes- Lightware / AMX -Harman / Extron or equivalent.

2.2.2 HDMI Matrix Switcher:

- 9x2 All-in-One Presentation Switcher with Networked AV
- Shall have VIDEO Inputs- (7) independent HDMI inputs w/ HDCP 2.2 4096x2160@60Hz 4:4:4 and (2) independent VGA HDMI/USB-C inputs 1920x1200@60HZ 4:4:4,
- Shall have Video Outputs- (2) independent HDMI outputs w/ HDCP 2.2 4096x2160@60Hz 4:4:4 – both independently scaled and mirrored for (4) local HDMI outputs
- Shall have AUDIO- Inputs (6) independent balanced stereo inputs, (2) independent MIC/line level inputs and (2) balanced outputs , Shall have built -in 60W into 4Ω/stereo 60W into 8Ω, or mono 100W (70V), or 100W (100V) (user-selectable) ,and build-in Digital Signal Processing- Filters and acoustic echo cancellation on all channels , Input Gain Line : -18dB to +24dB @ 1dB step and MIC/Line: -18dB to +56dB @ 1dB step, Frequency Response - 20~20kHz, +/- 0.5dB, Audio THD+N - <0.1%, 20~20kHz at nominal level, Audio -S/N - > 90dB at max balanced output , Bass -24dB to +18dB @ 100Hz, Treble -24dB to +18dB @ 8kHz ,Shall have Built-in/External
- (6) port-managed Gigabit Ethernet switch, (3) PoE+ ports and (3) non-PoE ports, Shall have built-in 4k60 supported networked AV Card slots to expend the video network . Regulatory Compliance FCC/CE/NTRL/BIS.
- Video Switching 9x2 audio and video switching, routed to the HDMI and HDBT output simultaneously, 3x HDMI input Type A Female Connector, 1x VGA Input, 1x Analog Stereo Inputs , 1x HDMI Outputs ,1x HD Base T; supports digital video, audio, bidirectional control , USB2.0 extension and power , HDCP Support Yes;

HDCP 1.4 and 2.2, Key Management System for Fast Switching: nEDID Management A preferred EDID can be selected for each input or any display EDID can be mirrored to any input independently

- Approved Makes- Lightware / AMX -Harman / Extron / Kramer or equivalent.

2.2.3 Scaler Solution as per requirement:

- HD BaseT Transmitter: 4K Ultra HD extender (Transmitter), Shall be a Single Cat X cable solution, including transmission of HD Audio/Video, IR control, RS-232 pass-through, and PoE .
- Fully compliant with HDMI 1.4, and compatible with HDMI 2.0 (4K@60Hz 4:2:0), HDCP 2.2 compliant, Bi-directional IR control from source or display location , RS232/LAN/USB port for firmware upgrading and serial communication ,
- Universal power supply of high reliability and energy efficiency for reduced operation cost.
- Shall have 1 x HDMI IN , Input Signal Type: TMDS, Input Resolution Support upto 4K@60Hz 4:4:4,, 1080p, 1080i, 720p, 576p, 480p, 576i, 480i Output :1 x HDBT OUT, Output Signal Type: HDBT, Output Resolution Support 4K, 1080p, 1080i, 720p, 576p, 480p, 576i, 480i,
- Maximum Pixel Clock: 297 MHz,
- Certification :CE/FCC/BIS
- HDBT Receiver: 4K@60Hz 4:4:4 Scaler Capable of Via Cat6a/7 cables: Up to 100m/328ft: 4K@30Hz YUV 4:4:4 24bit or 4K@60Hz YUV4:2:0 24bit, Up to 100m/328ft: 1080p@60Hz 48bit
- Support analog and digital audio de-embedding for HDMI Audio Out
- Fully compliant with HDMI 1.4, and compatible with HDMI 2.0 (4K@60Hz, 4:2:0), HDCP 2.2 compliant
- Bi-directional IR, RS232 and Ethernet pass-through over a CatX cable
- Default auto-scaler for HDMI Scaling Out or output resolution adjustment by API
- Built-in CEC controller for HDMI OUT , Built-in RS232 controller for pre-loading or storage of RS232 commands of the display device
- Automatic CEC and RS232 command to power on or standby the display by detecting input signal status , Input Signal Type HDBT , Input Video Level 0.5-1.2 V p-p
- Output: 1 x HDMI OUT, 1 x S/PDIF OUT (optional), 1 x AUDIO OUT, but must fulfil the functional requirement.
- Output Signal Type HDMI: TMDS, Audio Output S/PDIF OUT, L/R OUT Audio Format, /PDIF OUT: PCM 2.0, Dolby 2.0, Dolby 5.1, L/R OUT: PCM 2.0, Video Impedance 100 Ω, Maximum Pixel Clock 594 MHz, Control via Telnet, RS232, IR.
- Approved Makes- Lightware / AMX -Harman / Extron / Kramer or equivalent.

2.2.4 Wireless Presentation System:

- Supports wireless sharing (includes all required installation accessories)
- Should support one-click Skype for Business and Zoom meeting launch
- Share content wirelessly from a mobile device or PC using Airplay or Google Cast
- View documents from the web, cloud storage, network drive, or a USB thumb drive.
- Built-in document viewers allow for side-by-side view of two documents
- 4K support for dual monitors provides an optimal collaboration experience,
- CONNECTORS: 4x USB 3.0, 2x USB 2.0, 2x HDMI, Ethernet 2x RJ-45 connector for gigabit Ethernet.
- Analog Stereo Input 1/8" mini-stereo jack and Analog Stereo Output 1/8" mini-stereo jack
- HDMI Resolution Up to 4K30
- WIRELESS :Wi-Fi 802.11 a/b/g/n/ac
- Shall support two users laptop or handheld device simultaneously on single screen
- Approved Makes- Creston / AMX-Harman / Kramer / Barco or equivalent.

2.3 Audio/Sound System:

2.3.1 Dual Channel Amplifier:

Amplifier Power 2x 120 W, 70/100V
 Frequency Response 55 Hz – 20 kHz
 inbuilt Dynamic EQ settings per output
 THD+N < 0.5% or better

- Approved Makes- JBL- Harman / Labgruppen / Bose / Kramer or equivalent

2.3.2 Compact Full Range Ceiling Speaker:

- Two Way 4" or above Ceiling speaker
- Frequency Range 100Hz - 19 kHz
- 6.5 inch high output LF driver and 0.75 inch tweeter
- Nominal Coverage Angle 110° conical coverage maximum Transformer Taps 40 W, 20 W or better, 7.5 W or better @ 70V or 100V
- Rated Maximum SPL : 98 Db or better
- Approved Makes- JBL- Harman / Tannoy / Bose / Martin Audio / EAW or equivalent.

2.3.3 Rack Mountable 14 Channel Mic/Line mixer:

- 14-channel or higher Digital Mixer
- Shall have 14 inputs to USB drive and connected Mac/PC
- Shall have compression and reverb and delay processing
- Shall have Real-time frequency analyser (RTA) on inputs and outputs
- Shall have Compatible with Mac/PC DAWs and other music software
- 20-band graphic EQ, noise gate, compressor, and Automatic Feedback Suppression on all outputs, 4-band parametric EQ, high-pass filter, compressor, de-esser, and noise gate on input channels
- Shall Record and mix with the warmth of 20 professional-quality preamps inputs , Built-in dual-band Wi-Fi control, Can be controlled wirelessly
- Approved Makes- Soundcraft- Harman / Yamaha / Biamp / RCF or Equivalent

2.3.4 Digital Audio Conference Control Unit:

- 8 x 8 Networked Digital Signal Processor With AEC ,
- DSP with 8 inputs and 8 outputs
- 8 Control Inputs and 6 Logic Outputs for GPIO Integration
- 48V phantom power on all analog inputs, THD: <0.01% 20Hz to 19KHz, +10dBu output, Crosstalk: <-75dB
- Open architecture software configurable, Separate logic processing power
- 2 digital audio bus RJ 45 Port , 1 Ethernet port for Monitoring and configuration , Capable to handle +5V unloaded logic output voltage
- Should have speech filter engine , Capable to control 3rd party devices with TCP IP and RS 232 , Should have 1nos of RS 232 port for integration with control System, Should have Bi-Directional Locate Functionality ,Should have 48 or more digital audio Channel Bus
- Should have monitoring LED for COM, STAT, ERR and PWR
- Approved Makes- BSS- Harman / Yamaha / Biamp/Xilica or Equivalent

2.3.5 Cardioid Condenser Boundary Microphone with Mute Switch and LED Indicator:

- Avoid interference from mobile phones and laptops, (RF Suppression), Logic control.
- Approved Makes- AKG-Harman/ Bayer Dynamics/ Sennheiser or equivalent

2.4 Control Systems:

2.4.1 Network Switch:

- 24 port PoE+ Network Switch
- 24 port 10/100/1000Mbps RJ45 ports
- Works with IEEE 802.3af/at compliant devices, expanding home and office networks
- Web-based user interface and management utility simplify configuration

- Approve Makes :HP/Cisco or equivalent

3. LIBRARY (BLOCK – A)

3.1 Display System:

3.1.1 All in one Touch PC along-with headphones:

- Screen Size-21" or better
- Memory-8GB
- OS-Windows 10 Pro
- HDD-1 TB SATA
- Processor- I5 or better
- 10th Generation Intel
- Mouse and Keyboard
- Intel Wi-Fi 6 AX201, Dual-band 2x2 802.11ax with MU-MIMO + Bluetooth 5.0
- Wireless Driver
- Approved Makes- Dell / HP / Lenovo

3.1.2 Flat Touch Kiosk.

- Touch Kiosk Solution with Integrated PC and with Dual OS
- Display Size : 21" or better
- Resolution : 1920x1080
- Contrast Ratio : 5000:1
- Video Input : HDMI, VGA, RS-232
- Touch Technology : Projected Capacitive
- Touch Points : 10
- Inbuilt OS- Android/ Windows
- Approved Makes :Allsee / Screenage / Vustr or equivalent

3.2 Audio/Sound System:

3.2.1 Rack Mountable Mic/Line mixer as per specifications:

- 8 x 8 Networked Digital Signal Processor With AEC ,
- DSP with 8 inputs and 8 outputs
- 6 Control Inputs and 6 Logic Outputs for GPIO Integration
- 48V phantom power on all analog inputs, THD: <0.01% 20Hz to 20KHz, +10dBu output, Crosstalk: <-75dB
- Open architecture software configurable, Separate logic processing power ,2 digital audio bus RJ 45 Port , 1 Ethernet port for Monitoring and configuration , Capable to handle +5V unloaded logic output voltage
- Should have speech filter engine , Capable to control 3rd party devices with TCP IP and RS 232 , Should have 1nos of RS 232 port for integration with control System
- Should have Bi-Directional Locate Functionality ,Should have 48 or more digital audio Channel Bus, Should have monitoring LED for COM, STAT, ERR and PWR
- Approved makes- BSS- Harman / Biamp / Yamaha/Xilica or Equivalent

3.2.2 Dual Channel Amplifier:

- Amplifier Power 2x 120 W, 70/100V
- Frequency Response 55 Hz - 20 kHz
- inbuilt Dynamic EQ settings per output
- THD+N < 0.5% or better
- Approved Makes- JBL- Harman / Labgruppen / Bose/Kramer or equivalent

3.2.3 Compact Full Range Ceiling Speaker:

- Two Way 4" or above Ceiling speaker
- Frequency Range 100Hz - 19 kHz
- 6.5 inch high output LF driver and 0.75 inch tweeter

- Nominal Coverage Angle 110° conical coverage maximum Transformer Taps 40 W, 20 W or better, 7.5 W or better @ 70V or 100V
- Rated Maximum SPL : 98 Db or better
- Approved Makes- JBL- Harman / Tannoy / Bose / Martin Audio / EAW or equivalent

3.2.4 Gooseneck Microphone:

- Wired Gooseneck Microphone with Desktop base unit and on/off switch
- Desktop gooseneck Mic
- Audio frequency bandwidth =70 - 18000 Hz
- Signal to Noise:64 dB-A
- Length =500 mm
- Voltage =9 to 52 V Power Interface
- Approved Makes- AKG-Harman/ Bayer Dynamics/ Sennheiser / Electrovoice or equivalent.

3.2.5 Library Management Software with 2 Barcode Scanners and door sensors:

- RFID chip inside all (more than 8000) books of library.
- Software should maintain the directory of books physically present inside the library as well as subscribed eBooks of CoR.
- Software should be able to read RFID of book used barcode scanner and used to issue a book.
- Door Sensors should check the book at gate and indicate with light and sound, if any unissued book is going out of library.
- Software should be able to locate the books placement inside racks of library.
- Software application should be secured with username and password, with defined roles and privileges for different users like librarian and CoR staff etc.
- Software should allow access to eBooks only in premise of CoR and CoR's hostel.
- Automatic sms / email to user regarding issuance of book and in case due date of issued book is approaching etc.

3.3 Control Systems:

3.3.1 Network switch:

- 16 port PoE+ Network Switch
- 16 10/100/1000Mbps RJ45 ports
- Works with IEEE 802.3af/at compliant devices, expanding home and office networks
- Web-based user interface and management utility simplify configuration
- Approve Makes :Cisco/HP or equivalent

4. MPD Room (Block-B)

4.1 Display System.

4.1.1 Digital podium with PC:

- Digital Podium with House structure: Metallic (MS) powder-coated with castor wheels & brakes.
- Drawer for keyboard & mouse.
- External Connectivity: Having 2 X USB, one MIC XLR, 1 VGA IN Audio IN (3.5mm Female), 1 HDMI IN, Power Socket with ON/OFF
- Internal Connectivity: 4 x 2 HDMI Matrix Switcher with Auto-switching
- Video resolution up to 4K2K@60hz 4:4:4 Inbuilt Audio extractor. 8 Universal 6 Amp Socket power strip.
- Provision of 19" Rack inside podium to fit in international standard equipment.
- Interactive Display: Interactive Panel Size of 21.5" Diagonal
- Panel Type: IPS LCD, Display. Resolution: 1920 x 1080
- Touch Technology: Electromagnetic Touch Digitizer Battery-less Pen with backside eraser.

- PC given should provide Wireless connectivity, Bluetooth.
- Approved Makes- UNI / AHA / TECOM or equivalent.

4.2 Audio/Sound System.

4.2.1 Cardioid Condenser wireless clip on microphone:

- Wireless Lavalier Microphone System,
- Wireless Microphone system with MHZ carrier frequency band ,
- Up to 16 pre-programmed frequencies within the same frequency band
- Audio bandwidth 35 - 20,000 Hz
- THD at 1 kHz: <0.3% (Receiver) , Signal-to-noise: 120 dB(A) (Receiver),
- Wideband FM Modulation, Up to 12 Simultaneous channels
- Upto 14 hours operation with one single AA battery or better
- Receiver should have microphone level and line level output
- Transmitter should have display to show the battery and LED to show the Muted /Unmuted status
- Sensitivity 6.3 dB V / -100 dBm
- Should have Microprocessor-controlled diversity, T.H.D.: 0.7 % (Transmitter)
- Infrared programmable, RF output power: 10 or 50 Mw
- Approved Makes- AKG-Harman/ Bayer Dynamics/ Sennheiser or equivalent

4.2.2 Mixer

- Input 4 mono and 3 stereo Input
- 3 band / 2 band EQ
- 1 AUX Send
- Effects and compressor/limiter
- Support for Optional player / recorder via USB
- Frequency response: 100 Hz to 20 kHz
- Distortion (THD + N): <0.03%
- Approved Make - Yamaha / RCF/ Mackie/Soundcraft -Harman/Equivalent

4.2.3 Compact Full Range Ceiling Speaker:

- Two Way 4" or above Ceiling speaker
- Frequency Range 100Hz - 19 kHz
- 6.5 inch high output LF driver and 0.75 inch tweeter
- Nominal Coverage Angle 110° conical coverage maximum Transformer Taps 40 W, 20 W or better, 7.5 W or better @ 70V or 100V
- Rated Maximum SPL : 98 Db or better
- Approved Makes- JBL- Harman / Tannoy / Bose / Martin Audio / EAW or equivalent.

4.2.4. Dual Channel Amplifier:

- Amplifier Power 2x 120 W, 70/100V
- Frequency Response 55 Hz - 20 kHz
- inbuilt Dynamic EQ settings per output
- THD+N < 0.5% or better
- Approved Makes- JBL- Harman / Labgruppen / Bose / Kramer or equivalent.

5. EDP Room (Block-B)

5.1 Display System

5.1.1 1-Chip DLP Projector

- Projector type 1-chip DLP digital projector
- Resolution 1,920 x 1,200
- Brightness 3600 Lumens
- Aspect ratio " 16: 9

- Inputs 1 x HD BaseT, 1 x HDMI, 1 x VGA
- Control IR, RS232
- Network connection LAN and RJ-45 connection
- Front projection.
- Light source should be Laser.
- Approved Makes - Christie / DPI /Panasonic /NEC or Equivalent

5.1.2 Ceramic whiteboard as projector screen:

- With minimum reflection smooth surface of size 8 X 5 sqfts.

5.1.3 Professional quality Lectern with integrated audio receiver and speaker system:

- Lectern Amplifier with built in 40W amplifier.
- Detachable gooseneck condenser microphone.
- Provision for connecting a wired microphone through a 6.3mm phone jack or a line source through an XLR connector
- Separate output connectors for LINE OUT & REC OUT through mini male XLR & 6.3mm phone socket respectively, allowing the lectern system to be connected to external amplifiers for further amplification, if required
- Approved Makes:

5.1.4 Cardioid Condenser wireless clip on microphone:

- Wireless Lavalier Microphone System,
- Wireless Microphone system with MHZ carrier frequency band ,
- Up to 16 pre-programmed frequencies within the same frequency band
- Audio bandwidth 35 - 20,000 Hz
- THD at 1 kHz: <0.3% (Receiver) , Signal-to-noise: 120 dB(A) (Receiver),
- Wideband FM Modulation, Up to 12 Simultaneous channels
- Upto 14 hours operation with one single AA battery or better
- Receiver should have microphone level and line level output
- Transmitter should have display to show the battery and LED to show the Muted /Unmuted status
- Sensitivity 6.3 dB V / -100 dBm
- Should have Microprocessor-controlled diversity, T.H.D.: 0.7 % (Transmitter)
- Infrared programmable, RF output power: 10 or 50 mW
- Approved Makes- AKG-Harman/ Bayer Dynamics/ Sennheiser or equivalent.

5.1.5 Audio Mixer:

Mixer

- Input 4 mono and 3 stereo Input
- 3 band / 2 band EQ
- 1 AUX Send
- Effects and compressor/limiter
- Support for Optional player / recorder via USB
- Frequency response: 100 Hz to 55 kHz
- Distortion (THD + N): <0.03%
- Approved Make - Yamaha / RCF/ Mackie/Soundcraft -Harman/Equivalent

6 Auditorium (Block-B)

6.1 Display System.

6.1.1 1-Chip DLP Projector

- Projector type 1-chip DLP digital projector
- Resolution 1,920 x 1,200
- Brightness 3600 Lumens

- Aspect ratio " 16: 9
- Inputs 1 x HD BaseT, 1 x HDMI, 1 x VGA
- Control IR, RS232
- Network connection LAN and RJ-45 connection
- Front projection
- Approved Makes - Christie / DPI / NEC/Panasonic or Equivalent

6.1.2 Ceramic whiteboard as projector screen:

- With minimum reflection smooth surface of size 12 X 7 sqfts.

6.1.3 Digital podium with PC compatible configuration for annotation functionality:

- Digital Podium with House structure: Metallic (MS) powder-coated with castor wheels & brakes.
- Drawer for keyboard & mouse.
- External Connectivity: Having 2 X USB, one MIC XLR, 1 VGA IN Audio IN (3.5mm Female), 1 HDMI IN, Power Socket with ON/OFF
- Internal Connectivity: 4 x 2 HDMI Matrix Switcher with Auto-switching
- Video resolution up to 4K2K@60hz 4:4:4 Inbuilt Audio extractor. 8 Universal 6 Amp Socket power strip.
- Provision of 19" Rack inside podium to fit in international standard equipment.
- Interactive Display: Interactive Panel Size of 21.5" Diagonal
- Panel Type: IPS LCD, Display. Resolution: 1920 x 1080
- Touch Technology: Electromagnetic Touch Digitizer Battery-less Pen with backside eraser.
- PC given should provide Wireless connectivity, Bluetooth
- Approved Makes- UNI / AHA / TECOM or equivalent.

7 Miscellaneous Items (Block-B)

7.1 All-in-One Portable 200-Watt or better Speaker:

- All in one PA system with 10" woofer or more with 6x 2" or more HF Drivers
- Class D amplifier: 250W LF + 130W HF or better , 6 Channel Mixer with master volume
- Shall be supplied with wireless mic with following specifications:
- Wireless Lavalier Microphone System,
- Wireless Microphone system with MHZ carrier frequency band ,
- Up to 16 pre-programmed frequencies within the same frequency band
- Audio bandwidth 35 - 20,000 Hz
- THD at 1 kHz: <0.3% (Receiver) , Signal-to-noise: 120 dB(A) (Receiver),
- Wideband FM Modulation, Up to 12 Simultaneous channels
- Up to 14 hours operation with one single AA battery or better
- Receiver should have microphone level and line level output
- Transmitter should have display to show the battery and LED to show the Muted /Unmuted status
- Sensitivity 6.3 dB V / -100 dBm
- Should have Microprocessor-controlled diversity, T.H.D.: 0.7 % (Transmitter)
- Infrared programmable, RF output power: 10 or 50 Mw
- Approved Makes- Harman / Mipro / Samson / RCF or equivalent.

7.2 Wireless Presentation System:

- Supports wireless sharing (includes all required installation accessories)
- Should support one-click Skype for Business and Zoom meeting launch
- Share content wirelessly from a mobile device or PC using Airplay or Google Cast
- View documents from the web, cloud storage, network drive, or a USB thumb drive.
- Built-in document viewers allow for side-by-side view of two documents
- 4K support for dual monitors provides an optimal collaboration experience,

- CONNECTORS : 4x USB 3.0 2x USB 3.1, 2x USB 2.0, 2x HDMI 1x HDMI Input and 1 x HDMI Output , Ethernet 2x RJ-45 connector for gigabit Ethernet
- Analog Stereo Input 1/8" mini-stereo jack and Analog Stereo Output 1/8" mini-stereo jack
- HDMI Resolution Up to 4K30
- WIRELESS :Wi-Fi 802.11 a/b/g/n/ac
- Shall support two users laptop or handheld device simultaneously on single screen
- Approved Makes- Creston / AMX-Harman / Kramer or equivalent.

7.3 Cardioid Condenser wireless clip on microphone:

- Wireless Lavalier Microphone System,
- Wireless Microphone system with MHZ carrier frequency band ,
- Up to 16 pre-programmed frequencies within the same frequency band
- Audio bandwidth 35 - 20,000 Hz
- THD at 1 kHz: <0.3% (Receiver) , Signal-to-noise: 120 dB(A) (Receiver),
- Wideband FM Modulation, Up to 48 Simultaneous channels
- Upto 14 hours operation with one single AA battery or better
- Pilot Tone, transmission to know the transmitter battery status
- Receiver should have microphone level and line level output
- Transmitter should have display to show the battery and LED to show the Muted /Unmuted status
- Sensitivity 6.3 dB V / -100 dBm
- Should have Microprocessor-controlled diversity, T.H.D.: 0.7 % (Transmitter)
- Infrared programmable, RF output power: 10 or 50 mW
- Approved Makes- AKG-Harman/ Bayer Dynamics/ Sennheiser or equivalent.

7.4 55" diagonal interactive display:

- 55" diagonal interactive display
- 400nits brightness
- can be used as portrait & landscape mode
- Annotation with mounting Display cart
- Approved Makes: Samsung/LG or equivalent.

7.5 Portable Document Camera:

- Pixel-3840x2160
- Output resolution-4K(2160p), 1080p, 720p, XGA
- Close-up - 10cm
- Sensor-1/3" 13MP CMOS
- Zoom -30x
- Output -Wi-Fi / HDMI x1 / USB 2.0
- Built-in Microphone-Yes
- Pan- Yes
- Supports Wireless Connection -Yes
- Wireless Standard-IEEE 802.11a/b/g/n/ac
- Approved Makes- Lumens / Wolfvision or equivalent.

8 CABLE SPECIFICATIONS

Introduction

This specification covers the design and construction requirements for low smoke, zero halogen/low halogen cables for cabling system for all sub systems of telecommunication systems, except equipment specific cables, for DMRTS. System specific specifications of each type of cable are also detailed in this specification.

- Cables shall comply with the latest version of the relevant requirements of British Standards, IEC standard, ASTM standards, ITU recommendations or equivalent international standards.
- All cables shall have continuous operating life of at least 15 years.
- All cables used in external or open areas shall be the armoured type and shall be able to withstand rain and ultra violet rays. As a minimum, all Telephone, Public Address, CCTV, Data and Power cables laid in outdoor ducts/ trenches/ trays from the Station(e.g. to Ancillary Buildings) and within the Outdoor Depot area (e.g. one building to another) ,shall be armoured type . Optical Fibre for all areas shall be armoured type.
- The Employer's Representative shall have free access to the works of the manufacturer and to be present at all reasonable times and shall be given facilities by the manufacturer to inspect the manufacturing of the cables at any stage of manufacture. He shall have the right to reject in whole or part of any work or material that does not conform to the terms of this specification or/and may order the same to be removed/ replaced or altered at the expense of the manufacturer.
- The Contractor shall satisfy the Employer's Representative by producing certificate from a recognized testing laboratory or otherwise that the materials used and the cable itself is of the highest possible standards and complies with all relevant specifications. In case of no relevant test certificates being available tests shall be carried out by the Contractor (manufacturer) as those laid down with relevant specification but this shall not preclude any test desired by the Employer's Representative to determine the quality of the cable. For Cables as per RDSO/TEC specifications, the Contractor shall have to get the cables inspected by RDSO/TEC and all cost therein has to be borne by the Contractor.

Fire and Smoke Performance Requirements

- It is essential that hazardous conditions arising from overheating or ignition of cables especially in the underground areas are avoided.
- The cables for installation in underground/tunnel areas shall be manufactured from fire retardant/ resistant, low smoke, zero halogen materials. (FRLSOH)
- The cables for installation in elevated/at-grade section shall be manufactured as per Indian Railways RDSO/TEC specifications, wherever available in TEC/RDSO specifications for a particular cable type. Wherein the RDSO/TEC specifications are not available then the specifications as laid down herein shall be complied with.
- The requirements described herein below shall meet the anti-termite, pest resistant properties as far as possible and mechanical & electrical properties of the cables both during and after installation to meet the other requirements of the specifications.
- The contractor shall comply in general with the pertinent requirements of NFPA 130 (Fixed Guide way Transit system 2007 edition issued by the US National Fire Protection Association).
- All insulation shall be moisture and heat resistant, with temperature ratings appropriate to the application conditions and in no case lower than 60 degree C(except Data)

Flammability

- The bedding and over sheath of the cable shall have a minimum oxygen index of 30 when tested in accordance with ASTM D2863/BS 2782: Part 1: Method 141 /NES 715.
- The temperature index of the bedding and over sheath of the cable shall not be less than 250 o C when tested in accordance with ASTM D2863/ BS 2782: Part 1: Method 143/ NES 715.

Fire Resistance

- Unless otherwise specified for the fire-resistant requirements, all cables shall comply with reduced fire and flame propagation requirements of IEC 60332 -1 & 60332-3 Cat C for single and bunched cables respectively. Loudspeaker cables in addition shall be of fire survival type to ensure circuit integrity for three hours during fire as per IEC 60331.

Corrosive and Acid Gas Emission

- The level of hydrochloric acid of the fire-retardant low smoke, zero halogen compound (filler bedding, over sheath etc.) and the insulation of the cable shall not be greater than 0.5% when tested in accordance with BS 6425/IEC 60754: Part 1. In the case of fire retardant, low smoke, low halogen compound (filler bedding over sheath etc.) and the insulation of the cables, the level of the hydrochloric acid shall not exceed 20%. Corrosion and acid gases are defined as those, which are determined as hydrochloric acid.

Smoke Emission

- The value of the smoke generated shall meet the requirements of transmittance $\geq 40\%$ as per IEC 1034/BS 6724.

9 Switch Rack Wall Mount Network Rack as per BOQ

Electronic control equipment like switches shall be housed in appropriate rack suitably enclosed in metal cabinets of a type acceptable to the Employer's Representative.

The equipment shall be of modular construction to facilitate maintenance, repair and replacement of parts. Standard commercial parts shall be utilized to the maximum extent possible.

Cubicles, Equipment Racks, cable and wiring Termination Racks shall not be filled to greater than 80% of their capacity at the completion of the works.

The equipment shall be suitable for the environment in which it is to be used and it shall be designed to prevent ingress of all vermin and to minimize the ingress of moisture, dust and dirt.

Outdoor equipment shall be sealed against the ingress of dust, moisture and vermin. A minimum IP rating of IP65 under IEC529 is essential.

The rack should be lockable from front side:

- 9.1 Should have a Cable Manager and Patch Panel (24 I/O Ports)
- 9.2 Should have Front Door with Toughened Glass quality.
- 9.3 Should have Adjustable Mounting rails - Front and Back.
- 9.4 Should have 2 Fan Mounting provision.
- 9.5 Power Strip minimum (4 points)
- 9.6 Should have Top and bottom cable entry provides Optimal flexibility for cable management.
- 9.7 Should have Easy wall mount provision.
- 9.8 Should have Frame structure with max loading capacity up to 60kg.
- 9.9 Should have Compatible with International standards.

Special Conditions of Contract (SCC)

S.No.	Description
1	<p>Duties and Authorities of the Engineer</p> <p>The Engineer shall carry out the duties specified in the Contract. The Engineer shall have no authority to amend the Contract.</p> <p>The Engineer may exercise the authority specified in, or necessarily to be implied from the Contract. If the Engineer is required to obtain the specific approval of the Employer before exercising such authority, such requirements shall be as stated in Special Conditions of Contract. Any requisite approval shall be deemed to have been given by the Employer for any such authority exercised by the Engineer.</p> <p>The Engineer shall have no authority to relieve the Contractor of any of his duties, obligations, or responsibilities under the Contract. Any proposal, inspection, examination, testing, consent, approval or similar act by the Engineer (including absence of disapproval) shall not relieve the Contractor from any responsibility, including responsibility for his errors, omissions, discrepancies, and non-compliance.</p> <p>The Engineer shall copy to the Employer all communications given or received by him in accordance with the Contract.</p> <p>Functions of Engineer</p> <p>In addition to the duties mentioned above:</p> <ul style="list-style-type: none"> (i) Shall watch and inspect the Works, monitor and examine any material to be used and workmanship employed by the Contractor in connection with the Works; (ii) Shall carry out such duties and exercise such powers vested in the Engineer in accordance with the provisions of the Contract; (iii) Shall issue instructions which in his opinion are necessary for the execution of the Works; and (iv) May issue any other instruction which in his opinion is desirable in connection with the Works. <p style="padding-left: 40px;">In case The Engineer is employee of any agency hired by the Employer, the Engineer shall take the approval of the Employer for all technical and financial matters otherwise he shall be deemed to have taken the approval of the Employer.</p>
2	<p><u>Performance Security Amount</u></p> <p>2.1 Within 30 days from date of issue of the Letter of Acceptance, the successful Tenderer shall furnish Performance Security, for an amount given in Appendix-1 of FOT in types and proportions of currencies in which the Contract Price is payable either in the form of a Bank Draft, FDR or in the form of a Bank Guarantee from a branch in India of a scheduled foreign bank or from a scheduled commercial bank in India acceptable to the Employer. The Performance Security shall be valid up to 6 months beyond the Defect Liability Period.</p> <p>The Extension of time for submission of Performance Security beyond 30 (Thirty) days up to 60 days from date of issue of LOA may be given by the Authority who is competent to sign the Contract Agreement. However, a Penal Interest of 15% per annum shall be charged for the entire period i.e. from the date of issue of LOA to the date of submission of Performance Security. In case the Contractor fails to submit the requisite Performance Security within 60 days from the date of issue of LOA, the Contract shall be annulled duly forfeiting any dues, payable against the Contract. The failed Contractor shall be debarred not only from participating in re-tender for that work but also in any other tender of RCIL for a period of two years from date of issue of LOA. The approved form provided in the "Instructions to Tenderers documents shall be used for Bank Guarantee.</p> <p>In case, if Contract is terminated due to Contractor's default in terms of Clause 20, the full Performance Security amount shall be forfeited. Shortfall amount, if any, shall be recovered by the Employer from monies due to the Contractor under the Contract including, without limitation, and the Employer shall have the power to recover any balance from monies due to the Contractor under any other Contract between the Employer and the Contractor. In case the Contract value exceeds beyond 25% of the Original Contract Value, the Contractor shall have to submit additional Performance Security as follows:</p> <ul style="list-style-type: none"> a. If variation amount on plus side exceeds 25% of the Original Contract Value either due to Employer's variation or due to Contractor's variation, the Contractor shall submit additional performance security equal to an amount given in Appendix-1 of FOT of the variation amount

2.2	<p>exceeding 25% of the Original Contract Value.</p> <p>b. No additional Performance Security will be required to be submitted if the variation amount on plus side is within 25% of the Original Contract Value.</p> <p>Release of Performance Security. The Performance Security shall become due and shall be paid to the Contractor on signing of the Performance Certificate after the expiry of the final Defect Liability Period as per EOI.</p>
3	<p>Facilities for and coordination with Others.</p> <p>The Contractor shall not impede and shall afford all necessary facilities, access and/or services to the Employer, Engineer, Designated Contractors, utility undertakings, other relevant authorities and other contractors (whether employed by the Employer or not) who are carrying out on, or in the vicinity of, the Site, works not included in the Contract but forming part of the Project:</p> <p>a. The Contractor shall take all reasonable steps to ensure that the Works are coordinated and integrated with the design, manufacture, installation execution and testing of such other works and shall in particular (but without limitation):</p> <ol style="list-style-type: none"> comply with any direction which the Engineer may give for the integration of the design of the Works with the design of any other part of the Project; consult, liaise and co-operate with those responsible for carrying out such other works, including where necessary, in the preparation of the respective designs, the preparation of coordinated Programmes, method statements, co-ordination drawings and specifications together with arrangements of service priorities and zoning; participate in Integrated Testing and Commissioning of the system with Designated Contractors and demonstrate to the satisfaction of the Engineer that the Works have been designed and constructed in a manner compatible with the works of Designated Contractors. <p>b. The Contractor shall undertake design co-ordination with other contractors who are carrying out works forming part of the Project as described in the Employer's Requirements. At the end of each such co-ordination period, the Contractor and the other contractor with whose works the interface period refer shall jointly state in writing that their design co-ordination activities are complete and that their respective designs are integrated and can be finalized without interference with each other's designs or the designs with which their designs have already been integrated. A copy of this joint written statement shall be provided to the Engineer within 7 days of the end of the said design co-ordination period. Unless and until copies of all relevant and necessary design co-ordination statements have been submitted to the Engineer, the Engineer shall be entitled to suspend any review or further review of the Contractor's or the other contractor's design submissions. Such suspension shall not be grounds for the Contractor to claim nor shall be entitled to receive an extension of time or additional payments.</p> <p>c. The Contractor shall provide within the Site, staging, storage and unloading areas for the use of Designated Contractors, if any, who are undertaking trackwork, fare collection system, supply, testing and commissioning of Rolling Stock, escalators, lifts, signaling and telecommunications and traction power installation works, etc. Separate locations shall be provided for each such contractor. The exact size and location of these staging, storage and unloading areas, and the commencement date shall be coordinated and agreed during the design interface period with each Designated Contractor.</p> <p>d. Any other contract which depends for its execution on the Contract or upon which the Contract is dependent for its own execution shall be identified by the Engineer as a "Designated Contract". The Contractor shall provide attendance on Designated Contractors in accordance with the Employer's Requirements and as instructed by the Engineer. The identity of the contractor for a Designated Contract may not be known before the execution of the Contract but this shall not be a ground for the Contractor to object to the subsequent appointment of a Designated Contractor.</p> <p>e. The Contractor shall in accordance with the requirements of the Engineer coordinate his own Works with that of Designated Contractors through Coordinated Installation Programme (CIP) stated in the Employer's Requirements, or as the Engineer may require, and shall afford the Designated Contractors all reasonable opportunities for carrying out their works.</p> <p>f. The Contractor shall afford all reasonable opportunities, for carrying out their work, to other contractors employed by the Employer and their workmen respectively and the workmen of the Employer who may be engaged on or near the Site of any work, ancillary to the Works, but not included in the Contract and shall not cause them inconvenience.</p> <p>g. If the Contractor shall suffer delay by reason of failure by any Designated Contractor to meet the specified installation interfacing and co-ordination, completion dates, which delay shall be caused otherwise than by fault of the Contractor, or, if compliance with sub-clause (f) herein shall involve the Contractor in delay beyond that which could be reasonably foreseen by an experienced contractor at the time of tender, then the Engineer shall take such delay into account in determining any extension of time to which the Contractor is entitled under the Contract.</p> <p>h. It shall be the responsibility of the Contractor to ensure that the full extent of the Works under the Contract and the works to be carried out by Designated Contractors within the Works or, in, on, under,</p>

	<p>through and over the Site are coordinated and integrated in their design, manufacture, installation and construction. Such responsibility shall neither be mitigated nor in any other way affected by virtue of similar responsibilities being placed on other contractors.</p> <p>The Contractor shall be deemed to have made adequate allowance in the Contract Price and in the Works Programme in respect of these obligations.</p> <p>If any act or omission of the Contractor whether directly or indirectly results in the delay in the execution of the works of a Designated Contractor, the Contractor, in addition to his liability in respect of liquidated damages if they become due, shall pay to the Employer, or the Engineer may deduct from Interim Payment Certificates such amount as the Engineer shall have certified in respect of additional payments or costs to the Designated Contractor in respect of such delay.</p> <p>Coordination with other Contractors</p> <p>The contractor for this package shall plan and execute work in coordination and in co-operation with other contractors working for adjacent/other packages</p>
4	<p>Sufficiency of Tender</p> <p>The Tenderer shall be entirely responsible for sufficiency of rates quoted by him in his tender. The Contractor (Successful Tenderer) shall be paid for only at quoted/accepted rates for the items of works executed as per BOQ.</p>
5	<p>Access Route</p> <p>The Contractor shall be deemed to have satisfied himself as to the suitability and availability of the access routes he chooses to use. The Contractor shall (as between the parties) be responsible for the maintenance of access routes. The Contractor shall provide at his cost signs or directions, which he may consider necessary or as instructed by Engineer for the guidance of his staff, labour and others. The Contractor shall obtain any permission concessions and related easement right that may be required from the relevant authorities for the use of such routes, signs and directions.</p> <p>The Employer will not be responsible for any claims which may arise from the use or otherwise of any access route. The Employer does not guarantee the suitability or availability of any particular access route, and will not entertain any claim for any non-suitability or non-availability for continuous use during construction of any such route.</p> <p>All operations for the execution of the Works shall be carried out so as not to interfere unnecessarily with the convenience of the public or the access to public or properties owned by the Employer or by any other person.</p>
6	<p>Electricity</p> <p>Electricity shall be provided by Employer at the site as per requirement of work at free of cost. However, contractor shall ensure efficient and minimum use of above resource adhering to CoR's energy policy. Necessary arrangements for extending above facilities up to the point of use shall be carried out by contractor at its own cost. The contractor shall tap the Electricity as per IE Rules & IE Act (Latest) duly complying all safety precautions.</p> <p>Utilization of above resource shall be strictly limited up to the fulfilment of contractual obligation of the contractor.</p>
7	<p>Employer Supplied Machinery and Materials</p> <p>The Employer will not provide any machinery or materials under the Contract.</p>
8	<p>Security of the Site</p> <p>The Contractor shall take all measures necessary to ensure such security, including exercising control over all persons and vehicles which are employed or engaged on the Site or in connection with the Works or the other works comprising the Project and with the security arrangements applicable to any other site within the Project.</p> <p>The Contractor shall arrange the issue of passes for the admission of all persons and vehicles to the Site or to any part thereof and may refuse admission to or remove from the Site any person or vehicle failing to show an appropriate pass on demand to any duly authorised person.</p> <p>If required by the Engineer, the Contractor shall submit a list identifying all persons to whom passes have been issued together with two photographs of each person and all entities to which a pass has been issued in respect of any vehicle and shall satisfy the Engineer of the bonafides of any such person or entity.</p> <p>The Contractor shall not, without the written permission of the Engineer or otherwise in accordance with the Contract, allow access to the Site to any person unless the presence on Site of such person is necessary in connection with the execution of the Works or with the discharge of the duties of any relevant authority.</p> <p>For the purposes of this Clause only, "Site" shall include off-Site places of manufacture or storage and the Contractor's Work Areas and shall include, areas provided to the Contractor by others.</p>

9

Construction and/or Manufacture Documents

The Manufacture Documents shall comprise the technical documents specified in the Employer's Requirements, documents required to satisfy all regulatory approvals, documents described in Sub Clause 5.6 (As Built Document), and Sub Clause 5.7 (Operations and Maintenance Manuals). The Contractor shall prepare all Manufacture Documents in sufficient detail and shall also prepare any other document necessary to instruct the Contractor's personnel. The Engineer shall have the right to inspect the preparation of all these documents wherever they are being prepared.

Each of the Construction and/or Manufacture Documents shall, when considered ready for use, be submitted to the Engineer for pre-construction or premanufacture review. Unless otherwise stated in Employer's Requirements, each review by the Engineer shall not exceed 21 days, calculated from the date on which the Engineer receives the Manufacture Document.

The Engineer may during the review period, give notice to the Contractor that a Manufacture Document fails (to the extent stated) to comply with the Employer's Requirements, it shall be rectified, resubmitted and reviewed (and if specified, approved) in accordance with this Sub-Clause, at the Contractor's cost. For each part of the Works, and except to the extent that the prior consent of the Engineer shall have been obtained:

(a) In the case of a Construction and/or Manufacture Document which has (as specified) been submitted for the Engineer's approval

- (i) The Engineer shall give notice to the Contractor that the Construction and/or Manufacture Document is provided with no objection, with or without comments, or that it fails (to the extent stated) to comply with the Contract
- (ii) Execution of such part of the Works shall not commence until the Engineer has provided with no objection the Construction and/or Manufacture Document; and
- (iii) The Engineer shall be deemed to have provided with no objection the Construction and/or Manufacture Document upon the expiry of the review periods for all the Construction and/or Manufacture Documents which are relevant to the design and execution of such parts, unless the Engineer has previously notified otherwise in accordance with sub-paragraph (i)

(b) construction and/or manufacture of such part of the Works shall not

commence prior to the expiry of the review of the Construction and/or Manufacture Documents which are relevant to its design and execution;

(c) construction and/or manufacture shall be in accordance with such reviewed (and if specified, approved) Construction and/or Manufacture Documents; and

(d) if the Contractor wishes to modify any design or document which has previously been submitted for such pre-construction and/or pre-manufacture review, the Contractor shall immediately notify the Engineer, and based on Engineer's approval shall subsequently submit revised documents to the Engineer in accordance with the above procedure.

If the Engineer instructs that further Construction and/or Manufacture Documents are necessary for carrying out the Works, the Contractor shall promptly and at Contractor's cost prepare such documents,

Errors omissions, ambiguities, inconsistencies, inadequacies and other defects if found at any stage in construction or any operations manufacture documents, then shall be rectified by the Contractor at his own cost and any approval or consent or review (under this sub-clause or otherwise) by the Employer/Engineer of the Manufacture and Construction Documents under this Sub-clause shall not relieve the Contractor from any obligations or responsibility under the Contract.

Submission of Documents

The Contractor shall submit drawings and documents, as required by the Contract, to the Engineer in accordance with any submittal schedule agreed with the Engineer. This submittal shall be made sufficiently before the Works are to be carried out to give the Engineer and the Employer reasonable time to examine the drawings or other documents, to prepare comments and for any changes to be accommodated by the Contractor.

Where the consent of the Engineer is required, the Engineer shall notify the Contractor in writing of his decision either within such period as may expressly be stipulated in the Contract or otherwise within a reasonable time.

The Operation and Maintenance Manuals and drawings submitted by the Contractor shall, if required, be updated by him during the Defects Liability Period and re-submitted for review by the Employer's Representative.

10	<p>Labour Laws and CoR Labour Welfare Fund</p> <ol style="list-style-type: none"> 1. The Contractor shall, if required by the Employer, deliver to the Engineer or to his office; a return in detail, in such form and at such intervals as the Employer may prescribe, showing the number of labours employed in different categories by the Contractor for the entire work. The contractor must ensure compliance of all the labour laws including obtaining labour license and registration of workers with BOCW Board. 2. In case of death of staff, the agency is required to deposit Rs. 1,00,000/- in CoR Labour welfare fund to enable CoR to release Rs. 2,00,000/- for heir apparent as immediate relief to his dependent. Subsequently agency should facilitate compensation on priority. Violation of these basic provisions shall attract a penalty of 5% of contract value and repeated violations shall lead to termination of contract. 3. In dealing with labour and employees, the Contractor and his Sub-Contractors (including piece rate and petty Contractors) shall comply fully with all laws and statutory regulations pertaining to engagement, payment and upkeep of the labour in India. 4. The Contractor shall prepare and submit compliance reports of adherence to labour laws as and when desired by the Engineer. 5. The Contractor will ensure to open bank accounts for each worker employed by him and his sub-contractors and all the payments to workers will be released through bank accounts.
11	<p>Health and Safety</p> <p>Precaution shall be taken by the Contractor to ensure the health and safety of his staff and labour. The Contractor shall, in collaboration with and to the requirements of the local health authorities, ensure that medical staff, first aid facilities, sick bay and ambulance service are available at the accommodation and on the Site at all times, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as per the Engineer's requirement and will ensure complete compliance with relevant clauses of Employer's Health, Safety and Environment Manual (SHE Manual).</p> <p>Contractors are required to have tie-up with well-equipped reputed hospitals having facilities of MRI, CT-Scan, Ultrasound, Blood Bank, specialist Doctors like neurosurgeon, orthopedic as mandatory requirement and fire station located in the neighborhood for attending to the casualties promptly and emergency vehicle kept on standby duty during the working hours for the purpose.</p> <p>The Contractor's Site Safety Plan shall be developed from his Outline Safety Plan as per Employer's Requirements and SHE Manual of the Employer. The Contractor shall appoint a member of his staff at the Site to be responsible for maintaining the safety, and protection against accidents, of personnel on the Site. This person shall be qualified for his work and shall have the authority to issue instructions and take protective measures to prevent accidents.</p>
12	<p>Quality Control</p> <p>Upon the Engineer notifying his consent to the Site Quality Plan, or any supplement thereto, the Contractor shall, adhere to the principles and procedures contained in such document, except where the Engineer gives his consent to any amended or varied version thereof. The Contractor shall cause any sub-contractors to adhere to this Plan.</p> <p>The Contractor shall appoint a suitably qualified and experienced person, not otherwise engaged in the performance of the Contract, to act as manager of the quality assurance system and shall provide such other personnel and resources as required to ensure effective operation of the quality assurance system. The said manager shall carry out audits of the application of the quality assurance system, and ensure effective quality control and delivery of quality assurance.</p> <p>The Contractor shall provide all necessary access, assistance and facilities to enable the Engineer to carry out surveillance visits both on and off the Site to verify that the quality assurance system is being properly and fully implemented. No extra payment shall be made in this regard and the cost of the Work under this element shall be deemed to be included in the Contract Price.</p>
13	<p>Defect liability period</p> <p>The Defect Liability period (DLP) shall be as per Appendix-1 of FOT.</p>
14	<p>Contract Price (Inclusion/Exclusion) In respect of All Inclusive Contract</p> <p>i) Unless otherwise stated in the Special Conditions of Contract the Contract Price, subject any to any adjustment thereto in accordance with the Contract shall be all inclusive (including all taxes,</p>

	<p>duties, royalties etc.) except: Value Added Tax (VAT) paid under Delhi VAT act 2005 where work is done in Delhi. Value added tax (VAT) paid under other State Govt VAT act if work is done in that state.</p> <p>ii) Nothing extra shall be payable over the quoted rates, notwithstanding any provision to the contrary in any law for the time being in force, save and except what is specifically provided in General or Special Conditions of Contract.</p> <p>iii) The reimbursement (as per this Sub-clause) of whatsoever nature shall be provided only for Permanent Works. No reimbursement (as per this Sub-clause) shall be provided for Temporary Works and fuel.</p> <p>The Contract Price, subject to any adjustment thereto in accordance with the contract conditions, shall be all inclusive (including all taxes, duties, royalties etc.)</p> <p>Changes in Taxes/Duty:</p> <p>The Contract Price shall not be adjusted to take into account any increase or decrease in cost resulting from any change in taxes, duties, levies from the last date of submission of the Tender to the completion date including the date of the extended period of Contract unless a contrary provision exists in Special Conditions of Contract.</p> <p>(a) "Change in Taxes/Duties/Levies" means the occurrence or coming into force of the following, at any time after the date of submission of tender.</p> <p>(i) Any new tax which is imposed on composite work contract applicable on Metro project.</p> <p>(ii) Change in the rate of GST on composite work contract applicable on Metro Project, as per GST Act.</p> <p>(b) The Contract Price shall be adjusted due to any of the above two conditions. Adjustment in contract price will be applicable up to the stipulated date of completion of work including the extended period under sub clause 8.4.1 of GCC or it is specifically mentioned that extension is with adjustment for changes as stated above.</p> <p>(c) If the extension of contract period is on account of contractor's fault under Sub-clause 8.4.3 of GCC, no compensation shall be made towards upward revision towards "change in Taxes/Duty (taking place during the said extended contract period)" as mentioned at Sl. No. (a) (i) & (ii) above, any benefit on account of downward revision towards "change in Taxes/Duty" as mentioned at Sl. No. a (i) & (ii) above during the original contract period or extended contract period shall be on employer's account.</p> <p>(d) Any other changes (except on account of Clause (a) (i) & (ii) above) in existing taxes/new taxes on supply of materials/services/work etc. will not be considered and its impact shall be considered covered in the price variation clause provided in the Contract and in contract where price variation clause is not provided, the impact on any other change (except on account of clause a (i) & (ii) above in existing taxes/ new taxes on supply of materials/services/works etc. will be deemed to be included in the quoted contract price.</p> <p>Also, the contract price shall not be adjusted on account of fluctuations in the rates of exchange between the foreign currencies of the contract and Indian Rupees from the last date of submission of tender.</p>
15	<p>Price Variation</p> <p>This is a fixed price contract and no Price Variation is admissible in this contract.</p>
16	<p>Advance</p> <p>Advance is admissible as per Appendix-1 of FOT.</p>
17	<p>Payment</p> <p>For the purpose of On-account payment, the contractor shall submit detailed activities carried out as per BOQ along with recorded bill for the items actually executed for checking and payment. Payment will be effected based on unit rates as approved in the Bill of Quantities. The payment shall be made as per mentioned in EOI document.</p>
18	<p>Insurance</p>

	<p>I. The Contractor shall affect and maintain professional indemnity insurance, preferably in the name of RCIL, for the amount in Indian Rupees stipulated in Appendix to the Form of Tender in respect of any design of the Works to be carried out by, or on behalf of the Contractor. This insurance, which shall ensure the Contractor's liability by reason of professional negligence and errors in the design of the works, shall be valid from the date of commencement of Works, until 5 years after the date of issue of Performance Certificate. Alternatively, the Contractor shall redeem the insurance before the expiry of the Yearly Insurance in such a way that the entire validity period is covered. The Engineer will not issue Final Payment Certificate until the Contractor has produced evidence that coverage of the professional indemnity insurance has been provided for the aforesaid period.</p> <p>II. All of the contractor's employees drawing monthly wages up to Rs.21,000/- or as applicable as per the enhanced limit, shall have to be covered under ESI. The Contractor shall take insurance policy as specified in the Employee's Compensation Act only for those employees who are not covered by ESI.</p> <p>III. The contractor shall insure against liability to third parties in the joint name of the Employer and the contractor for any loss, damage, death or injury which may occur to any physical property (except things insured otherwise) or any person (except person insured by employer, staff of other contractor working in the premises, contractor's staff under sub clause 20.1) which may arise out of the performance of the contract. The insurance shall be at least for the amount of Rs. 7, 50,000/- for each incident.</p> <p>Insurance cover for Erection All Risk shall be full value of Contract price.</p>
19	<p>Notices and Instructions</p> <p>a. All notices to the Contractor, shall be served by post or telex or telefax or by hand to the Contractor or his authorized representatives. In case of notices delivered by post, they will be deemed to have been delivered after 7 days of dispatch.</p> <p>b. The Contractor shall, on award of the Contract, furnish to the Engineer, the name, designation, address and telephone, telex and telefax numbers and e-mail address of his representative referred in the EOI document.</p> <p>c. The Contractor shall furnish to the Employer/Engineer the postal address of his office at Delhi/ New Delhi. Any notice or instructions to be given to the Contractor under the terms of the contract shall be deemed to have been served on him if it has been delivered to his authorized agent or representative at site or if it has been sent by registered post to the office, or to the address of the firm last furnished by the Contractor.</p> <p>d. The Contractor shall establish an office in the National Capital Territory of Delhi in consultation with the in charge for planning, co-ordination and monitoring the progress of the Work and intimate the same in writing to in charge. In addition, the Contractor may set up field offices at convenient and approved locations for co-ordination and for monitoring the progress of fieldwork at his own cost.</p>
20	<p>Termination Of Contract Due to Contractor's Default</p> <p>If the Contractor fails to carry out any of his obligations, or if the Contractor is not executing the Works in accordance with the Contract, the Engineer may give notice to the Contractor requiring him to make good such failure and remedy the same within such time as the Employer / Engineer may deem to be reasonable.</p> <p>The Employer shall be entitled to terminate the Contract if the Contractor or any one of its constituents,</p> <p>a) fails to comply with a notice under as mentioned above.</p> <p>b) abandons or repudiates the Contract</p> <p>c) without reasonable excuse acceptable to the Engineer, fails to commence the Works in accordance with the Contract.</p> <p>d) sub contracts the whole of the Works or assigns the Contract without approval of the Employer</p> <p>e) becomes bankrupt or insolvent or goes into liquidation except voluntary liquidation for the purpose of amalgamation or reconstruction</p> <p>f) persistently disregards instructions of the Engineer or contravenes any provisions of the Contract, or</p> <p>g) fails to adhere to the agreed programme of work by margin of 10% of the stipulated period or 21 days, whichever is earlier, or fails to complete the Works or parts of the Works within the stipulated or extended period of completion, or is unlikely to complete the whole Work or part thereof within time because of poor record of progress; or</p> <p>h) fails to remove materials from the Site, or pull down and replace work, after receiving notice from the</p>

Engineer to the effect that the said materials or Works have been condemned or rejected, or
i) fails to take steps to employ competent and/or additional staff and labour, or
j) fails to afford the Engineer or his representative proper facilities for inspecting the Works or any part thereof, or
k) indulges in corrupt or fraudulent practices

In any one of these events or circumstances, the Employer may upon giving 14 days' notice to the Contractor, terminate the Contract and expel the Contractor from the Site. However, in case of sub-paragraph (e) or (k), the Employer may by notice of 7 days terminate the Contract immediately.

For the purpose of sub para (c) above, this clause, reasonable excuse shall be one, which in the opinion of the Engineer has resulted from, Any Circumstance which

- is beyond the employer's or contractor's control and
- made the failure unavoidable and it is evidenced by the Contractor to the satisfaction of the Engineer that the failure was remedied without unreasonable delay once that obstacle was out of the way.

In case of sub para(g), the Engineer at its sole discretion may terminate only part of the contract also by taking out some part of the total scope of work and may complete or arrange for any other entity through the process of open/ limited/ single tender or by calling quotations, to do so at the risk and cost of the contractor.

The Employer's decision to terminate the Contract shall not prejudice any other rights of the Employer under the Contract.

On termination of contract due to contractor's default the performance security shall be forfeited by encashing the bank guarantee and the balance work shall be got done independently without risk and cost of the failed contractor. The failed contractor shall be debarred from participating in the tender for executing the balance work. If the failed contractor is a JV or a partnership firm, then every member/partner of such JV or partnership firm shall be debarred from participating in the tender for the balance work either in his/her individual capacity or as a partner of any other JV/partnership firm.

The Engineer shall not make a claim under the Performance Security except for amounts to which the RCIL is entitled under the contract (Not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:

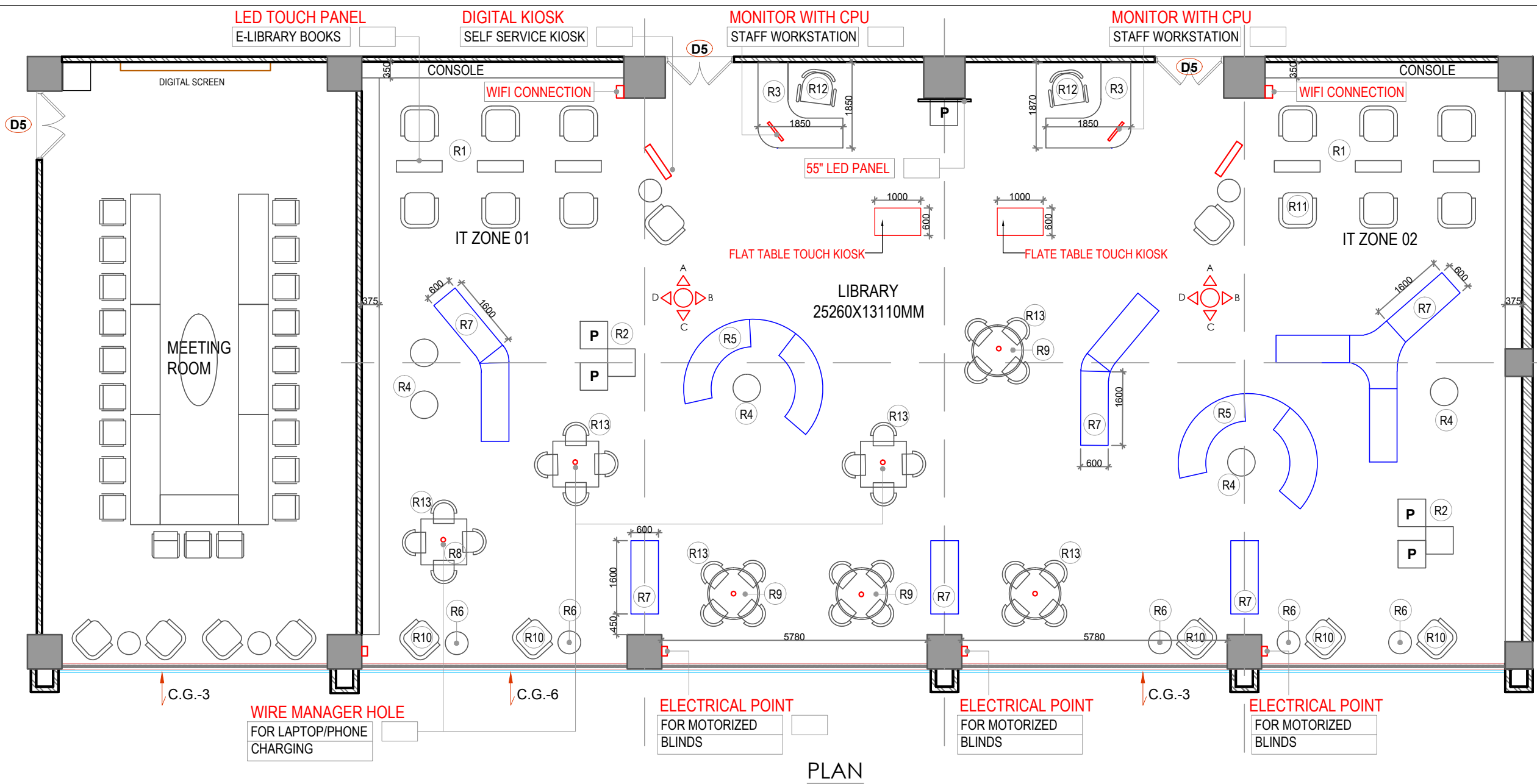
- i) Failure by the contractor to extend the validity of the Performance Security as described herein above, in which event the Engineer may claim the full amount of the Performance Security.
- ii) Failure by the contractor to pay RCIL any amount due, either as agreed by the contractor or determined under any or the Clauses/Conditions of the agreement, within 30 days of the service of notice to this effect by Engineer.
- iii) The contractor being determined or rescinded under provision of the EOI the Performance Security shall be forfeited in full and shall be absolutely at the disposal of the RCIL.

The Engineer shall, as soon as possible after termination, determine and advise the Contractor of the value of the Construction and/or Manufacture Documents, Plant, Rolling Stock, Materials, Contractor's Equipment and works and all sums then due to the Contractor as at the date of termination.

After termination, the Employer shall not be liable to make any further payments to the Contractor until the costs of design, manufacture, execution, completion and remedying of any defects, damages for delay in completion (if any), and all other costs incurred by the Employer, have been established.

The Employer shall be entitled to recover from the Contractor the extra costs, if any, of completing the Works after allowing for any sum due to the Contractor. If there are no such extra costs, the Employer shall pay any balance to the Contractor.

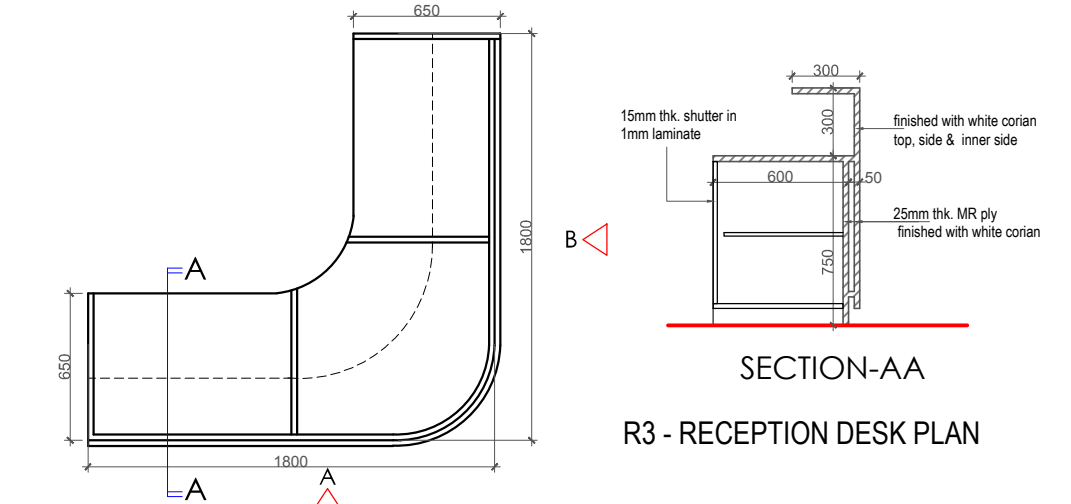
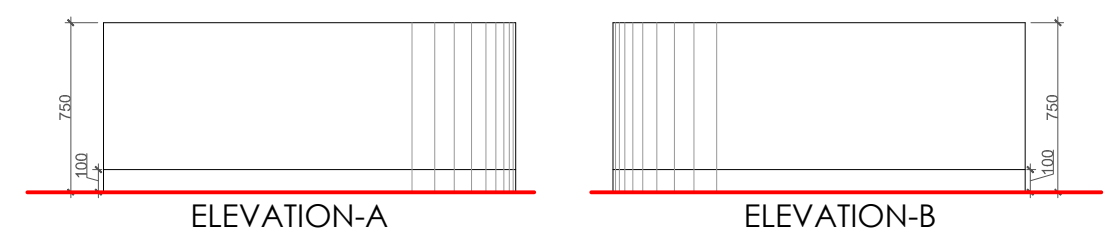
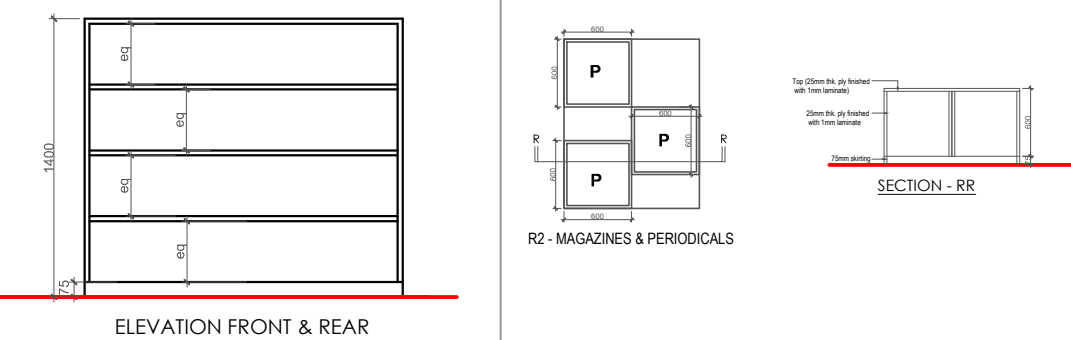
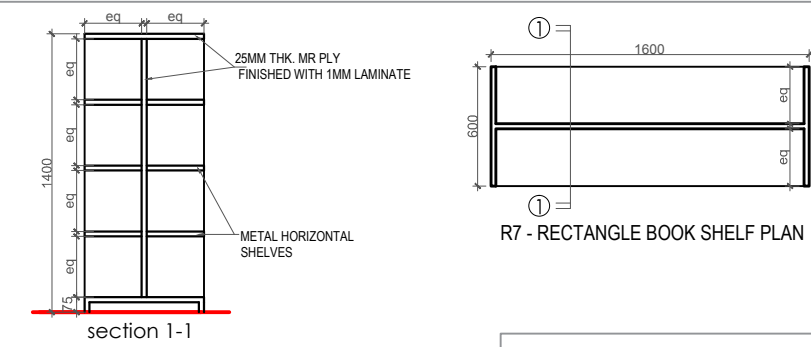
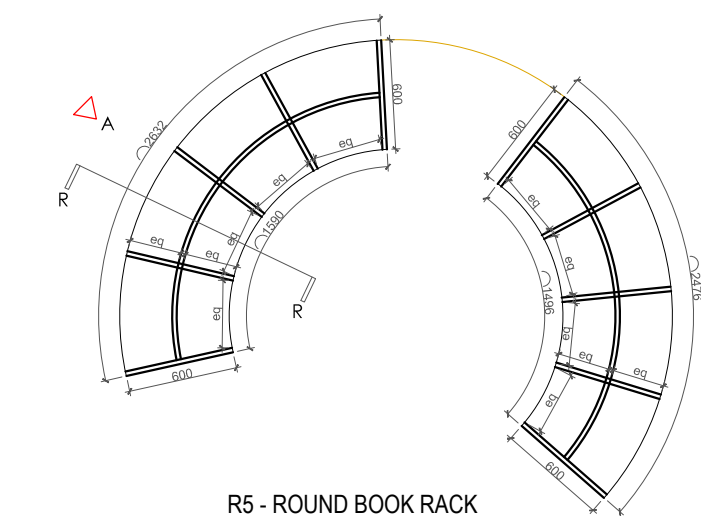
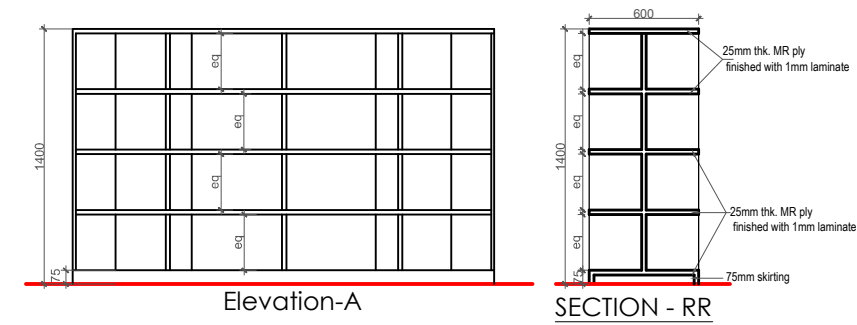
Provided always that in case any of the powers conferred upon the Employer by clauses mentioned above, shall have become exercisable, and the same may not have been exercised, the non-exercise thereof shall not constitute waiver of any of the conditions thereof.



LIBRARY	
IT ZONE	- 20%
BOOK RACK	- 40%
SEATING	- 35%

LEGEND:

S.NO.	DESCRIPTION	BOQ SCHEDULE	ITEM NO.
1	R1 - E-LIBRARY/ IT ZONE KIOSK	SCHEDULE -E	ITEM NO. 3.3
2	R2 - MAGAZINES & PERIODICALS	SCHEDULE -E	ITEM NO. 3.5
3	R3 - RECEPTION DESK	SCHEDULE -E	ITEM NO. 3.1
4	R4 - OTTOMAN	SCHEDULE -E	ITEM NO. 3.15
5	R5 - ROUND BOOK RACK	SCHEDULE -E	ITEM NO. 3.8
6	R6 - SIDE TABLE	SCHEDULE -E	ITEM NO. 3.14
7	R7 - MODULAR BOOK RACK	SCHEDULE -E	ITEM NO. 3.7
8	R8 - SQUARE TABLE	SCHEDULE -E	ITEM NO. 3.9
9	R9 - ROUND TABLE	SCHEDULE -E	ITEM NO. 3.11
10	R10 - LOUNGE CHAIR	SCHEDULE -E	ITEM NO. 3.13
11	R11 - IT ZONE CHAIR	SCHEDULE -E	ITEM NO. 3.4
12	R12 - RECEPTION CHAIR	SCHEDULE -E	ITEM NO. 3.2
13	R13 - STUDY TABLE CHAIRS	SCHEDULE -E	ITEM NO. 3.12



LEGEND

SCH-A/B/A1/B1/C/D/E/F/G/H :-

SCHEDULE OF BOQ

- NOTES :
1. REFER SEPARATE DRAWING FOR IT EQUIPMENTS AND ELECTRICAL WORKS.
 2. DRAWINGS ARE FOR TENDER PURPOSE ONLY.
 3. SHOP DRAWINGS TO BE SUBMITTED BY THE VENDORS AND APPROVED PRIOR BY ENGINEER IN CHARGE.
 - 4.GFC DRAWINGS WILL BE FOLLOWED FOR CONSTRUCTION.
 5. ANY DISCREPANCY IN DRAWINGS AND EXISTING CONDITIONS SHOULD BE BROUGHT TO THE NOTICE OF THE ARCHITECT PRIOR TO PROCEEDING WITH THE ITEM.
 6. FOR SIZE OF STRUCTURAL MEMBERS REFER STRUCTURAL ENGINEER'S DRAWINGS.
 7. BOQ QUANTITIES WILL BE GOVERNED WITH DRAWINGS FOR MEASUREMENTS FOR TENDER PURPOSE.
 8. ACTUAL SITE MEASUREMENTS WILL SUPERCEDE THE BOQ QUANTITIES AT THE TIME OF CONSTRUCTION.

ADDITIONAL NOTES : FURNITURE TO BE AS/CATALOG OR APPROVED VENDOR & TO BE APPROVED BY THE ARCHITECT PRIOR PROCUREMENT & INSTALLATION AT SITE.

ALL SAMPLE TO BE APPROVED PRIOR TO INSTALLATION.

EXISTING VITRIFIED FLOORING TO BE DEMOLISHED IN THE LIBRARY BEFORE FIXING OF NEW FLOORING.



REV.	DATE	PARTICULARS	BY	REMARK
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TENDER DRAWING

CLIENTS :-



PROJECT :-

BLOCK A



DRAWING TITLE :-

LIBRARY (2nd floor)
PLAN & ELEVATION

ROUTE	DIRECTORY	FILE	CD
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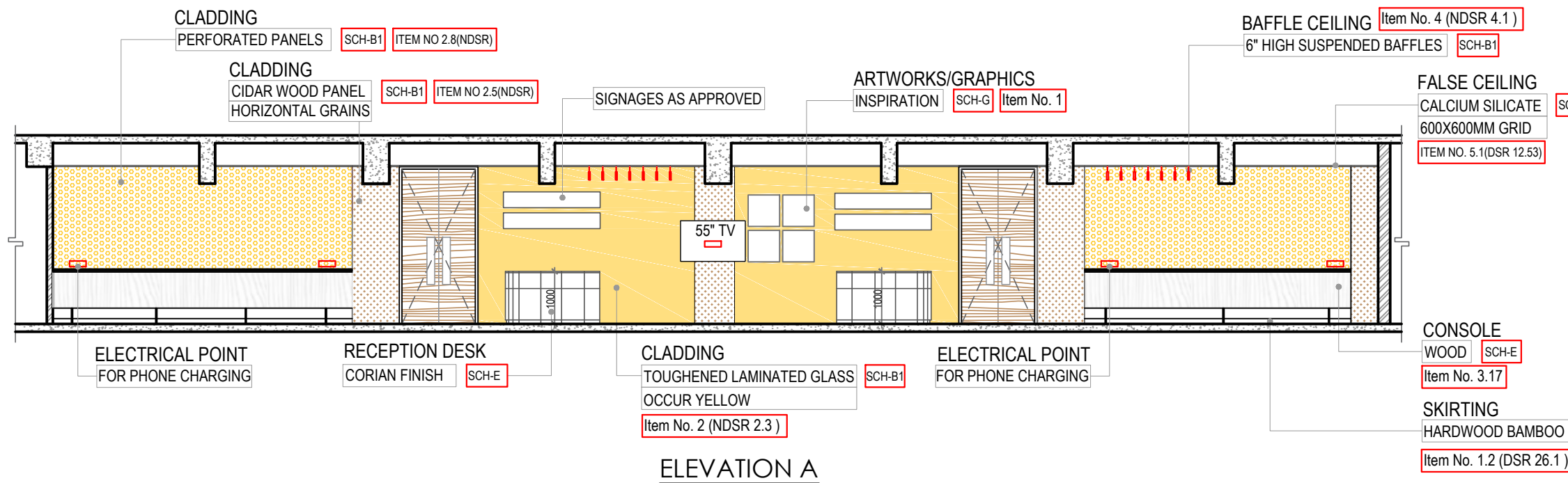
DRAWN BY H.R
CHECKED BY

S.NO. DATE 13-11-2020
JOB.NO. SCALE

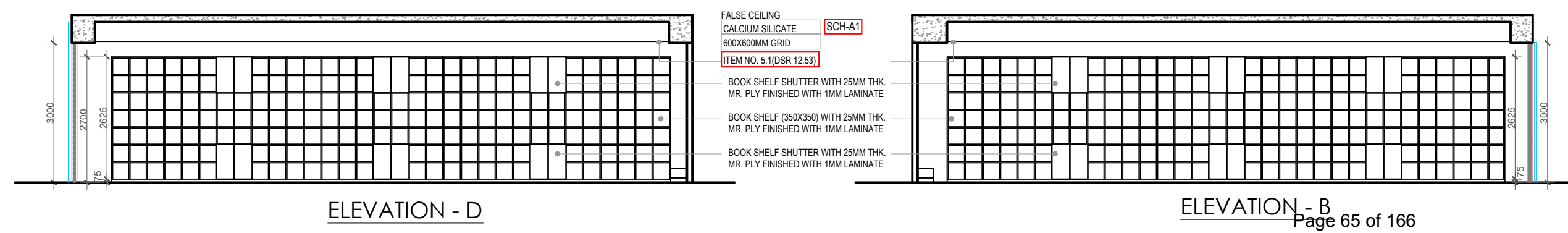
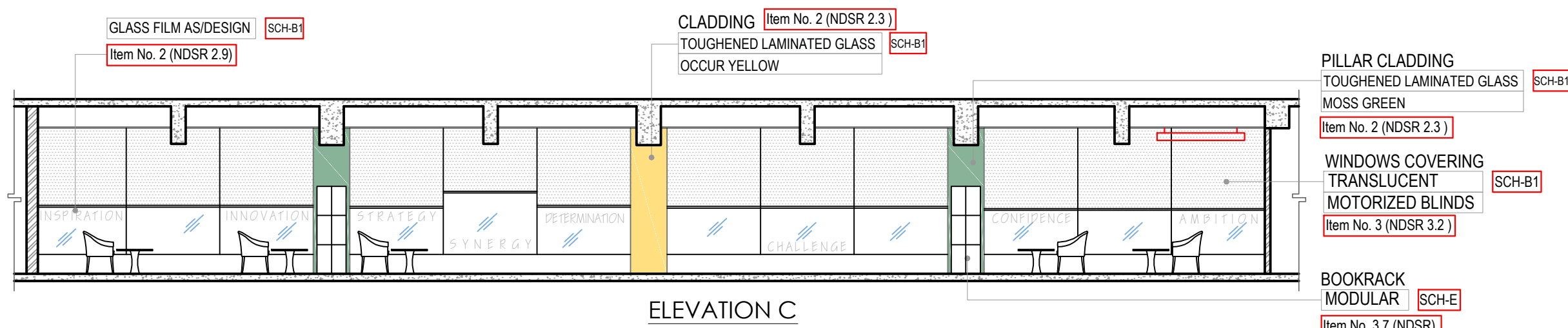
TENDER DRAWING

DRG.NO. TD-LIB-01 REV.NO. 01

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CONSOLE



ROOM IS EQUIPPED BY WIFI

FLOORING-1
BAMBOO FLOORING
SCH-A1
Item No. 1.2 (DSR 26.1)

D5

1500
600

6500
4480
5000
11000
3670

7762
5000



R1 - BAMBOO FLOORING



R2 - CARPET FLOORING-500x500mm

SCH-A/B/A1/B1/C/D/E/F/G/H :-

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**ADDITIONAL NOTES : FURNITURE TO BE AS/CATALOG C
APPROVED VENDOR & TO BE APPROVED BY THE
ARCHITECT PRIOR PROCUREMENT & INSTALLATION AT
SITE.**

ALL SAMPLE TO BE APPROVED PRIOR TO INSTALLATION

EXISTING VITRIFIED FLOORING TO BE DEMOLISHED IN THE LIBRARY BEFORE FIXING OF NEW FLOORING.



KEY PLAN

DATE	PARTICULARS	BY	REMARK

TENDER DRAWING

CLIENTS :-



PROJECT :-



DRAWING TITLE :-

LIBRARY (2nd floor)

DIRECTORY	FILE	CD
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DRAWN BY

CHECKED

DATE	13-11-2020
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SCALE	1:100@ A2
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TENDER DRAWING

DRG.NO.	PWD-LIB-02	REV.NO.	01
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Architectural floor plan of a large hall with a grid system. The plan shows a rectangular room with a grid of 12,000mm by 2,860mm. Key features include:

- Stairs:** Four sets of stairs are located at the corners of the main hall area.
- Seating:** Rows of chairs are arranged in the central area.
- Dimensions:** The main hall area is 12,000mm wide and 2,860mm deep. There are also smaller areas with dimensions like 1,800mm and 2,751mm.
- Labels:** 'D5' is labeled at the top and bottom. 'C.G.-3', 'C.G.-6', 'C.G.-3', and 'C.G.-2' are labeled along the bottom edge.
- Notes:** A note at the top right specifies 'FALSE CEILING', 'CALCIUM SILICATE 600X600MM GRID', and 'ITEM NO. 5.1(DSR 12.53)'. A legend indicates 'SPEAKERS' and 'CEILING MOUNTED'.
- Scale:** A scale bar at the bottom left shows 1500mm and 600mm.

SQUARE LIGHTS

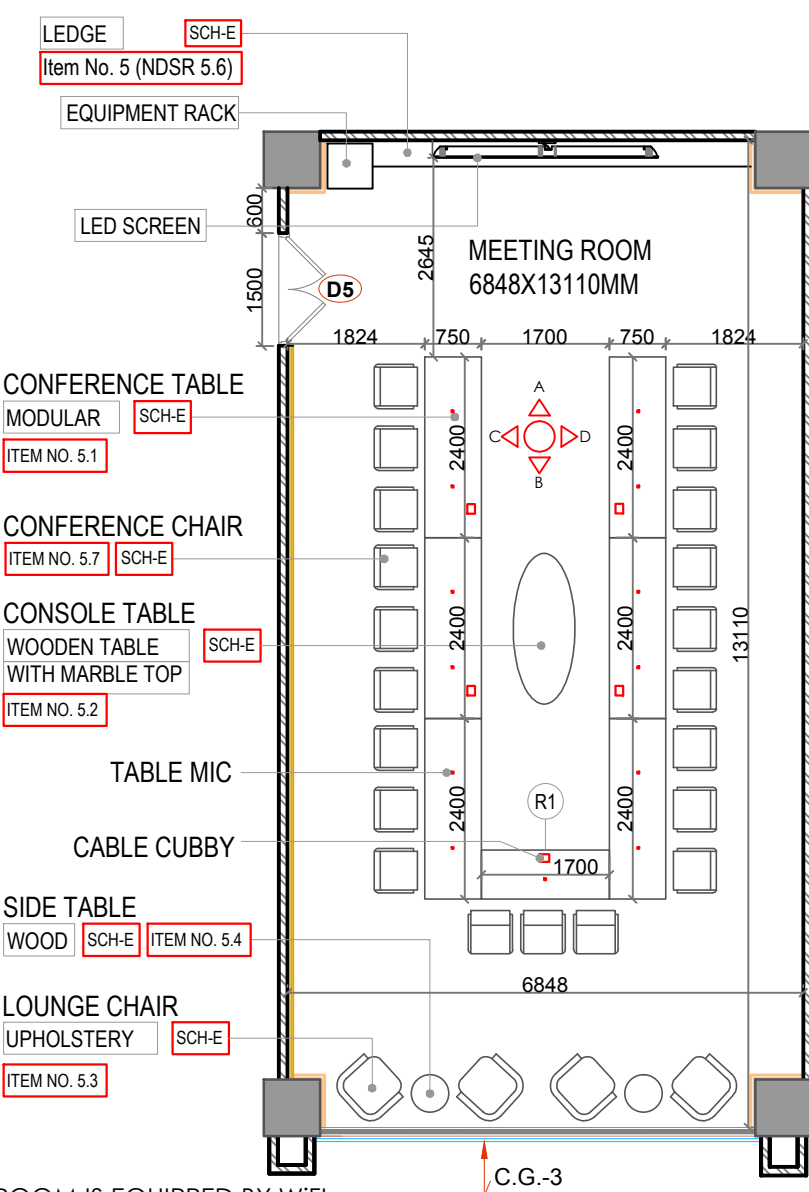
600X600 LED	SCH-D
ITEM NO.5	

FALSE CEILING

6" HIGH SUSPENDED BAFFLE CEILING PANELS	SCH-B1
Item No. 4 (NDSR 4.1)	



REFLECTED CEILING PLAN



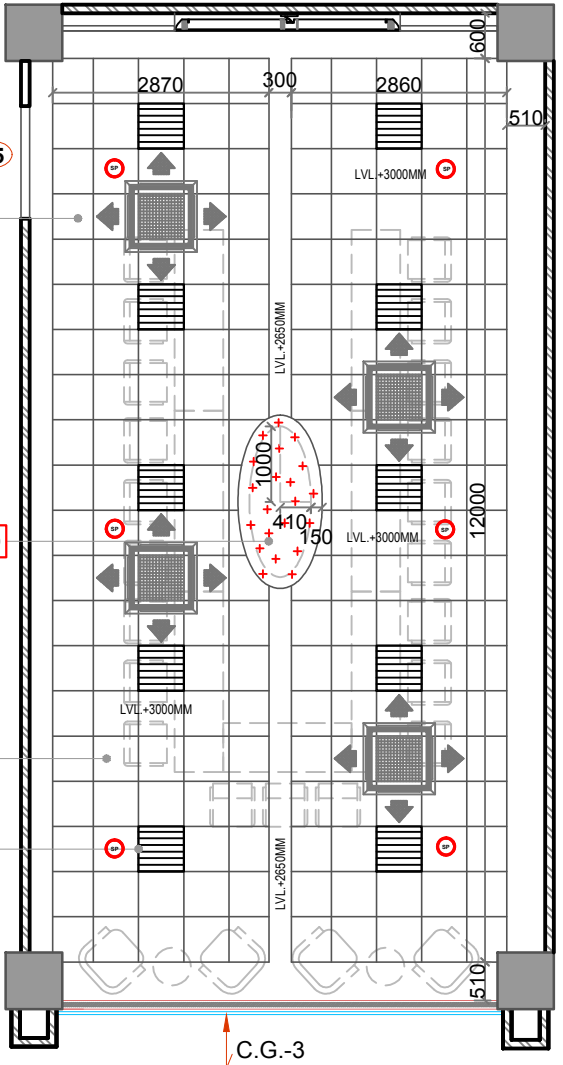
FURNITURE PLAN

FALSE CEILING
CALCIUM SILICATE
600X600MM GRID
ITEM NO. 5.1(DSR 12.53)

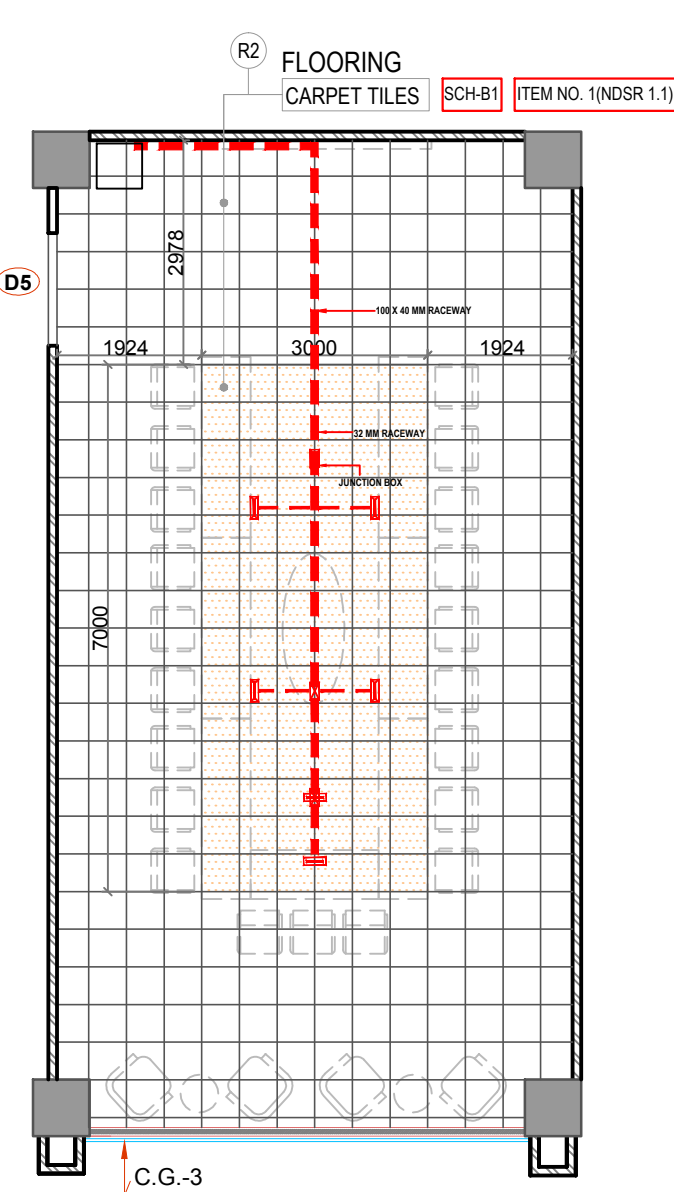
FALSE CEILING
OVAL SHAPED
MICRO LIGHTING
ITEM NO.1

SPEAKER
CEILING MOUNTED

SQUARE LIGHTS
600X600 LED
ITEM NO.5



REFLECTED CEILING PLAN



FLOORING PLAN



R6 - CONFERENCE TABLE



R2 - CARPET TILE 1



R2 - CARPET TILE 2



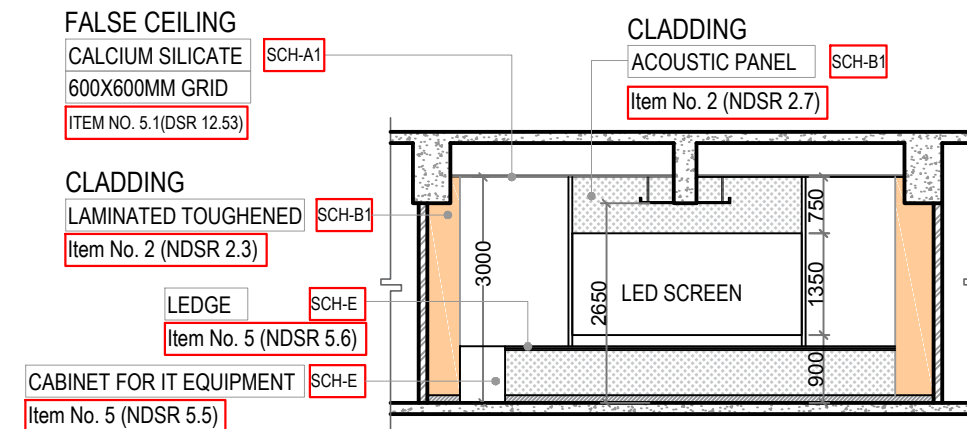
R3- ALUMINUM SKIRTING WITH CABLE CHANNEL



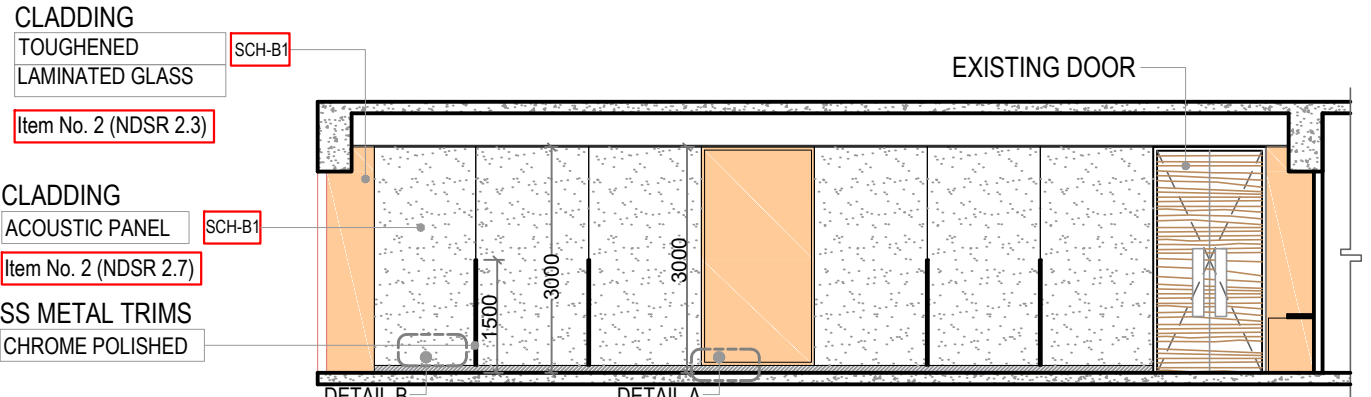
R4 - ACOUSTIC PANEL



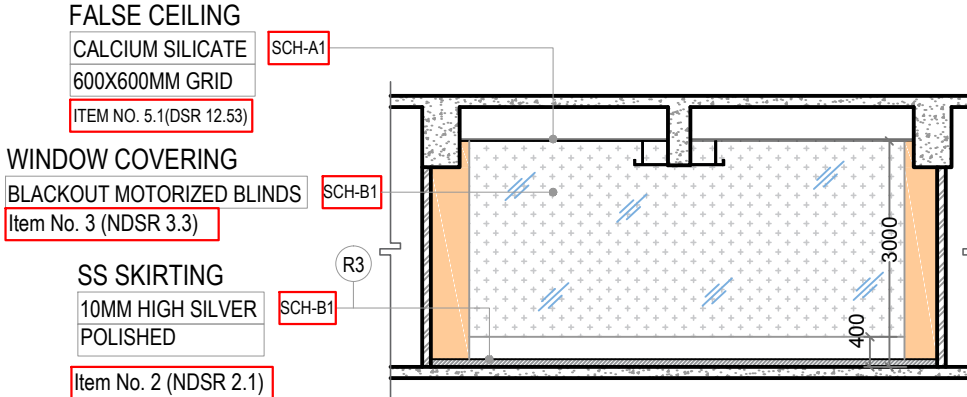
R5 - LACQUERED GLASS



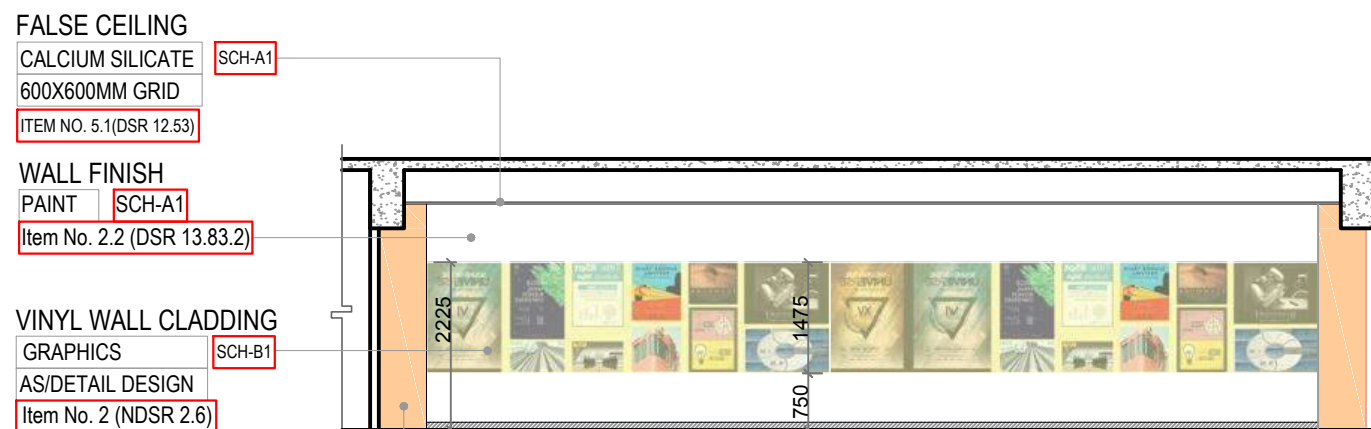
ELEVATION A



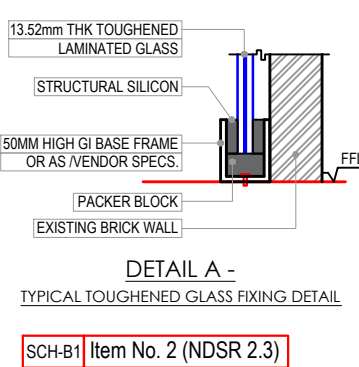
ELEVATION C



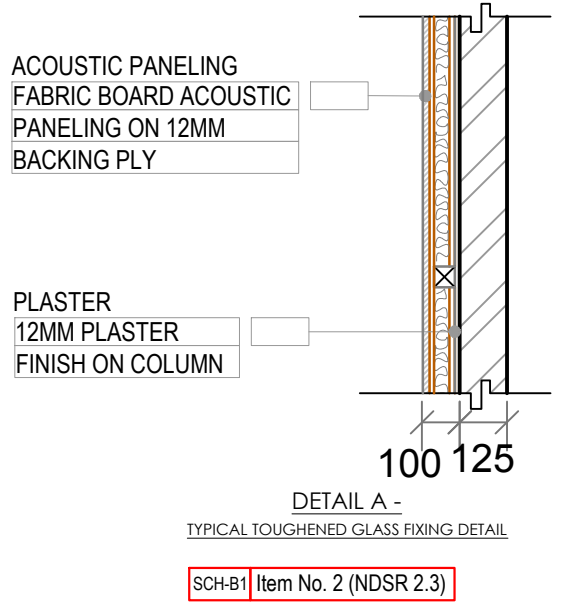
ELEVATION B



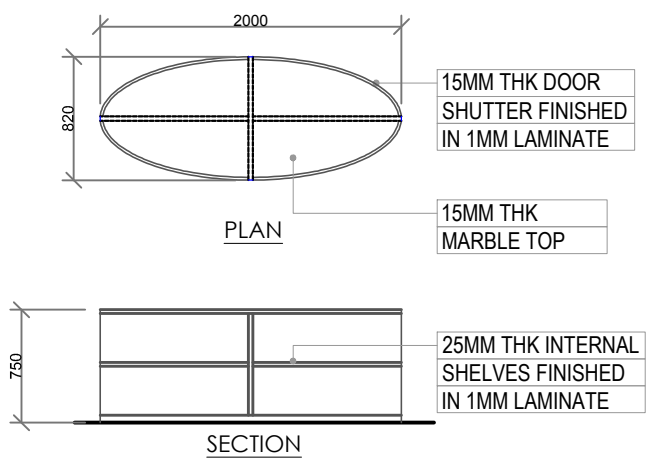
ELEVATION D



DETAIL A - TYPICAL TOUGHENED GLASS FIXING DETAIL

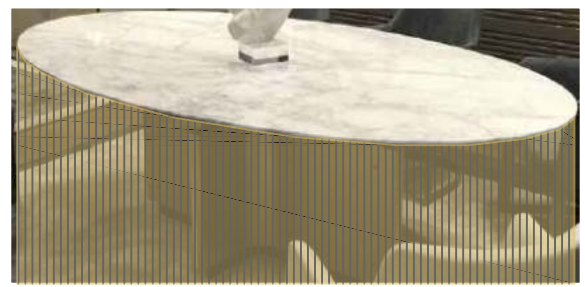


DETAIL A - TYPICAL TOUGHENED GLASS FIXING DETAIL



PLAN

SECTION



CONSOLE TABLE

LEGEND

SCH-A/B/A1/B1/C/D/E/F/G/H :-

SCHEDULE OF BOQ

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8. ACTUAL SITE MEASUREMENTS WILL SUPERCEDE THE BOQ QUANTITIES AT THE TIME OF CONSTRUCTION.

ADDITIONAL NOTES : FURNITURE TO BE AS/CATALOG OR APPROVED VENDOR & TO BE APPROVED BY THE ARCHITECT PRIOR PROCUREMENT & INSTALLATION AT SITE.

ALL SAMPLE TO BE APPROVED PRIOR TO INSTALLATION



KEY PLAN

REV.	DATE	PARTICULARS	BY	REMARK
TENDER DRAWING				
CLIENTS :-				



PROJECT :-

DRAWING TITLE :-

MEETING ROOM (2nd. floor)

PLAN & ELEVATION

ROUTE	DIRECTORY	FILE	CD
DRAWN BY		H.R	
CHECKED BY			
S.NO.	DATE	13-11-2020	
JOB.NO.	SCALE	1:75	
TENDER DRAWING			
DRG.NO.	TD-MR-01	REV.NO.	01
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LEGEND


SCH-A/B/A1/B1/C/D/E/F/G/H :-

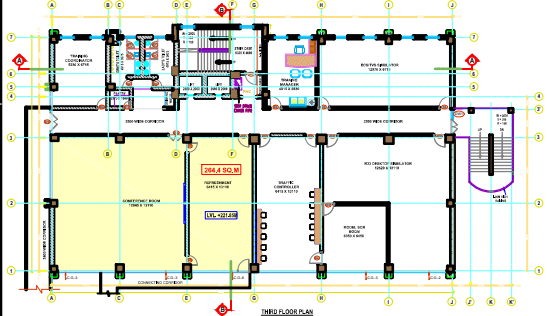
SCHEDULE OF BOQ

NOTES :
1. REFER SEPARATE DRAWING FOR IT EQUIPMENTS AND ELECTRICAL WORKS.
2. DRAWINGS ARE FOR TENDER PURPOSE ONLY.
3. SHOP DRAWINGS TO BE SUBMITTED BY THE VENDORS AND APPROVED PRIOR BY ENGINEER IN CHARGE.
4.GFC DRAWINGS WILL BE FOLLOWED FOR CONSTRUCTION.
5. ANY DISCREPANCY IN DRAWINGS AND EXISTING CONDITIONS SHOULD BE BROUGHT TO THE NOTICE OF THE ARCHITECT PRIOR TO PROCEEDING WITH THE ITEM.
6. FOR SIZE OF STRUCTURAL MEMBERS REFER STRUCTURAL ENGINEER'S DRAWINGS.
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ALL SAMPLE TO BE APPROVED PRIOR TO INSTALLATION.





KEY PLAN

DATE	PARTICULARS	BY	REMARK
TENDER DRAWING			
CLIENTS :- <div></div>			
<div><div></div>GRID</div> <div></div>			
PROJECT :- <div></div>			
DRAWING TITLE :- TELE PRESENCE ROOM			
DIRECTORY	FILE	CD	
DRAWN BY		H.R	
CHECKED BY			
	DATE	15/10/2020	
	SCALE	A2@1:100	
TENDER DRAWING			
PWD-T.P-02		REV.NO.	00
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CEILING

600X600MM EXISTING GRID CEILING
Item No. 5.1 (DSR 12.53)

FALSE CEILING- 1
9" HIGH BAFFLE CEILING PANELS
SCH-A1

FALSE CEILING- 2
6" HIGH BAFFLE CEILING PANELS
SCH-A1
Item No. 4 (NDSR 4.1)

FALSE CEILING- 3
OVAL SHAPED FALSE CEILING WITH MICRO LIGHTING
SCH-D
ITEM NO.1

LIGHTS
50MM DIA SPOT LIGHTS
SCH-D
ITEM NO.2

SPEAKER
CEILING MOUNTED

CONNECTING CORRIDOR

REFLECTED CEILING PLAN

NOTE : AC POSITIONS HAVE BEEN SHIFTED BY 1-2 GRID PANELS IN RELATION TO THE SUSPENDED BAFFLE PANELS. THE SAME IS MARKED IN BLUE CLOUD.

FLOORING

1000X1000MM VITRIFIED TILES
SCH-A1
ITEM NO. 1.3(DSR 11.41.4)

ACOUSTIC PANELING
STAGGERED PATTERN
Item No. 2 (NDSR 2.7)

HIGH PRESSURE LAMINATE CLADDING
Item No. 2.10(NDSR)
SCH-B1

FLOORING
500X500MM CARPET FLOORING TILES
SCH-B1
Item No. 1 (NDSR 1.1)

RACEWAY
ELECTRICAL WIRING IN FLOORING ALONG THE TABLE PROFILE

EXISTING FLOORING

TELE PRESENCE ROOM
12945 X 13110

REFRESHMENT
6415 X 13110

CONNECTING CORRIDOR

FLOORING PLAN

CARPET FLOORING

Page 69 of 166

LEGEND

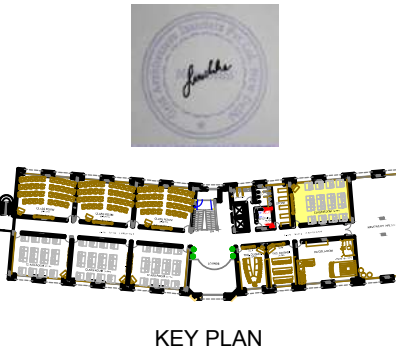
SCH-A/B/A1/B1/C/D/E/F/G/H
:- SCHEDULE OF BOQ

NOT IN SCOPE	ALL THE FURNITURE SHOW IN GREY IS NOT IN SCOPE OF WORK OR AS/EXISTING. (AS MENTIONED IN THE DRAWING)
	ALL THE FURNITURE SHOW IN BLACK IS TO BE TAKEN IN SCOPE OF WORK (ITEM NO. FROM BOQs IS MENTIONED)

- NOTES :
1. REFER SEPARATE DRAWING FOR IT EQUIPMENTS AND ELECTRICAL WORKS.
 2. DRAWINGS ARE FOR TENDER PURPOSE ONLY.
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ALL SAMPLE TO BE APPROVED PRIOR TO INSTALLATION.



KEY PLAN

REV.	DATE	PARTICULARS	BY	REMARK
------	------	-------------	----	--------

TENDER DRAWING

CLIENTS :-



PROJECT :-

DRAWING TITLE :-
MDP CLASS ROOM - 01 no.
(THIRD FLOOR)

ROUTE	DIRECTORY	FILE	CD
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DRAWN BY	H.R
CHECKED BY	
S.NO.	DATE 13-11-2020
JOB.NO.	SCALE A2@1:100

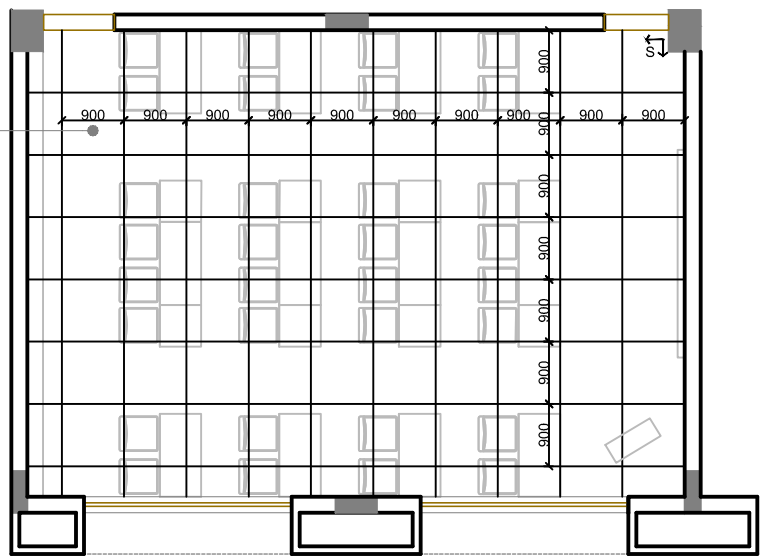
TENDER DRAWING

DRG.NO.	TD-MDP-01	REV.NO.	00
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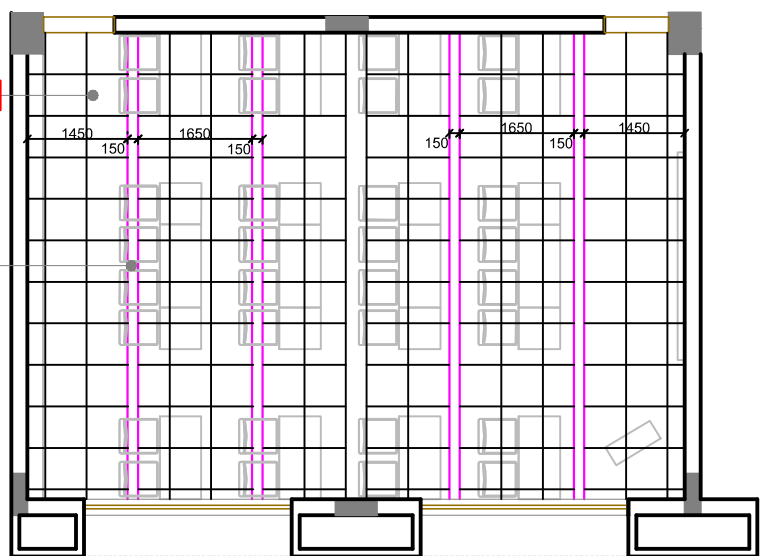


FURNITURE PLAN

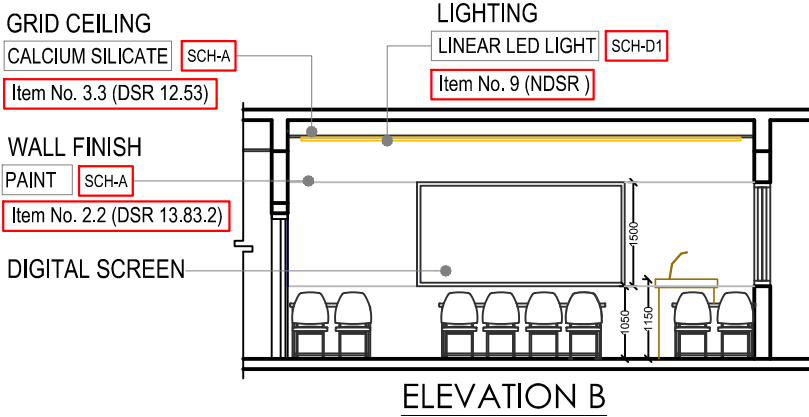
NOTE : EXISTING FURNITURE TO BE RETAINED.



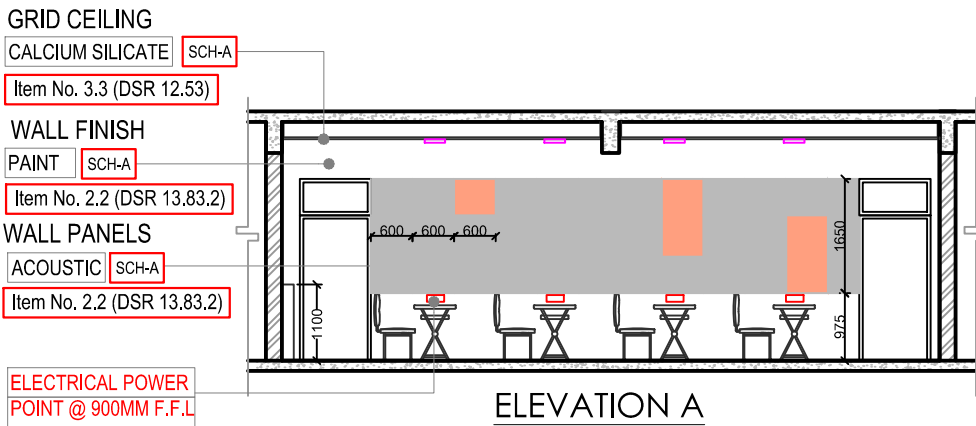
FLOORING PLAN



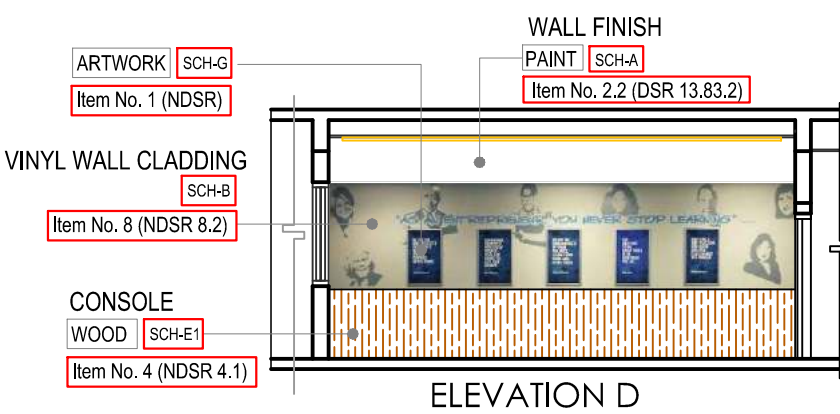
REFLECTED CEILING PLAN



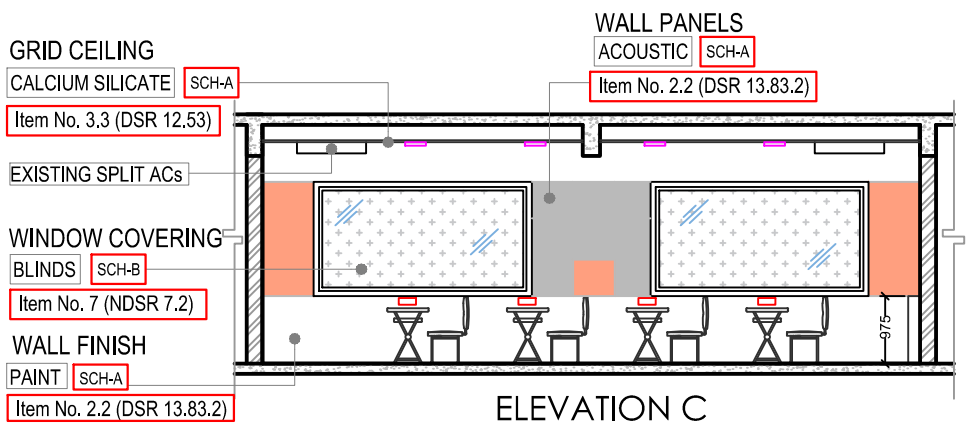
ELEVATION B



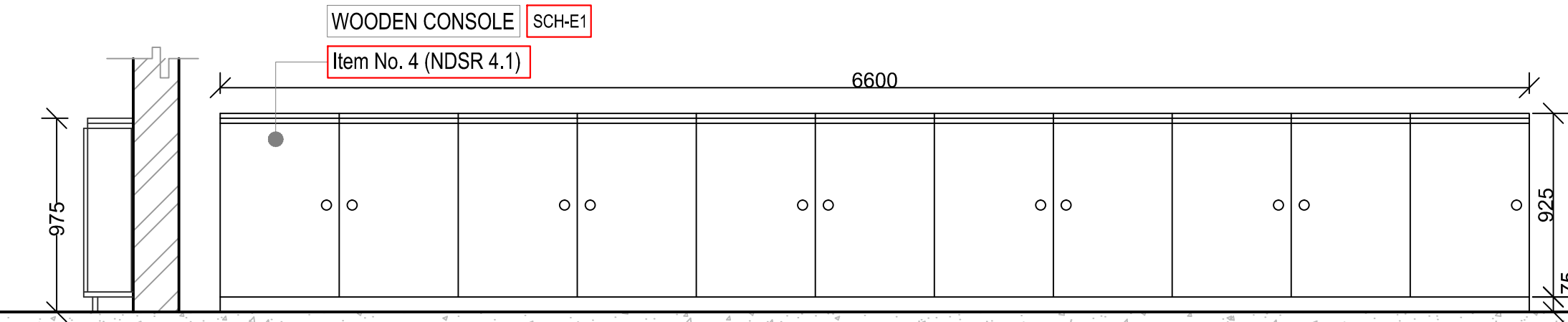
ELEVATION A



ELEVATION D

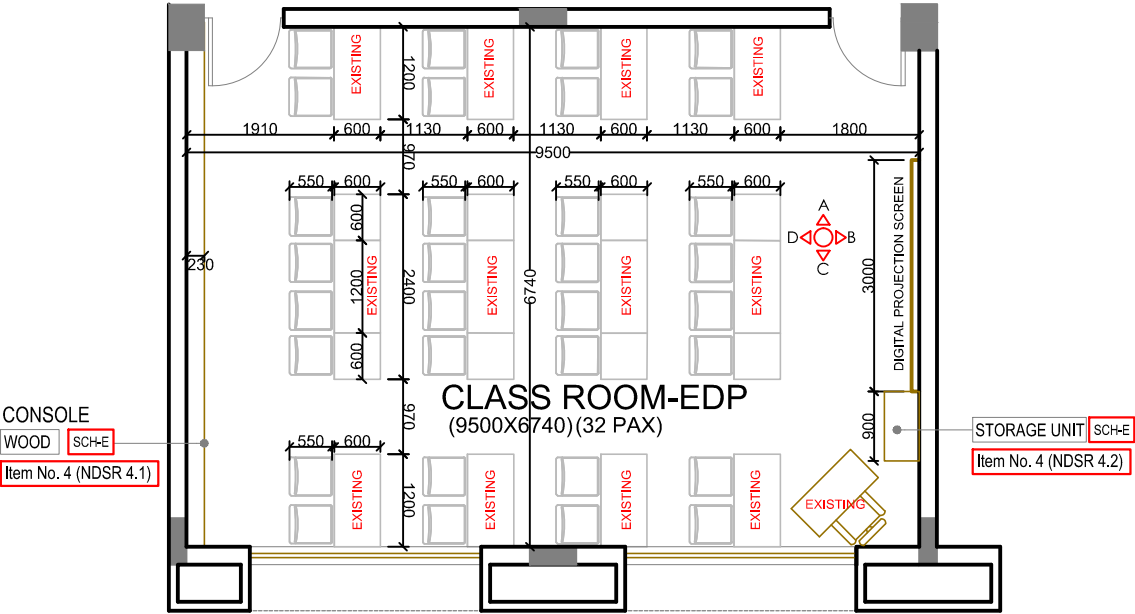


ELEVATION C



FRONT ELEVATION

SIDE ELEVATION



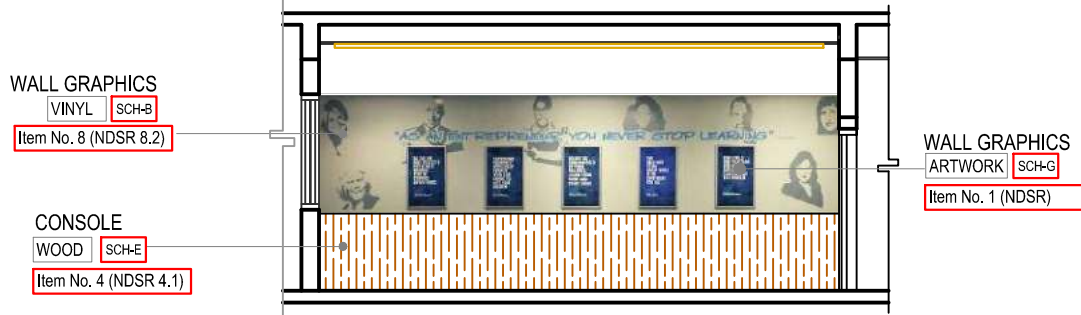
NOTE : EXISTING FURNITURE & FLOORING TO BE RETAINED.

FURNITURE PLAN

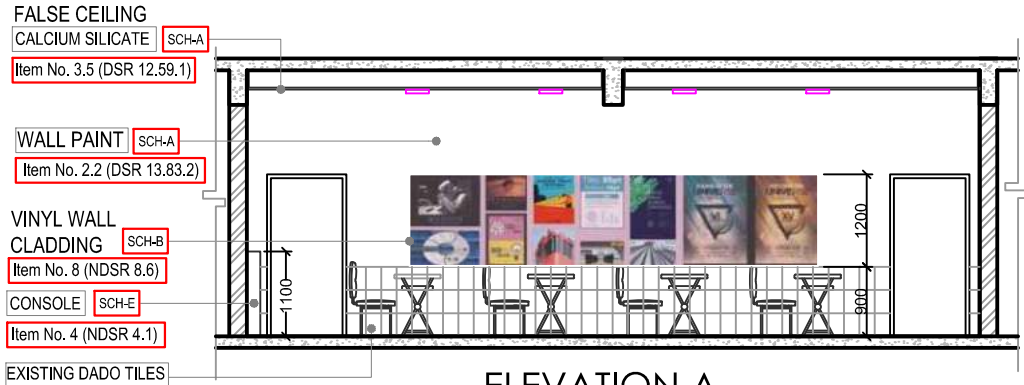


NOTE : EXISTING DADO TILES TO BE REMOVED ON PROJECTION SCREEN WALL (in elevation B). WALL FINISH AS/DETAIL DRAWING.

ELEVATION B

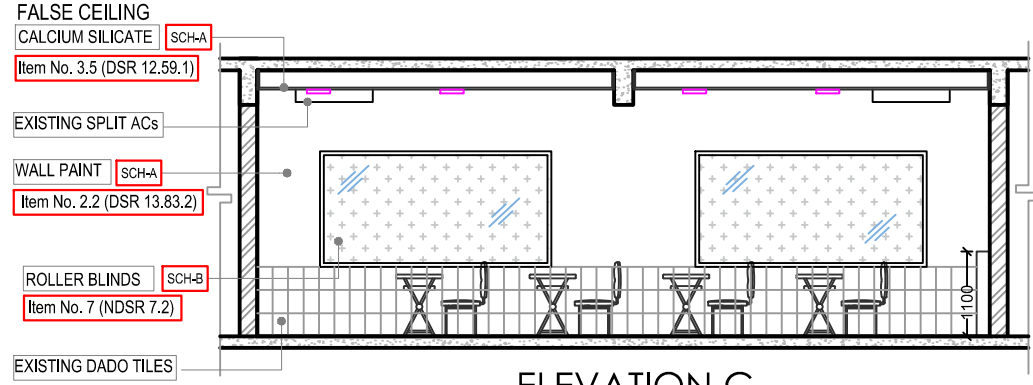


ELEVATION D



NOTE : EXISTING DADO TILES TO BE RETAINED.

ELEVATION A



NOTE : EXISTING DADO TILES TO BE RETAINED.

ELEVATION C

LEGEND

SCH-A/B/A1/B1/C/D/E/F/G/H :- SCHEDULE OF BOQ

NOTES :
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ALL SAMPLE TO BE APPROVED PRIOR TO INSTALLATION.

KEY PLAN

REV	DATE	PARTICULARS	BY	REMARK
TENDER DRAWING				
CLIENTS :-				

GRID

PROJECT :-

DRAWING TITLE :-

EDP CLASS ROOM - 02 nos.

(THIRD FLOOR)

ROUTE	DIRECTORY	FILE	CD

DRAWN BY		H.R	
CHECKED BY			
S.NO.		DATE	13-11-2020
JOB.NO.		SCALE	A2@1:100

TENDER DRAWING

DRG.NO.	TD-EDP-01	REV.NO.	00
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APPENDIX -1

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

APPENDIX TO THE FORM OF TENDER

S.N.	DESCRIPTION	REQUIREMENT
I	Amount of Performance Security	3% of the Contract Price in types and proportions of currencies in which the contract price is payable. In the event of variations during the execution of the contract which result in payments to the Contractor over and above the contract price.
ii	Latest 'date for commencement' of the Works	Date given in LOA or Employer's Notice to Proceed
iii	'Time for completion' of the work from the date of commencement of the work	05 Months. (Five Months) from the stipulated date of commencement of work.
iv	Liquidated Damages	(i) 0.015% of contract price per day of delay in completion of whole work. (ii) Total maximum limit of LD including sums payable by the employer to designated contractors is 15%.
V	Defects Liability Period' for the whole of the Works	The Defect liability period (DLP) shall be 24 Months from the date of issue of the latest Taking over Certificate for the whole of the works & CAMC shall be 60 Months after completion of DLP.
vi	Amount of advance payment	No advance shall be payable in this contract.
vii	Insurance for workers/employees	All of the contractor's employees shall have to be covered under ESI and ECA as per clause relevant clause of Special conditions of contract.

viii	Insurance cover for Contractor's All Risk and other requirements.	100% of the Total Contract Price.
ix	Amount of Third Party Insurance	INR 0.80 Million for any one incident, with no. of incidents unlimited.
X	Period in which all insurances have to be effected	Within 1 week from the "date of commencement"

Yours Truly,

Date:

Place:

APPENDIX –2

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

UNDERTAKING

1. We, hereby undertake that, the bill of Quantities & Schedule of Payments duly completed in all respect has been uploaded by us in Package 2 – Financial Package.
2. It is confirmed that we or any of our associates have not been engaged in any fraudulent and corrupt practice and that no agent, middleman or any intermediary has been, or will be, engaged to provide any services, or any other items of work related to the award or any payment which may be construed as an agency commission has been, or will be, paid and that the tender price will not include any such amount.
3. We hereby undertake that the tender and the tender documents purchased as a necessary part of our preparation of this tender shall be used solely for the preparation of the tender and that if the tender is successful, shall be used solely for the this works.
We further undertake that the aforesaid tender drawings and documents prepared by CoR. shall not be used in whole, in part or in any altered form on any other project, scheme, design or proposal that the joint venture, the joint venture parent companies or sub-contractors of the joint venture are, or will be involved with either in India or any other country.
4. We here by confirm that, we have downloaded/ read the complete set of tender /addendum/clarifications along with the set of enclosures hosted on e tendering portal <https://railtel.enivida.com>. We confirm that we have gone through the bid documents, addendums and clarifications for this work placed up to the date of opening of bids on the e-tendering portal <https://railtel.enivida.com>. We confirm our unconditional acceptance for the same and have considered for these in the submission of our financial bid.

Yours Truly,

APPENDIX-3**PROFORMA FOR STATEMENT OF MINOR DEVIATIONS**

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

1. The following are the particulars of minor deviations from the requirements of the Tender Documents :

S.No.	Clause	Deviations	Remarks (including justification)	Confirming that Price of adjustment of each deviation/s is given in Annexures 3A of financial package(Yes/No)

Note:

1. The Tenderer shall indicate price adjustment against each deviation in Annexure-3A of BOQ. This price is the price which the tenderer shall reduce from his tender price if deviation(s) is/are accepted by the Employer.
2. Where there is no deviation, the statement should be returned duly signed with an endorsement indicating 'No Deviations'. In case, Performa of deviations is not submitted or submitted as blank, it will be construed that the tenderer has not proposed any deviations from tender documents.
3. If the tenderer proposes deviations in tender documents and/or any other terms and conditions of the tender, other than in this Appendix, it will have no effect.

Yours Truly,

APPENDIX- 4

To,
 RailTel Corporation of India Limited,
 6th Floor, IIIrd Block,
 Delhi Technology Park,
 Shastri Park, Delhi-110053.

Date:

GENERAL INFORMATION DATA

A. TENDERER INFORMATION SHEET		
Tenderer's Legal Name		
Legal status of the Tenderer	Please tick appropriate category:	
	Sole Proprietorship Firm	
	Partnership Firm	
	Private Limited Company	
	Public Limited Company	
	Joint Venture	
	Consortium	
In case of JV/Consortium, Legal name of each partner with percentage participation (also provide information of each member in separate sheet (page 2 of 2))	Legal Name of JV/Consortium member	% participation
	1.	
	2.	
	3.	
Lead member of JV/Consortium		
Tenderer's legal address in India, telephone numbers, fax numbers, email address for communication		
Tenderer's authorized signatory (name, designation, address, contact no.)		
Tenderer's authorized representative (Name, Designation, Address, Contact no.)		

Yours Truly,

APPENDIX- 5

To,
RailTel Corporation of India Limited,
6th Floor, Illrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

1. I/We hereby confirm and declare that my/our firm/company M/s. _____ has not been put on defaulter list by EPF/ESI/GST/Labour Deptt. etc. as on the date of tender submission.
2. I/We hereby confirm and declare that my/our firm/company M/s. _____ is/are not involved in any illegal activity and/or has not been charge sheeted for any criminal act during last five years (from the last day of the previous months of tender submission).
3. I/We further undertake that in case any of the facts sworn in as mentioned above and any particulars mentioned in our applications are found other-wise or incorrect or false at any stage, my/our firm/company shall stand debarred from the present and future tenders of the RCIL/CoR. Besides, RCIL shall be entitled to take all such actions as may be deemed fit under the provision of this Agreement as well as under the frame work of law including termination of contract, if awarded, without any claim for any compensation, damages, costs etc. whatsoever on account of such premature closure of the contract.
4. We do hereby undertake that RCIL/CoR / Any other Metro organisation (100% owned by Govt.), Ministry of Housing and Urban Affairs / Order of Minister of Commerce, applicable for all Minister has not banned business with us as on the date of tender submission. Also any work of the value more than 10% of NIT cost of work, executed either individually or in a JV/ Consortium, has not been rescinded / terminated by RCIL/CoR / Any other Metro organisation (100% owned by Govt.), after award of contract to us during last 3 years (from the last day of the previous months of tender submission) due to our non-performance.
5. I/We do hereby undertake that we have been neither penalized with liquidated damages of 10% (or more) of the contract value in a contract due to delay nor imposed with penalty of 10% (or more) of the contract value due to any other reason in the works awarded by RCIL / Any other Metro organisation (100% owned by Govt.) contract of value more than 10% of NIT cost of work executed either individually or in a JV/ Consortium during last three years (from the last day of the previous months of tender submission).
6. We do hereby undertake that we have not suffered bankruptcy/insolvency during the last 5 years (from the last day of the previous months of tender submission)

I/We know that to swear a false undertaking is a crime under the law and with such knowledge only I have swear this Undertaking.

Yours Truly,

Appendix-5A

(Undertaking by JV/Consortium members)

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

We understand that,

1. In case, it comes to notice of CoR either during or even after completion of Work that JV/Consortium members have either altered/modified the MOU/ JV agreement w.r.t. to the MOU submitted at tendering stage or entered a separate MOU/ Agreement or made any other arrangement akin to a contract without the specific approval of Employer in writing, it shall be treated as a fraudulent practice of this tender for which every constituent member of the JV/Consortia is liable to be debarred for a period upto three years along with such other legal actions as may be permissible under the law.
2. Apart from all of us being jointly and severally responsible we understand that each of us shall also be individually responsible for our duties as specified in the MOU/JV agreement submitted. In case our JV/Consortium qualifies the criteria of work experience on the basis of our experience, each of us shall be responsible for deployment of key staff. In case of failure on our part in fulfilling these duties, the performance security submitted by us may be forfeited by the Employer in addition to other actions.
 - a. We are aware that our performance shall be adjudged by the Employer on quarterly basis, and if the same is not found satisfactory, actions as deemed appropriate by the Employer may be taken including termination of contract or termination of any of JC/Consortium member (s) from the contract i.e. Part Termination of the contract. We are also aware that the performance of each of us may be specifically stated in the work experience certificate/performance Certificates which may be issued to us during or after execution of Work for our Business Development purposes.

(i) STAMP & SIGNATURE OF AUTHORISED
SIGNATORY OF 1ST MEMBER OF JV/Consortium

(ii) STAMP & SIGNATURE OF AUTHORISED
SIGNATORY OF 2nd MEMBER OF JV/Consortium

AND SO ON.....

STAMP & SIGNATURE OF AUTHORISED SIGNATORY BEHALF OF JV/Consortium

Note:

1. This undertaking shall be signed by each of the JV/Consortium members.
2. The undertaking shall be signed by the authorized signatory of each constituent member and counter signed by the authorized signatory of JV/ Consortium

APPENDIX- 6

Obligation/ Statutory Compliance to be ensured by Contractor (Undertaking)

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053. .

Date:

1. I/We hereby confirm and declare that I/We will ensure compliance of obtaining license for employing contract labour.
2. I/We hereby confirm and declare that I/We will compliance of minimum wages Act by payment of wage on 7th of every month through Bank or in the presence of nominated representative of employer (RCIL/CoR(Supervisor/manager))
- 3 I/We hereby confirm and declare that I/We will compliance of provision of ESI & EPF Act & will ensure treatment in ESI hospital in case of accident/injuries suffered in performance of work and compensation under ESI Act.
- 4 I/We hereby confirm and declare that I/We will send Accident report to Regional Labour Commissioner (RLC) & ESI authorities.
- 5 I/We hereby confirm and declare that I/We will observance of working hours, weekly rest and overtime payments as per minimum wages Act-1948.

Yours Truly,

APPENDIX- 7**WORK EXPERIENCE**

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

**(DOCUMENTS RELATED TO WORK EXPERIENCE MENTIONED IN THIS APPENDIX ONLY SHALL BE
CONSIDERED FOR EVALUATION OF WORK EXPERIENCE CRITERIA).**

Applicant's legal name: _____

S. No.	Particulars	Work-I
1.	Name of work	
2.	Contract Identification Number	
3.	Award Date	
4.	Date of Completion	
5.	Employer's Name	
6.	Employer's Address: Telephone / Fax number:E Mail	
7.	Role in Contract (Individual OR JV/Consortium member)	
8.	Completion Cost/Executed Value	
	a. Currency (as stated in Clients Certificate) b. In equivalent INR as on last day of the previous month of tender submission price level	

9.	If JV/Consortium member, specify percentage participation in contract & amount (Please refer Note-1) a. %age participation b. In equivalent INR as on last day of the previous month of tender submission price level	
10	Contract delayed, i.e., completed beyond the original date of completion. Please mentioned 'Yes' or 'No'.	

NOTE:

1. Only the value of contract as executed by the applicant/member in his own name should be indicated. Where a work is undertaken by a group, only that portion of the contract which is undertaken by the concerned applicant/member should be indicated and the remaining done by the other members of the group be excluded. This is to be substantiated with documentary evidence.
2. **Separate Proforma shall be used for each member in case of JV/Consortium.**
3. Reasons of delay whether on contractors account or on account of Employer in each applicable case need to be enclosed separately.
4. Separate sheets for additional works, if required, may be submitted.

Yours Truly,

APPENDIX- 7A-1

Declaration/ Undertaking

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

**DECLARATION /UNDERTAKING FROM THE OEM FOR THE PRESENCE IN INDIA,SERVICE CENTER IN
INDIA. SUPPORT OF PRODUCT**

We, _____ are established and reputable manufacturers of _____ will provide the backend support including software upgrades and ensure availability of spares for a period of 07 years to _____ having _____ registered _____ office _____ at _____ . We will also be responsible for successful design and implementation of the offered product/system to ensure timely, efficient and optimized systems operations.

- (a) We are OEMs of Video Conferencing being supplied under this contract.
- (b) We have the Service centre support for these equipment's are available in India for any service-related issue.
- (c) We have direct presence in India from last 5 years

We agree to support successful bidder throughout the entire duration of this project, starting with bid preparation process up until project implementation and maintenance of the same. The project duration comprises of 05 months of implementation, 2 years for DLP and 5 years of CAMC starting from date of issuance of LOA. However, if the implementation phase gets extended (for whatsoever reason), we shall extend our support on best effort basis for the same period.

In case the contract agreement between successful bidder and the RCIL/CoR is terminated (for whatsoever reason), We shall identify and suggest a suitable replacement in agreement with RailTel Corporation of India Limited. However, we shall continue to support RailTel Corporation of India Limited for this project and the compliances provided will remain valid for the entire duration of the project.

Yours Truly,

APPENDIX- 7A- 2

Declaration/ Undertaking

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053. .

Date:

**DECLARATION /UNDERTAKING FROM THE OEM FOR THE PRESENCE IN INDIA,SERVICE CENTER IN
INDIA, SUPPORT OF PRODUCT**

We,_____ are established and reputable manufacturers _____ will provide the backend support including software upgrades and ensure availability of spares for a period of 07 years to _____, having registered office at _____. We will also be responsible for successful design and implementation of the offered product/system to ensure timely, efficient and optimized systems operations.

- (a) We are OEMs of Video Wall being supplied under this contract.
- (b) We have the Service centre support for these equipment's are available in India for any service-related issue.
- (c) We have direct presence in India from last 5 years

We agree to support successful bidder throughout the entire duration of this project, starting with bid preparation process up until project implementation and maintenance of the same. The project duration comprises of 05 months of implementation, 2 years for DLP and 5 years of CAMC starting from date of issuance of LOA. However, if the implementation phase gets extended (for whatsoever reason), we shall extend our support on best effort basis for the same period.

In case the contract agreement between successful bidder and the RCIL/CoR is terminated (for whatsoever reason), We shall identify and suggest a suitable replacement in agreement with RailTel Corporation of India Limited. However, we shall continue to support RailTel Corporation of India Limited for this project and the compliances provided will remain valid for the entire duration of the project.

Yours Truly,

APPENDIX- 7B-1

Declaration/ Undertaking

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

**DECLARATION /UNDERTAKING FROM THE OEM FOR THE PRESENCE IN INDIA,SERVICE CENTER IN
INDIA. SUPPORT OF PRODUCT**

We, _____ are established and reputable manufacturers of _____ will provide the backend support including software upgrades and ensure availability of spares for a period of 07 years to _____, having _____ registered _____ office _____ at _____ . We will also be responsible for successful design and implementation of the offered product/system to ensure timely, efficient and optimized systems operations.

- (a) We are OEMs of Controller being supplied under this contract.
- (b) We have the Service centre support for these equipment's in India for any service-related issue.
- (c) We have direct presence in India from last 5 years

We agree to support successful bidder throughout the entire duration of this project, starting with bid preparation process up until project implementation and maintenance of the same. The project duration comprises of 05 months of implementation, 2 years for DLP and 5 years of CAMC starting from date of issuance of LOA. However, if the implementation phase gets extended (for whatsoever reason), we shall extend our support on best effort basis for the same period.

In case the contract agreement between successful bidder and the RCIL /CoR is terminated (for whatsoever reason), We shall identify and suggest a suitable replacement in agreement with RailTel Corporation of India Limited. However, we shall continue to support RailTel Corporation of India Limited for this project and the compliances provided will remain valid for the entire duration of the project.

Yours Truly,

APPENDIX- 7B-2

Declaration/ Undertaking

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

**DECLARATION /UNDERTAKING FROM THE OEM FOR THE PRESENCE IN INDIA, SERVICE CENTER IN
INDIA, SUPPORT OF PRODUCT**

We, _____ are established and reputable manufacturers of _____ will provide the backend support including software upgrades and ensure availability of spares for a period of 07 years to _____ having _____ registered _____ office _____ at _____. We will also be responsible for successful design and implementation of the offered product/system to ensure timely, efficient and optimized systems operations.

- (a) We are OEMs of Switcher being supplied under this contract.
- (b) We have the Service centre support for these equipment's in India for any service-related issue.
- (c) We have direct presence in India from last 5 years

We agree to support successful bidder throughout the entire duration of this project, starting with bid preparation process up until project implementation and maintenance of the same. The project duration comprises of 05 months of implementation, 2 years for DLP and 5 years of CAMC starting from date of issuance of LOA. However, if the implementation phase gets extended (for whatsoever reason), we shall extend our support on best effort basis for the same period.

In case the contract agreement between successful bidder and the RCIL/CoR is terminated (for whatsoever reason), We shall identify and suggest a suitable replacement in agreement with RailTel Corporation of India Limited. However, we shall continue to support RailTel Corporation of India Limited for this project and the compliances provided will remain valid for the entire duration of the project.

Yours Truly,

APPENDIX- 7B-3

Declaration/ Undertaking

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

**DECLARATION /UNDERTAKING FROM THE OEM FOR THE PRESENCE IN INDIA,SERVICE CENTER IN INDIA,
SUPPORT OF PRODUCT**

We, _____ are established and reputable manufacturers of _____ will provide the backend support including software upgrades and ensure availability of spares for a period of 07 years to _____, _____ having _____ registered _____ office _____ at _____. We will also be responsible for successful design and implementation of the offered product/system to ensure timely, efficient and optimized systems operations.

- (a) We are OEMs of ~~Microphone~~, Amplifier, Mixer, DSPs being supplied under this contract.
- (b) We have the Service centre support for these equipment's in India for any service-related issue.
- (c) We have direct presence in India from last 5 years

We agree to support successful bidder throughout the entire duration of this project, starting with bid preparation process up until project implementation and maintenance of the same. The project duration comprises of 05 months of implementation, 2 years for DLP and 5 years of CAMC starting from date of issuance of LOA. However, if the implementation phase gets extended (for whatsoever reason), we shall extend our support on best effort basis for the same period.

In case the contract agreement between successful bidder and the RCIL/CoR is terminated (for whatsoever reason), We shall identify and suggest a suitable replacement in agreement with RailTel Corporation of India Limited. However, we shall continue to support RailTel Corporation of India Limited for this project and the compliances provided will remain valid for the entire duration of the project.

Yours Truly,

APPENDIX- 7C-1

Declaration/ Undertaking

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

DECLARATION /UNDERTAKING FROM THE OEM FOR SUCCESSFUL WORKING OFEQUIPMENT

We, _____ are established and reputed manufacturers of _____ will provide the backend support including software upgrades and ensure availability of spares for a period of 07 years to _____, having _____ registered _____ office _____ at _____. We will also be responsible for successful design and implementation of the offered product/system to ensure timely, efficient and optimized systems operations.

We are OEMs of Video Conferencing being supplied under this contract. The equipment is working at three places and working satisfactory since last 3 years

We certified that the proposed equipment in this bid is working satisfactorily at following three places since last three years

- 1.
- 2
- 3.

We are providing self-certified copy of the purchase order/ work order/ LOA of above three works for substantiation of our certification.

We confirm the compliance to all the requirement of the Tender Documents.

Yours Truly,

APPENDIX- 7C-2

Declaration/ Undertaking

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

DECLARATION /UNDERTAKING FROM THE OEM FOR SUCCESSFUL WORKING OFEQUIPMENT

We, _____ are established and reputable manufacturers of _____ will provide the backend support including software upgrades and ensure availability of spares for a period of 07 years to _____, having registered office at _____. We will also be responsible for successful design and implementation of the offered product/system to ensure timely, efficient and optimized systems operations.

We are OEMs of Video Wall being supplied under this contract. The equipment is working at three places and working satisfactory since last 3 years

We certified that the proposed equipment in this bid is working satisfactorily at following three places since last three years

- 1.
- 2.
- 3.

We are providing self-certified copy of the purchase order/ work order/ LOA of above three works for substantiation of our certification.

We confirm the compliance to all the requirement of the Tender Documents.

Yours Truly,

APPENDIX- 7D-1

Declaration/ Undertaking

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

DECLARATION /UNDERTAKING FROM THE OEM FOR SUCCESSFUL WORKING OFEQUIPMENT

We, _____ are established and reputable manufacturers of _____ will provide the backend support including software upgrades and ensure availability of spares for a period of 07 years to____
_____, having
_____ registered _____ office _____ at
_____. We will also be responsible for successful design and implementation of the offered product/system to ensure timely, efficient and optimized systems operations.

We are OEMs of Controller being supplied under this contract. The equipment is working at three places and working satisfactory since last 3 years

We certified that the proposed equipment in this bid is working satisfactorily at following three places since last three years

- 1.
- 2
- 3.

We are providing self-certified copy of the purchase order/ work order/ LOA of above three works for substantiation of our certification.

We confirm the compliance to all the requirement of the Tender Documents.

Yours Truly,

APPENDIX- 7D- 2

Declaration/ Undertaking

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

DECLARATION /UNDERTAKING FROM THE OEM FOR SUCCESSFUL WORKING OFEQUIPMENT

We, _____ are established and reputable manufacturers of _____ will provide the backend support including software upgrades and ensure availability of spares for a period of 07 years to _____, having _____ registered _____ office _____ at _____ . We will also be responsible for successful design and implementation of the offered product/system to ensure timely, efficient and optimized systems operations.

We are OEMs of Switcher being supplied under this contract. The equipment is working at three places and working satisfactory since last 3 years

We certified that the proposed equipment in this bid is working satisfactorily at following three places since last three years

- 1.
- 2
- 3.

We are providing self-certified copy of the purchase order/ work order/ LOA of above three works for substantiation of our certification.

We confirm the compliance to all the requirement of the Tender Documents.

Yours Truly,

APPENDIX- 7D-3

Declaration/ Undertaking

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

DECLARATION /UNDERTAKING FROM THE OEM FOR SUCCESSFUL WORKING OF EQUIPMENT

We, _____ are established and reputable manufacturers of _____ will provide the backend support including software upgrades and ensure availability of spares for a period of 07 years to _____, having _____ registered _____ office _____ at _____ . We will also be responsible for successful design and implementation of the offered product/system to ensure timely, efficient and optimized systems operations.

We are OEMs of ~~Microphone~~, Amplifier, Mixer, DSPs being supplied under this contract. The equipment is working at three places and working satisfactory since last 3 years

We certify that the proposed equipment in this bid is working satisfactorily at following three places since last three years

- 1.
- 2
- 3.

We are providing self-certified copy of the purchase order/ work order/ LOA of above three works for substantiation of our certification.

We confirm the compliance to all the requirements of the Tender Documents.

Yours Truly,

APPENDIX-8**Financial Data**

To,
 RailTel Corporation of India Limited,
 6th Floor, IIIrd Block,
 Delhi Technology Park,
 Shastri Park, Delhi-110053.

Applicant's legal name:

Date:

(Indian Rupees in Lakhs)

S.N.	Description	Financial Data for Latest Last 3 Years		
		2018-2019	2019-2020	2020-2021
1	Total Assets			
2	Current Assets			
3	Total External Liabilities			
4	Current Liabilities			
5	Annual Profits Before Taxes			
6	Annual Profits After Taxes			
7	Net Worth[1 - 3]			
8	Liquidity [2 - 4]			
9	Return on Equity			
10	Gross Annual turnover			
<p>Attach copies of the audited balance sheets, including all related notes, income statements for the last three audited financial years, as indicated above, complying with the following conditions.</p> <ol style="list-style-type: none"> 1. Historic financial statements shall be audited by Statutory Auditor of the Company under their seal & stamp and shall be strictly based on Audited Annual Financial results of the relevant period(s). No statements for partial periods will be accepted. 2. Historic financial statements must be complete, including all notes to the financial statements. 3. Return on Equity = Net Income / Shareholders Equity <p>Return on Equity = Net Income is for the full fiscal year (before dividends paid to common stock holders but after dividends to preferred stock). Shareholders equity does not include preferred shares.</p> <ol style="list-style-type: none"> 4. The above Appendix shall be duly certified by Chartered Accountant / Company Auditor under his signature & stamp, membership number and Unique Document Identification Number (UDIN). 5. In case financial statements for any of the financial year are not required to be audited as per any relevant section of the Income Tax Act, then, same should be supported by CA(Chartered Accountant) certificate along with all the GST returns, ITR-3/4 (including all the forms) and form 26AS for each of the financial year not liable to be audited as per relevant section of the income tax Act. 				

Yours Truly,

APPENDIX- 8A

{Affidavit for Unaudited Balance Sheet Required}

(On a non-judicial stamp paper of appropriate value)

(To be filled by the bidder* in case their Balance Sheet for F.Y. 2020-2021 has not been audited). If the Balance sheet for F.Y. 2020-2021 has been audited then the bidder need not to fill this form or may simply write "NOT APPLICABLE")

I,..... (Name and designation of Authorised signatory) of(Name of Company/ Firm/ Proprietorship/ Partnership) hereby confirm that the Balance sheet for Financial year i.e. **F.Y. 2020-2021** has actually not been audited/ or under finalisation so far.

Signature of authorized signatory on behalf of Tenderer

APPENDIX-9**FINANCIAL DATA****(WORK DONE DURING THE LATEST LAST THREE FINANCIAL YEARS)**

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

Name of the Tenderer: -**(All amounts in Rupees in Lakhs)**

S. No.	Description	Financial Data for Last 3 Audited Financial Years		
		Year 2018-2019	Year 2019-2020	Year 2020-2021
1	2	3	4	5
	Total value of works done as per audited financial statements			

NOTE:

1. Attach attested copies of the Audited Financial Statements of the three financial years as Annexure.
2. All such documents reflect the financial data of the tenderer.
3. **The financial data in above prescribed format shall be certified by Chartered Accountant / Company Auditor under his signature, stamp, membership number & Unique Documents Identification Number (UDIN).**
4. The above financial data will be updated to last day of the previous month of tender submission price level assuming 5% inflation for Indian Rupees every year and 2% for foreign currency portions per year. The exchange rate of foreign currency shall be applicable 28 days before the submission date of tender.

Yours Truly,

WORKS IN HAND

Applicant's legal name..... Date.....

Group Member's legal name..... Page ofpages

Name and brief particulars of contract (Clearly indicate the part of the work assigned to the applicant (s))	Name of client with telephone number and fax number	Contract Value In Rupees Equivalent (Give only the value of work assigned to the applicant(s) (Assume inflation as given in Appendix 9)	Value of balance work yet to be done in Rupee equivalent as on last day of the previous month of tender submission	Date of Completion as per Contract Agreement	Expected Completion Date	Delay if any, with reason	Value of work to be done on the date of submission during next 6 months .
Total							

Note:

1. The financial data in above prescribed format shall be certified by Chartered Accountant / Company Auditor under his signature, stamp, membership number & Unique Documents Identification Number (UDIN).

APPENDIX- 11

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

- (i) We do hereby undertake that following are the list of all the on-going Telecom works awarded by RCIL/CoR/ Any other similar work Organisation (100% owned by Govt.) of value more than 40% of NIT cost of work and the list of completed Telecom SITC/ maintenance works awarded by CoR/ any other similar work Organisation (100% owned by Govt.) within last one year (from the last day of the previous month of tender submission) of value more than 40% of NIT cost of work.

Applicant's legal name

Date.....

Group Member's legal name.....

Page Of Pages

S. No.	Contract No. & Name of Work	Name of Employer / Client	Name of the contractor including constituent members in case of JV/Consortium	Performance of Work.	Performance based on
1				* Satisfactory/unsatisfactory	* Client's certificate/Undertaking by tenderer
2					
Add required number of rows					

- (ii) We also do hereby undertake that the performance of works has been indicated above for all the Works which are either based on Client/Employer certificate or our undertaking. We also understand that RCIL/CoR at its sole discretion may get performance of any such work, for which undertaking of satisfactory performance has been given by us, directly from the Client/Employer for the Works listed above and if performance from Client/Employer for such work is found to be unsatisfactory, we shall be considered non-compliant to the tender condition.

Note:

a) The tenderer may either submit satisfactory performance certificate issued by the Client/employer for the works or give an undertaking regarding satisfactory performance of the work with respect to completion of work/execution of work (for on-going works) failing which their tender submission shall not be evaluated and the tenderer shall be considered non-responsive and non-compliant to the tender conditions. In case of non-submission of either satisfactory performance of such work shall be treated as unsatisfactory while evaluating the overall performance of tenderer in terms of Note (b) below.

b) If the tenderer or any of the constituent 'substantial member(s)' of JV/Consortium has reported four or less number of works in the Appendix-11 then there should not be any unsatisfactory performance in any of the works of tenderer or any of the constituent 'substantial member(s)' of JV/Consortium. Otherwise, the tenderer including the constituent 'substantial member(s)' of JV/Consortium shall be considered ineligible for participating in tender process. In other cases, if the Overall Performance of tenderer or any member of the constituent 'substantial member(s)' in case of JV/Consortium, in more than 20% of the works reported in the Appendix-11 (rounding off to the nearest lower whole number) is unsatisfactory, the tenderer including the constituent 'substantial member(s)' of JV/Consortium shall be considered ineligible for participating in tender process and they shall be considered ineligible for participating in tender process.

c) If there are any adverse remarks in the client's completion/performance certificate, the same shall be examined during technical evaluation.

d) If there is any misrepresentation of facts with regards to performance in any of the works reported above, the same will be considered as "fraudulent practice".

e) The undertaking shall be signed by authorized signatory of the tenderer. In case of JV/ Consortium by the authorized signatory of the constituent members counter signed by the authorized signatory of tenderer.

Yours Truly,

Example:

Works reported in the Appendix- 7	0-4	5	6	7	8	9	10	14
No. of unsatisfactory works acceptable	Nil	1	1	1	2	2	2	3

APPENDIX- 12**Undertaking**

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

We hereby jointly and severally certify in accordance with clause '9.a' of Order no. P- 45021/2/2017- PP (BE-II) of Ministry of Commerce and Industry, Department for Promotion of Industry and Internal Trade (DPIIT), Government of India dated 04.06.2020, that the item(s) offered meets the minimum local content of **50% / 20%** and we meet the minimum local content requirement for 'Class-I local supplier' / 'Class-II local supplier' (strike-through whichever is not applicable). The details of the local value addition enclosed as Appendix- 13.

We acknowledge that false declaration by the tenderer regarding local value addition including payments to be made to their vendors for local value addition shall be treated as a fraudulent practice of this tender for which the tenderer or its successors can be debarred for a period upto three years along with such other actions as may be permissible under the law.

In cases of procurement for a value in excess of Rs. 10 Crores, we also undertake to submit a certificate from statutory auditor or cost auditor of the company (in the case of companies) or from a practising cost accountant or practising chartered accountant (in respect of suppliers other than companies) giving the percentage of local content, in accordance with Clause '9.b' of the Order no.P-45021/2/2017-PP (BE-II) of Ministry of Commerce and Industry, Department for Promotion of Industry and Internal Trade (DPIIT), Government of India dated 04.06.2020, after completion of works to the Engineer.

Yours Truly,

APPENDIX-13

**Proforma for Submission of the List of the Goods, Works & Services Tentatively
proposed to be offered with Local Value Addition**

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

S.No.	Schedules of BOQ	% of Local content(as defined in clause 1.2.1 ix of NIT) with respect to cost of the respective Schedule of BOQ
1.	Schedule-A	
2.	Schedule-B	
3.	Schedule-C	

Yours Truly,

APPENDIX – 14

RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

UNDERTAKING

I/We _____ have read the clause(s) regarding restrictions on procurement from a bidder of a country which shares a land border with India. I/We _____ certify that we are not from such a country or, if from such a country, has been registered with the Competent Authority. I/We hereby certify that _____ fulfils all requirements in this regard and is eligible to be considered.

Yours Truly,

APPENDIX-15

RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

CHECK LIST FOR TECHNICAL AND FINANCIAL SUBMISSION				
Name of the Firm/Tenderer :				
S. No.	Item	Submitted		Reference Page No. in the Technical Submittal
		Yes	No	
CHECK SHEET FOR TECHNICAL SUBMISSION				
Documents required to be submitted along with the Technical Package				
1	Tender Cost and Tender security (EMD) Details(if applicable)			
1.1	Scanned copy of payment of Cost of Tender Documents/ Tender fee of requisite amount along with UTR No.			
1.2	Scanned copy of Undertaking for Tender Security Declaration as per Annexure-4			
2	POWER OF ATTORNEY			
2.1	Copy of POA/authorization in favour of authorized signatory of tender documents.			
2.2	Authorization in favour of signatory to the POA (i.e. Board Resolution/MOU etc.)			
2.3	Submitted POA/ authorization contains specimen signature of authorized signatory to tenderer.			
2.4	In case of JV/Consortium, POA by each member in their authorized signatory.			
2.5	Submitted POA is duly notarized and submitted copy of POA is Attested.			
2.6	Does in case of foreign firm the POA/MOU/JV Agreement is notarised in the country of origin and stamped by Indian Embassy/High Commission.			
2.7	Documents of constitution of the legal entity (Undertaking for proprietorship / Partnership deed / Memorandum and Articles of Association), each member in case of JV/consortium.			
3	DOCUMENTS REQUIRED AS PER CONTRACT			
3.1	Form of Tender (FOT) duly signed by Authorised signatory.			

3.2	Contract Conditions- Appendix-1.			
3.3	Undertaking - Appendix-2.			
3.4	Proforma for Statement of deviations- Appendix-3			
3.5	General information & Joint Venture Data- Appendix-4			
3.6(a)	In terms of Appendix- 4/ point nos. (a), (b) & (c), whether documents of constitution of the legal entity (Undertaking for proprietorship / Partnership deed / Memorandum and Articles of Association) is submitted (each member in case of JV/consortium).			
3.6(b)	In terms of Appendix- 4/ point nos. (d), whether in case of JV/Consortium, submitted corresponding JV agreement/ consortium agreement/MOU duly signed by each member of JV/Consortium.			
3.6(c)	JV agreement/ Consortium agreement/ MOU is duly notarized.			
3.7	Undertaking duly notarised (Non-blacklisting/ Rescinded Etc.)- Appendix- 5.			
3.7(a)	Undertaking by JV/Consortium members. Appendix-5A			
3.8	Form for obligation/ statutory compliance to be ensured by contractor- Appendix-6.			
3.9	Appendix- 11 Undertaking			
3.10	Undertaking Appendix- 12			
3.11	Proforma for Submission of the List of the Goods, Works & Services Appendix- 13.			
3.12	Undertaking Appendix- 14			
3.13	Check List- Appendix- 15.			
4	WORK EXPERIENCE & FINANCIAL DATA			
4.1	Work Experience- Appendix- 7.			
4.1(a)	Client's Completion Certificate in support of their work experience corresponding to the details given in Appendix- 7.			
4.1(b)	Declaration/ Undertaking from OEM in Appendices- 7A-1, 7A-2, 7B-1,7B-2, 7B-3, 7C-1, 7C-2, 7D-1, 7D-2, 7D-3.			
4.3	Financial data- Appendix- 8.			
4.3(a)	Affidavit for unaudited balance sheet Appendix- 8A (if applicable)			
4.3(b)	Audited balance sheet of last 3 financial years.			
4.4	Financial data- Appendix- 9.			
4.5	Works in Hand- Appendix- 10.			
4.6	All the forms, Annexures, Appendix etc. submitted as per tender document.			
5	ADDITIONAL REQUIREMENTS			
5.1	PAN No. submitted by tenderer.			

5.2	Self-attested Copy of the Goods and Service Tax registration certificate as per Central Goods and Service Tax Act' 2017 and State Goods and Service Tax Act'2017 in the state of Delhi/Haryana/UP i.e. the place of supply of goods and services.			
5.3	EPF Registration No.			
5.4	ESI Registration No. and Code No. as per ESI Act 1948.			
CHECK SHEET FOR FINANCIAL SUBMISSION				
Documents required to be submitted along with the Financial Package				
1	Priced Bill of Quantities.			
2	Appendix-3A Statement of Minor Deviation			
Note: The check list is indicative and not exhaustive. The bidders must go through the complete tenderdocuments and submit the required document accordingly.				

I have checked the above list with our submittal. I am also aware that if the application is not containing the above documents, our application is likely to be rejected.

Yours Truly,

FORM OF TENDER (FOT)

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

1. Having inspected the site and examined the General Conditions of Contract (November, 2019), Special Conditions of Contract, Conditions of contract on Safety & Health and Environment, Employer's Requirements, Specifications, Tender Drawings (if any), Instructions to Tenderers including Bill of Quantity and addenda thereto (if any) issued by the RCIL/CoR for the execution of above mentioned works, and the matters set out in Appendix 1 hereto, and having completed and prepared Appendices 2, 3, 4, 5, 6, 7, 7A-1, 7A-2, 7B-1, 7B-2, 7B-3, 7C-1, 7C-2, 7D-1, 7D-2, 7D-3, 8, 8A, 9, 10, 11, 12, 13, 14 & 15 hereto, we hereby (jointly and the severally)* offer to execute and complete the whole of the said works and commissioning and remedying any defects therein, in conformity with the above documents within the completion period of **05 Months**(from the date of commencement) for the sum stated in the Bill of Quantities (Financial Bid) as completed by us and appended hereto.
2. We undertake (jointly and severally)*
 - (a) to keep this Tender open for acceptance without unilaterally varying or amending its terms for the period stated in Notice of Invitation to Tender hereto (the withdrawal of any member or any other change in the composition of the partnership/joint venture/consortium on whose behalf this Tender is submitted shall constitute a breach of this undertaking)*; and
 - (b) If our Tender is accepted, to provide Guarantees, Undertakings and Warranties for the due performance of the Contract as stipulated in the General Conditions of Contract, Special Conditions of Contract and Appendix-1 hereto; and
 - (c) to hold in confidence all documents and information whether technical or commercial supplied to us at any time by or on behalf of the RCIL/CoR in connection with this Tender or with the above-mentioned Works and, without your written authority or as otherwise required by law, not to publish or otherwise disclose the same.
3. We submit with this Tender a duly executed Tender Guarantee in respect of our obligations under this Tender.
4. Unless and until a formal Agreement is prepared and executed, this Tender, together with your written acceptance thereof, shall constitute a binding contract between us.
5. We understand that you are not bound to accept the lowest or any tender you may receive.
6. We declare that the submission of this Tender confirms that no agent, middleman or any intermediary has been, or will be engaged to provide any services, or any other item of work related to the award and performance of this Contract. We further confirm and declare that no agency commission or any payment, which may be construed as an agency commission has been, or will be, paid and that the tender price does not include any such amount. We acknowledge the right of the Employer, if he finds to the contrary, to declare our Tender to be non-compliant and if the Contract has been awarded to declare the Contract null and void.
7. We acknowledge that the Appendix forms an integral part of the Tender.
8. If our Tender is accepted we understand that we are to be held solely responsible for the due performance of the Contract.
9. We are not participating, as a Tenderer, in more than one tender in this tendering process and we are not sub-contractor to any other tenderer participating in this tendering process in accordance with **A5**.
10. We do hereby undertake that we have not been banned or business by RCIL/CoR/ any other Metro Organizations/ 100% owned by Govt.)/ Ministry of Housing & Urban Affairs/ Order of Ministry of Commerce, applicable for all Ministries and also that none of our work was rescinded/ terminated by

RCIL/CoR/any other Metro Organizations/ 100% owned by Govt.) after award of contract during last 3 years due to non-performance.

Dated this _____ day of _____.

Yours Truly,

Annexure-1

RESOURCES PROPOSED FOR THE PROJECT – PERSONNEL

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

The figures indicated below are the minimum number of Project-Personnel required which are to be deployed as per the minimum level of supervision. The qualification/experience of such Project personnel is given under Annexure-2.

S. No.	Designation of Project Personnel	Minimum no. of Project-Personnel required
1	Engineer	1
2	Supervisor	1

Notes:

1. The contractor shall deploy the project personnel as per the above-mentioned minimum requirement and also confirm to deploy the same over and above the minimum numbers indicated above, if the work requires so.
2. The performance of project personnel deployed will be evaluated periodically by Employer during the contract period. In case the performance of any of the project personnel is not satisfactory, the Contractor shall replace them with competent and efficient immediately as per directions of the Engineer.
3. These minimum project personnel are as per the requirements of various activities at different stages of works. All project personnel need not to be mobilized simultaneously, project personnel as per the requirement of various stages of works shall be mobilized as per the agreed programme.
4. In case of non-deployment of project personnel, the penalty shall be imposed as indicated above and deducted from Contractor's running / final bills. In case of non-deployment, for the part of the month, penalty shall be imposed on pro rata basis. The decision of the Engineer in this regard, shall be final and binding. Other Safety/Environment personnel should be as per Conditions of Contract on Safety & Health and Environment.

Undertaking

1. We confirm to deploy Project Personnel required to achieve progress of work as per approved construction of work program.
2. We confirm to deploy man power requirement of SHE Organization as required under conditions of contract on Safety & health for *Electrical* works of O&M wing and Conditions of contract on Environment for civil works of O&M for contract up to/above 1.0 Crore confirm to deploy man power over and above the minimum numbers, if the work requires.

Yours Truly,

Annexure-2

MINIMUM ORGANISATION STRUCTURE REQUIRED

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

Minimum level of supervision & qualification/ experience of site staff is as follows:

S. No.	DESIGNATION	QUALIFICATION	EXPERIENCE LEVEL
1.	Engineer	Graduate/ Diploma in Electronics Engg. or equivalent	Total minimum experience of 03 years for Degree and 08 years for Diploma
2.	Supervisor	Diploma in Electronics Engg. or equivalent	Total minimum experience of 05 years

NOTES:

- i. The contractor shall deploy project personnel as per the above-mentioned minimum requirement and also confirm to deploy manpower over and above the minimum numbers indicated above, if the work requires so.
- ii. The performance of project personnel deployed will be evaluated periodically by Employer during the contract period. In case the performance of any of the project personnel is not satisfactory, the Contractor shall replace them with competent & efficient personnel immediately as per directions of the Engineer.

* Qualification and experience level of other safety/environment personnel should be as per Conditions of Contract on Safety & Health and Environment.

UNDERTAKING:

- i) We confirm to deploy project-personnel required to achieve progress of work as per construction work program submitted along with the bids or as approved by the Engineer.
- ii) We confirm to deploy manpower requirement of Safety & Health and Environment Organization as required under Conditions of Contract on Safety & Health and Environment, and also confirm to deploy manpower over and above the minimum numbers, if the work requires so.

Yours Truly,

**FORMAT FOR AFFIDAVIT TO BE SUBMITTED BY BA/SI ALONGWITH THE EOI
DOCUMENTS**

(To be executed in presence of Public notary on non-judicial stamp paper of the value of Rs.100/-. The stamp paper has to be in the name of the BA/SI)**

I(Name and Designation)** appointed as the attorney/authorized signatory of the BA/SI (including its constituents),

M/s(hereafter called the BA/SI) for the purpose of the EOI documents for the work ofas per the EOI No.of (-----RailTel), do hereby solemnly affirm and state on the behalf of the BA/SI including its constituents as under:

1. I/we the BA/SI (s), am/are signing the document after carefully reading the contents.
2. I/We the BA/SI(s) also accept all the conditions of the EOI and have signed all the pages in confirmation thereof.
3. I/We hereby declare that I/we have downloaded the EOI documents from RailTel website www.railtelindia.com. I/we have verified the content of the document from the website and there is no addition, no deletion or no alteration to the content of the EOI Document. In case of discrepancy noticed at any stage i.e. evaluation of EOIs, execution of work or final payment of the contract, the master copy available with the RailTel Administration shall be final and binding upon me/us.
4. I/we 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.
5. I/We also understand that my/our offer will be evaluated based on the documents/credentials submitted along with the offer and the same shall be binding upon me/us.
6. I/We declare that the information and documents submitted along with the EOI by me/us are correct and I/we are fully responsible for the correctness of the information and documents, submitted by us.
7. I/we undersigned that if the certificates regarding eligibility criteria submitted by us are found to be forged/false or incorrect at any time during the process for evaluation of EOIs, it shall lead to forfeiture of the EOI EMD besides banning of business for five years on entire RailTel. Further, I/we (insert name of the BA/SI)**and all my/our constituents understand that my/our offer shall be summarily rejected.
8. I/we also understand the if the certificates submitted by us are found to be false/forged or incorrect 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 banning of business for five years on entire RailTel.

DEPONENT SEAL AND SIGNATURE OF THE BA/SI VERIFICATION

I/we above named BA/SI do hereby solemnly affirm and verify that the contents of my/our above affidavit are true and correct. Nothing has been concealed and no part of it is false.

DEPONENT SEAL AND SIGNATURE OF THE BA/SI

Place: Dated:

Appendix-3A**PROFORMA FOR STATEMENT OF MINOR DEVIATIONS**

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

1. The following are the particulars of minor deviations from the requirements of the Tender Document:

Sr. No	Clause	Deviations	Price adjustment for each deviation/s

Note :

1. The Tenderer shall indicate price adjustment against each deviation in Appndix-3A of BOQ. This price is the price which the tenderer shall reduce from his tender price if deviation(s) is/are accepted by the Employer.

2. Where there is no deviation, the statement should be returned duly signed with an endorsement indicating 'No Deviations'. In case, Performa of deviations is not submitted or submitted as blank, it will be construed that the tenderer has not proposed any deviations from tender documents.

3. If the tenderer proposes deviations in tender documents, and/or any other terms and conditions of the tender, other than in this Appendix, it will have no effect.

Yours Truly,

Annexure-4**UNDERTAKING FOR TENDER SECURITY DECLARATION**

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

We, _____ hereby confirm that we are submitting the EOI:-“Supply and Installation of Smart Solutions Equipment in CoR-Delhi” floated by RCIL.

We do hereby undertake that in the following cases, we shall be debarred from participating in the re-tender of this work and also will be debarred from participating in any tender of RCIL or a period as specified in table below:

S. No.	Case	Period of ban*
1.	a) if we resile or withdraw our Tender during the period of Tender evaluation before opening of Financial Package (in case of two package system); or	One Year
2.	a) if we resile or withdraw our Tender during the period of Tender evaluation in case of single package system ; or b) if we do not accept the correction of our Tender price during evaluation of Financial Proposal; or c) if, having been notified of the acceptance of our Tender by RCIL during the period of tender validity, we (i) fail or refuse to furnish the unconditional acceptance of LOA within the time limit as specified in EOI.	In all the cases Two years

- Period of ban shall be from the date of resiling/withdrawal of this tender or from date of issue of LOA, as the case may be.

Yours Truly,

Annexure-5A

FORM OF PERFORMANCE SECURITY (GUARANTEE) BY BANK

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Date:

1. This deed of Guarantee made this..... day of..... (month & year) between Bank of..... (herein after called the "Bank") of the one part, and RailTel Corporation of India Limited (hereinafter called "the Employer") of the other part.
2. Whereas RailTel Corporation of India Limited has awarded the contract for(*name of work*)(hereinafter called "the contract") to M/s.....(Name of the Contractor)....hereinafter called "the Contractor".
3. AND WHEREAS the Contractor is bound by the said Contract to submit to the Employer a Performance Security for a total amount of Rs..... (Amount in figures and words).
4. Now we the Undersigned..... (Name of the Bank) being fully authorized to sign and to incur obligations for and on behalf of and in the name of (Full name of Bank), hereby declare that the said Bank will guarantee the Employer the full amount of (Amount in figures and Words) as stated above.
5. NOW THEREFORE, we hereby affirm that we are the Guarantor and responsible to you, on the behalf of the contractor and we hereby unconditionally, irrevocably and without demur undertake to immediately pay to the Employer upon first written demand and without cavil or argument, any sum or sums within limits of (Amount of Guarantee) as aforesaid without reference to the Contractor and without your needing to prove or show grounds or reasons for your demand for the sum specified therein. The bank shall pay to the Employer any money so demanded notwithstanding any dispute/disputes raised by the contractor in any suit or proceedings pending before any Court, Tribunal or Arbitrator/s relating thereto and the liability under this Guarantee shall be absolute and unequivocal.
6. This Guarantee is valid till (The initial period for which this Guarantee will be valid must be for at least 6-months (six months) longer than the anticipated expiry date of original contract period.
7. At any time during the period in which this Guarantee is still valid, if the Employer agrees to grant a time extension to the Contractor or if the Contractor fails to complete the Works within the time of completion as stated in the Contract, or fails to discharge himself of the liability or damages or debts as stated under Para 5, above, it is understood that the Bank will extend this Guarantee under the same conditions for the required time on demand by the Employer and at the cost of the Contractor.
8. The bank agrees that no change, addition, modifications to the terms of the Contract Agreement or to any documents, which have been or may be made between the Employer and the Contractor, will in no way release us from the liability under this Guarantee, and the Bank, hereby, waives any requirement for notice of any such change, addition or modification to the Bank.
9. The Guarantee hereinbefore contained shall not be affected by any change in the Constitution of the Bank or of the Contractor.
10. The neglect or forbearance of the Employer in enforcement of payment of any moneys, the payment

whereof is intended to be hereby secured or the giving of time by the Employer for the payment hereof shall in no way relieve the bank of their liability under this deed.

11. The expressions “the Employer”, “the Bank” and “the Contractor” hereinbefore used shall include their respective successors and assigns.
12. Notwithstanding anything contained herein:
- (a) Our liability under this bank Guarantee shall not exceed (.....)
 - (b) This bank Guarantee shall be valid up to.....
 - (c) We are liable to pay the Guarantee amount or part thereof under this Bank Guarantee only & only if you serve upon us a written claim or demand on or before.....

In witness whereof I/We of the bank have signed and sealed this guarantee on the.....day of (Month & Year) being herewith duly authorized.

For and on behalf of the _____ Bank.

Signature of authorized Bank official

Name:

Designation:

I.D. No. :

Stamp/Seal of the Bank:

Signed, sealed and delivered for and on behalf of the Bank by the above named _____

In the presence of:

Witness 1.

Signature

Name

Address

Witness 2.

Signature

Name

Address

Notes:

1. The stamp papers of appropriate value shall be purchased in the name of the Bank, who issues the ‘Bank Guarantee’.
2. The ‘Bank Guarantee’ shall be from the Scheduled Commercial Bank based in India, acceptable to Employer.
3. The Bank Guarantee must be issued on the structured financial messaging System (SFMS) platform.
4. A separate copy of the BG has to be sent by the issuing bank to the Employer’s bank through SFMS. The details of Employer’s bank are as under.
5. Following codes are to be used by issuing bank for the purpose of confirmation and amendment in Bank Guarantees:-

Code	Purpose
MT760/ IFN760	Bank Guarantee Issuance
MT767/IFN767	Bank Guarantee Amendment
IFN760 COV	Confirmation of Bank Guarantee Issuance
IFN767 COV	Confirmation of Amendment in Bank Guarantee

6. Bank Guarantee issued on the SFMS platform with any other code other than mentioned above for the purpose shall not be acceptable to the employer.

Yours Truly,

Annexure-5B

Date: __/__/____

To,
RailTel Corporation of India Limited,
6th Floor, IIIrd Block,
Delhi Technology Park,
Shastri Park, Delhi-110053.

Dear Sir/ Madam

Sub: Issuance of FDR..... amounting to Rs.....valid till.....

It is hereby certified that FDR bearing number.....dated..... amounting to.....
(Amount in figure and words) has been issued by (Name of the Bank) branch
address..... The maturity value is on dated.....

This FDR has been issued on the request of M/s (Name of the contractor) under the
Contract No. This FDR can be redeemed without involving the contractor
M/s.....(Name of the contractor) on demand of M/s RailTel Corporation of India Limited.

This FDR has been issued by authorised signatory of the Bank. For or

on behalf of (Name of the Bank)

Signature.....

Name:

Designation:

Stamp of Bank.....

Annexure-6

(Agreement on non-judicial stamp paper on Rs.100/-)

FORM OF AGREEMENT

This Agreement is made on the _____ day of _____ (Month & Year) Between RailTel Corporation of India Limited, 6th Floor, IIIrd Block, Delhi Technology Park, Shastri Park, Delhi-110053 hereinafter called "the Employer" of the one part and _____ (Name and Address of Contractor) _____ hereinafter called "the Contractor" of the other part.

Whereas the Employer is desirous that (** certain Goods and Services should be provided and) certain Works should be executed, viz EOI - **"Supply and Installation of Smart Solutions equipment in CoR-Delhi"**. Hereinafter called "the Works" and has accepted a Tender by the Contractor for the execution and completion of such works (** as well as guarantee of such works) and the remedying of defects therein.

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement words and expression shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz:
 - (a) Letter of acceptance
 - (b) Notice Inviting Tender
 - (c) Instructions to Tenderers (Including Annexures)
 - (d) Form of Tender with Appendix
 - (e) General Conditions of Contract (Nov, 2019 with correction slip 2)
 - (f) Special Conditions of Contract
 - (g) Employer's Requirements
 - (h) Technical Specifications
 - (i) Tender drawings
 - (j) Bill of Quantities
 - (k) Conditions of contract on Safety & Health for Electrical work Contracts of O&M wing
 - (l) Addendums, if any
 - (m) Other conditions agreed to and documented:
3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the works by ** _____ and remedy any defects therein in conformity in all respects with the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the works and the remedying of defects therein, the Contract Price of **Rs _____ being the sum stated in the letter of acceptance subject to such additions thereto or deductions there from as may be made under the provisions of the Contract at the times and in the manner prescribed by the Contract.
5. **OBLIGATION OF THE CONTRACTOR**

The contractor shall ensure full compliance with tax laws of India with regard to this contract and shall be solely responsible for the same. The contractor shall submit copies of acknowledgements evidencing filing of returns every year and shall keep the Employer fully indemnified against liability of tax, interest, penalty etc. of the contractor in respect thereof, which may arise.

The staff/ laborer recruited by the Contractor for said work will be the sole responsibility of the Contractor and RCIL/ CoR will not be involved in it in any way. The staff / labour so recruited by the Contractor will not have any right whatsoever at any stage to claim employment in RCIL/ CoR.
6. **JURISDICTION OF COURT**

The Courts at Delhi/New Delhi shall have the exclusive jurisdiction to try all disputes arising out of this agreement between the parties.

IN WITNESS WHEREOF the parties hereto have caused their respective Common Seals to be hereunto affixed / (or have hereunto set their respective hands and seals) the day and year first above written.

For and on behalf of the
Contractor

For and on behalf of the Employer

Signature of the authorized
official

Signature of the authorized official

Name of the official

Name of the official

Stamp/Seal of the Contractor

Stamp/Seal of the Employer

SIGNED, SEALED AND DELIVERED

By the said

By the said

_____ Name

_____ Name

on behalf of the Contractor in the
presence of:

on behalf of the Employer in the presence
of:

Witness _____

Witness _____

Name _____

Name _____

Address _____

Address _____

Note :

+ To be made out by the Employer at the time of finalization of the Form of Agreement.

** Blanks to be filled by the Employer at the time of finalization of the Form of Agreement.

*** to be deleted if not applicable.

ANNEXURE-7

TIE BETWEEN TWO LOWEST TENDERERS

In case, the evaluated financial offers of two or more technically qualified bidders are same and Lowest (i.e. L-1), then the tender would be awarded to the bidder who is financially more sound i.e. who scores more points as detailed in this Annexure-7.

The financial soundness of such bidders shall be judged based on the approximate value of work to be done in one year denoted as 'X' which will be calculated as under:

$$X = \frac{\text{Approx. cost of work as given in NIT}}{\text{Time of completion in years}}$$

Criteria for different financial parameters will be as under:

1. Working Capital/Net cash flow (Current Assets minus Current Liabilities):

$$\geq \frac{X}{5} = 3 \text{ points}$$

$$\geq \frac{X}{5} \text{ but } < \frac{X}{6} = 2 \text{ Points}$$

$$\geq \frac{X}{6} \text{ but } < \frac{X}{7} = 1 \text{ points}$$

$$< \frac{X}{7} = 0 \text{ points}$$

2. Profit before Tax:

$$\begin{array}{ll} \text{Positive in 3 years} & = 2 \text{ points} \\ \text{Positive in 2 years} & = 1 \text{ points} \\ \text{Negative in all 3 years} & = 0 \text{ points} \end{array}$$

3. Net Worth:

$$\geq \frac{X}{3} = 3 \text{ points}$$

$$\geq \frac{X}{4} \text{ but } < \frac{X}{3} = 2 \text{ points}$$

$$\geq \frac{X}{5} \text{ but } < \frac{X}{4} = 1 \text{ points}$$

$$< \frac{X}{5} = 0 \text{ points}$$

4. Average annual turnover:

$$\geq 2X = 3 \text{ points}$$

$$\geq 1.4X \text{ but } < 2X = 2 \text{ points}$$

$$\geq 0.8X \text{ but } < 1.4X = 1 \text{ points}$$

$$< 0.8X = 0 \text{ points}$$

Note:

(a) Working capital and Net Worth will be based on latest audited balance sheet.

(b) Average Annual Turnover and profitability will be based on last 3 years audited balance sheets. In case audited balance sheet of the last year is not made available by the bidder, he has to submit an affidavit certifying that 'the balance sheet has actually not been audited so far'. In such a case, the average of Turnovers of previous 2 years will be taken into consideration for evaluation. If audited balance sheet of any other year than the last year is not submitted, the tender will be considered as non-responsive.

(c) In case of Joint Ventures/Consortia, these financial parameters will be worked out as under:

(1) Working Capital:

(i) **For Minimum requirement (Initial Filter Criteria) :**

Requirement of working capital is to be distributed between members as per their percentage participation and every member should satisfy the minimum requirement.

Example:

Let Member-1 has percentage participation=M and member-2 has percentage participation=N. If minimum working capital required is 'W' then working capital of member-1 $\geq \frac{W \times M}{100}$ and working capital of member-2 $\geq \frac{W \times N}{100}$

(ii) **For allotment of points:**

Figures of working capital required for different points to be distributed between members as per their percentage participation. Points to be allotted to every member based on this distribution and working capital of the member. Minimum of the points allotted to any members shall be the points of the JV.

(2) Profitability:

(i) **For minimum requirement (initial filter criteria):** The profitability of only lead member shall be evaluated.

(ii) **For allotment of points:** Points will be allotted to every partner separately and the weighted average of the points scored by each partner/member as per their participation will be the profit of JV/Consortium.

Example: Let Member-1 has percentage participation of =M and Member-2 has percentage participation of =N. Let the points scored by Member-1 are 'A' and by Member-2 is 'B', then, the score of JV will be $\frac{AM}{100} + \frac{BN}{100}$.

100

(3) Net Worth: Net Worth will be based on the percentage participation of each Member.

Example: Let Member-1 has percentage participation = M and Member-2 has =N. Let the Net worth of Member-1 is A and that of Member-2 is B, then the Net worth of JV will be:

$$= \frac{AM+BN}{100}$$

(4) Average annual turnover from works: The average annual turnover of JV will be based on percentage participation of each member.

Example: Let Member-1 has percentage participation = M and Member -2 has = N. **Let the average annual turnover of Member-1** is 'A' and that of Member -2 is 'B', then the average annual turnover of JV will be:

$$= \frac{AM+BN}{100}$$

Non-Disclosure Agreement

CONFIDENTIAL AND MUTUAL NON- DISCLOSURE AGREEMENT

THIS AGREEMENT MADE ON THIS DAY OF __, 2021 AT New Delhi

BETWEEN

_____ a company incorporated in India under the provisions of the Companies Act, 1956 and having its Registered Office at (hereinafter referred to as "Company") represented by its Managing Director / CEO Mr./Ms _____ duly authorized for the same which expression shall unless repugnant to the meaning or context thereof be deemed to mean and include, its Directors, affiliates, successors and permitted assigns of the **FIRST PART**

AND

RailTel Corporation of India Limited, is a Government of India undertaking under the Ministry of Railways duly incorporated under the provisions of the Companies Act, 1956 and having its registered office and Corporate office at Plat-A, 6th Floor, Office Block Tower-2, East Kidwai Nagar, New Delhi- 110023 (hereinafter referred to as "RailTel") , represented by Dy. General Manager/Law & CS Mr. J.S. Marwah duly authorized for the same which expression shall mean and include unless repugnant to the context, its successors, representative and permitted assigns of the **SECOND PART**

WHEREAS

- A. Company is poised to provide services to for project.
- B. RAILTEL is a Public Sector Undertaking (PSU under the Ministry of Railways), setup inter alia to exploit Indian Railway's large telecom infrastructure.
- C. COMPANY and RAILTEL are working-out/ negotiating a possible commercial and strategic business relationship (hereinafter Purpose)
- D. During the course of the above negotiations RAILTEL and COMPANY (including their affiliates may in conjunction with the purpose and for their mutual benefit, disclose to each other certain information being proprietary and/or of confidential nature, and/or RAILTEL and COMPANY may receive and share or be grant access by the other to such confidential and/or proprietary information which is considered trade secret, proprietary, confidential and/ or sensitive;
- E. The parties and its affiliates wish to ensure the protection and secrecy of their respective confidential information which may be disclosed, received or granted access to by the other party and wish to reduce to writing, their agreement in this respect.

NOW THEREFORE in consideration of the mutual promises, covenants and representations recorded herein by the parties hereto and such additional promises and understanding as are hereinafter set forth, the parties agree as follows:

- 1) Definition

For the purpose of this agreement, the term 'Confidential Information' shall mean and include any information or data of a scientific, technical, commercial or financial nature disclosed by the Disclosing party to the Receiving Party or which is obtained by a party from the other whether in writing, pictorially, in machine readable form, on disc, mail or orally, or by any other means/ modes of disclosure and including without limitation any information contained in any written or printed document, hardware, firmware and software, information related to technology and business activities (including, but not limited to, communication systems, telecommunication, business outlooks, revenue, pricing, trade secrets), computer programs, software (including, without limitations, code, software output, screen displays, file hierarchies and user interfaces), formulas, data, inventions, techniques, technology, know-how, processes, ideas, (whether patentable or not), schematics, specifications, drawings, product designs, product plants, programming, services, strategies, third party confidential information, and corporate and personnel statistics, customer lists (potential or actual) and other customer-related information, supplier information, sales statistics, market intelligence, marketing, business working, operations, parent, subsidiaries, affiliates and other business strategies and other commercial information of a confidential nature.

(a) The party disclosing the Confidential Information is referred herein to as "Disclosing Party" and the party to which such Confidential Information is disclosed is referred to herein as "Recipient Party".

(b) "Affiliate" of the Party shall mean the Company or other person who or which is either controlled by the respective Party or who controls the respective Party or who or which is controlled by same person/ entity who controls the respective Party, either by way of significant shareholding, voting rights or technical collaboration whether directly or indirectly through its affiliate.

- 2) Neither party shall be required to disclose any particular information (including but not limited to Confidential Information) to the other and disclosure of any such information shall be entirely voluntary and at the sole discretion of the parties and to the extent deemed necessary by it and is not intended to, and shall not, create any contractual or other relationship or obligation of any kind beyond the terms of this Agreement nor any provision or disclosure of information (including but not limited to Confidential Information) as contemplated hereunder, shall be construed as creating, conveying, transferring by one party on the other any rights, license or authority in or to the information provided. The parties hereto shall use the Confidential Information only for the limited purpose of exploring/ finalizing the possible business relationship between the parties hereto and for no other purpose whatsoever.
- 3) Both the parties acknowledge and understand that any exchange of confidential Information of any nature shall not commit or bind the other to enter into a contract or otherwise and that neither party shall rely on any information provided by the other as a commitment or an inducement to act or not to act in any given manner. Further neither party shall be liable to the other in any manner whatsoever for any decisions, obligation, costs or expenses incurred, changes in business practices, plans, organization, products, services or

otherwise of the other, as a result of this Agreement or any exchange of Confidential Information hereunder.

- 4) Both the Parties agrees and undertake to regard and preserve as Confidential Information provided by each to the other or which may be disclosed, received or granted access to by either party or come to the knowledge of either party in any manner in connection with the negotiations for the possible business relationship.
- 5) (a) In maintaining the Confidential Information hereunder both parties agree that they shall not, without first obtaining the written consent of the other, disclose or make available to any person, firm or enterprise, reproduce or transmit, or use (directly or indirectly) for its own benefit or the benefit of others, any Confidential Information save and except that either party may disclose any Confidential Information to its Directors, officers, employees, or advisors on a "need to know" basis to enable them to evaluate such "Confidential Information" in connection with the negotiation for the possible business relationship between the Parties hereto.

(b) Both parties shall ensure that the said employee(s) and / or the said person(s) shall maintain confidentiality with regard to the disclosed Confidential Information, if any, and shall issue two suitable instructions and/or get two suitable written undertakings or agreements executed to binds its employees and/or the said person(s) to the same obligations of confidence and safeguarding as the parties hereto and to adhere to the confidentiality/ non disclosure terms contained in this Agreement.

(c) Save and except for the purposes mentioned in clause (a) above both parties further agree that neither party will part with/ disclose any "Confidential Information" received by it to any other person directly or indirectly nor make copy(s) or reproduce in any way (including without limitation store in any computer or electronic system any written material/ documents containing "Confidential Information" and such written material/ documents will be retained under strict confidentiality by the receiving party.

(d) Both parties further agree that the confidential information which may pertain to or touch upon any regulatory aspects and/or dealings of either party with any statutory / government/ related agencies/ bodies, whether the said information is received verbally or in writing, will not be disclosed in any manner, either directly or indirectly, to any other persons except to its Directors, employees or advisors on a strictly 'need to know' basis.

(e) Both parties further agree to exercise the same degree of care that it exercises to protect its own Confidential Information of a like nature from unauthorised disclosure, but in no event shall a less than reasonable degree of care be exercised by either party.
- 6) It is mutually acknowledged and agreed that information shall not be considered "Confidential Information" to the extent, that such information: (a) at the time of disclosure was in the public domain or (b) is already known to the receiving party

free of any confidentiality obligation at the time it is obtained from other party; or (c) after disclosure is or becomes publicly known or available through no wrongful act of the receiving party; or (d) is rightfully received from a third party without restriction or (e) is approved for release, disclosure, dissemination or use by written authorization from the Disclosing Party; or (f) is required to be disclosed pursuant to a requirement of a governmental agency or law so long as the parties provide each other with timely prior written notice of such requirement and provide all reasonable co-operation in regard to taking protective action against such disclosure requirement; or (g) is disclosed after expiry of 5 (five) years from the date of expiry or earlier termination of this agreement.

However, before any party discloses any Confidential Information under clause 6, either party (to the extent permitted by law) uses its best endeavour to:

- (a) inform other party of any circumstances and the information that will be disclosed
- (b) give the other party a copy of a legal opinion indicating that disclosure is necessary
- (c) consult with the other party as to possible steps including without limitation, protective orders or other appropriate remedy to avoid or limit disclosure and take those steps where they would not result in significant adverse consequences to the other party and
- (d) gain assurances as to the confidentiality from the body to whom the information is to be disclosed.

If either party is unable to inform the other party before confidential information is disclosed it will (to the extent permitted by law) inform the other party of the full circumstances of the disclosure and information that has been disclosed immediately after disclosure.

- 7) Both parties further agree and undertake not to disclose the information marked "Confidential Information" of the other to their agents or contractors without prior written approval from the other and without having first obtained from each agent or contractor a separate written agreement or undertaking binding them to the same obligations of confidence and safeguarding.
- 8) The parties further recognize that it may be necessary or appropriate for COMPANY to disclose Confidential Information to other Group Companies not named herein. For this purpose, COMPANY guarantees the observance and proper performance of other Group Company to whom Confidential Information is disclosed as above, of the terms and conditions of this agreement.
- 9) Both parties further agree to indemnify and keep indemnified each other against all actual loss and damage which the Disclosing Party may suffer as a result of any breach of this agreement by the Recipient Party of the Confidential Information. Provided always that
 - a. the Disclosing Party shall forthwith give written notice to the recipient Party of the loss and damage; and

b. the Recipient Party shall be furnished with satisfactory documentary evidence of such actual loss and damage.

- 10) Both parties further agree that upon termination/ expiry of this Agreement or at any time during its currency, at the request of the Disclosing Party the Recipient Party shall promptly (and in any case, within 15 days of request), deliver to the Disclosing Party all copies of the Confidential Information in its possession or under its direct or indirect control or shall destroy all memoranda, notes and other writings prepared by the recipient party or its affiliates, Directors, officers, employees or advisors to the extent the same are based on the confidential information with a written statement to the effect that upon such return the Receiving Party has not knowingly retained in its possession or under its control, either directly or indirectly, any Information or copies of such (other than Confidential Information embedded in the Receiving Party's records).

The confidentiality obligations set out herein above shall survive any such return or destruction of Information. Further The provisions set out herein above shall not apply to copies of electronically exchanged Information made as a matter of routine information technology backup and to Information or copies thereof which must be stored by the receiving Party, its Affiliates or its advisers according to provisions of mandatory law, provided that such Information or copies thereof shall be subject to an indefinite confidentiality obligation according to the terms and conditions set forth herein.

- 11) Both parties acknowledge that the confidential information coming to the knowledge of the other may relate to and/or have implications regarding the future strategies, plans, business activities, methods, processes and or information of the parties which afford them certain competitive and strategic advantage. Accordingly neither party will use the confidential information or strategies, plans, business activities, methods, process, information, and /or competitive and strategic advantage to the other.
- 12) Each party understands that the other party may currently or in the future be developing information internally, or receiving information from third parties that may be similar to the "confidential Information" Accordingly, nothing in this agreement will be construed as a representation or inference that either party will not develop products, or have products developed for it, or enter into joint ventures, alliances, or licensing arrangements that, without violation of this agreement, compete with the products or systems embodying the "confidential Information".
- 13) Except as specifically provided herein, disclosure of confidential information by either party pursuant hereto shall not be deemed to grant to the Recipient party, any rights, interest or property in such confidential information and accordingly both parties agree that they will not directly or indirectly claim or submit any application for grant of any patent, copyright, design right or other intellectual property Rights in, to or on the basis of the confidential information.
- 14) The parties hereto acknowledge and agree that in the event of a breach or

threatened breach by the other of the provisions of this Agreement, the party not in breach will have no adequate remedy in money or damages and accordingly notwithstanding anything contained in clause 18 hereof, the party not in breach shall be entitled to injunctive relief against such breach or threatened breach by the party in breach : provided , however, no specification in this confidentiality Agreement of a specific legal or equitable remedy shall be construed as a waiver or prohibition of any other legal or remedies in the event of a breach or threatened breach of this Agreement and the remedies specified herein shall be in addition to all other reliefs and remedies available to the parties under prevailing laws.

- 15) No failure or delay by either party in exercising or enforcing any right, remedy or power hereunder shall operate as a waiver thereof, nor shall any single or partial exercise or enforcement of any right, remedy or power preclude any further exercise or enforcement of any right, remedy or power preclude any single or partial exercise or enforcement thereof or the exercise or enforcement of any of any other right, remedy or power.
- 16) Each Party acknowledges that the other Party makes no representation or warranty as to the accuracy or completeness of any of the Information furnished by or on its behalf. Only those representations and warranties which are made in a final definitive agreement relating to the purpose of the disclosure of the Information will have legal effect.

Each party represents and warrants to the other that it is a corporation duly organised and validly existing in the jurisdiction of its incorporation. Each party represents that it has full corporate power and authority to enter into this Agreement and to do all things necessary for the performance of this Agreement. The Disclosing Party warrants that the Confidential Information has not been provided in breach of any other agreements having legal binding of any nature with the third party(s).

Unless documented and agreed otherwise in respect of any individual disclosure of Confidential Information, each party warrants that it will use its best endeavors to ensure that any Confidential Information it discloses or it intends to disclose to the other party under the provisions of this agreement is complete and accurate but PROVIDED ALWAYS that the disclosing party has exercised such best endeavors:

The parties acknowledge that:

- (a) such Confidential Information as is disclosed by the Disclosing party under this Agreement is accepted by the Receiving Party at its own risk; and
- (b) it releases the Disclosing party from all claims, actions and suits in relation to such Confidential Information (including its use under this Agreement).

- 17) This agreement will be governed by the laws of India and jurisdiction shall be exclusively vested in the courts at New Delhi, India only.

- 18) If any matter arises between the parties about this agreement then the parties shall meet to discuss the matter and shall negotiate in good faith to endeavour to resolve the matter arising the matter however.
- a. If any matter arising has not been resolved by the parties within thirty (30) days after the date the party raising the matter gave notice of it to the other party: then
 - b. the matter shall be submitted by either party to Arbitration. Arbitration shall be held in New Delhi, India. The arbitration shall be conducted as per the provisions of Indian Arbitration and Conciliation Act 1996 and any statutory modification or reenactment thereof.
 - c. Each party to the dispute shall appoint one Arbitrator each and the two Arbitrators shall appoint the third or the presiding Arbitrator. The arbitration proceedings shall be conducted in the English language. The courts of law at New Delhi, India alone shall have the jurisdiction. The arbitration award shall be final and binding upon the parties and judgement may be entered thereon, upon the application of either party to a court having jurisdiction.
 - d. Each party shall bear the cost of preparing and presenting its case, and the cost of arbitration, including fees and expenses of the arbitrators, shall be shared equally by the parties unless the award otherwise provides.
- 19) This agreement shall not be assignable or transferable by either party without the written consent of the other party.
- 20) No license to a Party hereto, under any trademark, patent, copyright or any other intellectual property right, is either granted or implied by the conveying of Information to such party.
- 21) This agreement shall remain valid for a period of 3 (three) years from the date of execution of this Agreement which term may be extended by mutual consent in writing of both the parties. This agreement may be terminated by either party by giving 30 (thirty) days notice in writing to the other party without assigning any reason whatsoever. However, the obligations of each party hereunder shall survive the termination or earlier determination or expiry of this Agreement and shall continue and be binding upon the parties irrespective of whether the discussion between the parties materialize into a specific understanding/business relationship or not for a further period of 5 (five) years after termination / expiry of the Agreement.
- 22) All notices required by this Agreement shall be in writing, and shall be personally delivered, sent by registered post or by commercial courier, addressed as follows:

To Company: Mr/Ms

To RAILTEL:

Attn: Mr. J. S. Marwah

RailTel Corporation of India Limited, Plat-A, 6th Floor,

Office Block Tower-2, East Kidwai Nagar, New Delhi- 110023

Nothing in this provision shall be construed to prohibit communication by more expedient means, such as by telephone or facsimile transmission, to accomplish timely communication. However, to constitute effective notice, written confirmation of a telephone conversation or an original of facsimile transmission must be sent by registered post, by commercial carrier, or hand -delivered. Each party may change the address by written notice in accordance with this paragraph. Notices delivered personally shall be deemed communicated as of actual receipt; mailed notices shall be deemed communicated as of four days after mailing, unless such date is a date on which there is no mail service. In that event communication is deemed to occur on the next mail service day.

23) This agreement supersedes all prior discussions and writings with respect to the confidential information and constitutes the entire Agreement between the parties with respect to the subject matter hereof and no modifications of this Agreement or waiver of the terms and conditions hereof shall be binding upon either of the parties hereto, unless approved in writing by an authorized representative of each party. In the event that any of the provisions of this Agreement shall be held by court or other Tribunal of competent jurisdiction to be unenforceable, the remaining portions hereof shall remain in full force and effect and this Agreement shall be interpreted and construed accordingly.

24) This Agreement is executed in duplicate, each of which shall be deemed to be the original and both when sent together shall be deemed to form one and single document.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the date and year written above.

For
Sign:

For RailTel Corporation of India Ltd.
Sign:

Name:
Title:

Authorized Signatory

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PART – I: SAFETY AND HEALTH MANAGEMENT

1.0 General

1.1 Scope

This document defines the principal requirements of the Employer on Safety and Health associated with the contractor / sub-contractor and any other agency to be practiced in works at all time.

1.2 Definition / languages

In this document

- a) The use of ‘shall’ indicates a mandatory requirement.
- b) The use of ‘should’ indicates a guideline that is strongly recommended.
- c) The use of ‘may’ indicates a guideline that is to be considered.
- d) Employer means CoR/ RCIL.
- e) Chief Safety Officer means an officer nominated by CoR who is overall responsible for monitoring all Safety and Health functions prescribed in this document.
- f) BOCWA means Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996
- g) BOCWR means Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Central Rules, 1998
- h) DBOCWR means Delhi Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Rules, 2002
- i) DG means Director General of Ministry of Labour, Govt. of India.
- j) CIIBC means Chief Inspector of Inspection of Building and Other construction works of Govt. of Delhi.

1.3 Application of this document

This document applies to all aspects of the contractor’s scope of work, including all aspects conducted by sub-contractors and all other agencies. There shall be no activity associated to the contract, which is exempted from the purview of this document.

1.4 Purpose of this document

The objective of these guidelines is to ensure that adequate precautions are taken to avoid accidents, occupational illness and harmful effects on the environment during work.

2.0 ‘SHE’ Targets and Goals

The SHE targets, goals and aim for the Works are to achieve:

- a) Zero total recordable injuries.
- b) Zero reportable environmental incidents
- c) 100% incident recording and reporting
- d) 100% adherence of usage of appropriate PPEs at work.
- e) Executing work with least disturbance to the environment, adjoining road users and traffic.

3.0 Compliance

3.1 CoR’s Safety and Health Policy and Management Systems

The works shall be undertaken in accordance with CoR’s Safety and Health Policy and Management Systems as amended from time to time provided in Safety and Health Manual.

3.2 Indian statutory requirements

Contractor shall develop thorough understanding about Building and Other construction Workers (Regulation of Employment and Conditions of Service) Act 1996, Central Rules 1998, Delhi Govt. Rules 2002, Building and Other construction workers Welfare Cess Act, 1996 and Central Rules, 1998 and Delhi Building Workers' Welfare Board Rules, not only to satisfy the Inspectors' perspective but the use of legislation as the strong tool for effective SHE management at work place work places. Contractor is strongly advised to practice the principle of voluntary compliance.

In addition, the works shall be undertaken in accordance with all applicable legislation and Indian statutory requirements listed below but not limiting to with their latest amendments:

- a) Indian Electricity Act 2003 and Rules 1956 .
- b) National Building Code, 2005
- c) Factories Act, 1948 and Delhi Factories Rules.
- d) Gas Cylinder Rules, 2003
- e) The Public Liability Insurance Act 1991 and Rules 1991
- f) Employees Compensation Act, 1923 along with allied Rules
- g) Minimum Wages Act, 1948 and Rules 1950
- h) Contract Labour Act, 1970 and Rules 1971
- i) Child Labour (Prohibitions & Regulations) Act, 1986 and Rules 1950
- j) Environment Protection Act, 1986 and Rules 1986
- k) Air (Prevention and control of Pollution) Act, 1981
- l) Water (Prevention and Control of Pollution) Act, 1974
- m) The Noise Pollution (Regulation & Control) Rules, 2000
- n) Notification on Control of Noise from Diesel Generator (DG) sets, 2002
- o) Recycled Plastic Usage Rules, 1998
- p) Notification, Central Ground Water Board, Act January 1997
- q) Manufacture, Storage & Import of Hazardous Chemicals Rules, 1989
- r) The Hazardous Waste (Management & Handling) Rules, 1989
- s) Hazardous Waste Management Rules 1989 (as amended in 1999)
- t) Batteries (Management and Handling) Rules

4.0 ID Card and First day at work, SHE orientation training

Identity card to each staff shall be issued by the Contractor. The contractor should submit application for this in the prescribed format clearly providing basic details affixing photographs and finger prints of the concerned staff. In the absence of valid identity card, the staff shall not be permitted to enter into the station premises/work sites.

The Contractor shall ensure that all personnel working at the site receive an induction Safety and Health training explaining the nature of the work, the hazards that may be encountered during the work place work and the particular hazards attached to their own function within the operation.

5.0 Safety and Health Training

- 5.1 The contractor shall organise quality SHE training to engage Managers, supervisors and other personnel in behavioural change and improve safety performance.

The Contractor shall analyse the training requirements for all the employees and initiate a

training program to demonstrate that all persons employed, including subcontractors, are suitably qualified, competent and fit. This will include:

- i) Detailed Job descriptions for all personnel, to include their specific SHE responsibilities
- ii) Specification of qualifications, competency and training requirements for all personnel
- iii) Assessment and recording of training needs for all personnel, including subcontractors' employees in the workforce, vendor representatives and site visitors
- iv) A system for assessing new hirers e.g. previous training
- v) A means of confirming that the system is effective
- vi) A matrix and schedule of training requirements, covering general, task-specific and SHE-related training, showing the training frequency and interval between refresher courses
- vii) Timely, competent delivery of training courses

5.2 The contractor shall arrange behavioural-based training programmes for all the executives to identify recognise and eliminate unsafe act and unsafe conditions.

The refresher-training programme to all employees shall be conducted once in six months.

5.3 Toolbox talk as given in the Employer's Project SHE manual shall be conducted to all high-risk workmen every day.

5.4 On-the spot practical skill development training on height safety including scaffold safety, Fire safety, welding safety, electrical safety etc shall also be conducted to all foremen/workmen who are associated to the concerned jobs.

5.6 Contractor shall provide training on Safety, Health & Environment to all its workers/staff/employees/subcontractors of at least 36 hrs at the time of induction.

5.7 All the above listed training programmes as well as mentioned in appendix – 7 shall be organised by the contractor only after taking approval from the Employer for the training faculty / organisation, content and durations.

6.0 Safety and Health Inspection

The contractor shall evolve and administer a system of conducting Safety and Health inspections and other risk management analysis on a periodical basis.

The purpose of SHE inspection is to identify any variation in site activities and operations, machineries, plant and equipment and processes against the Safety and Health Plan and its supplementary procedures and programs.

The contractor shall prepare all required safety inspection checklist for all activity operations and equipment. Checklists will be prepared based on the Indian standards, rules and regulations and Employer's requirements.

All inspection records and reports will be properly kept and filed for record purpose. Inspection reports of Planned General Inspection and Routine Inspection will be used for discussion during Safety Meetings.

7.0 Safety & health Communication

The contractor shall take every effort to communicate the Safety and Occupational health management measures through posters campaigns / billboards / banners / glow signs being displayed around the work places as part of the effort to raise safety awareness amongst the work force. Posters should be in Hindi, English and other suitable language deemed appropriate.

8.0 Accident reporting and investigation

8.1 Reporting to Employer

All accidents and dangerous occurrences shall immediately be informed verbally to the Employer. Reports of all accidents (fatal / injury) and dangerous occurrences shall also be sent within 24 hours as per format provided.

No accident / dangerous occurrences is exempted from reporting to the Employer. Any wilful delay in verbal and written reporting to the Employer shall be penalised as per relevant clause.

8.2 Reporting to Govt. organisations

In addition to the above verbal and written reporting to the Employer, a notice of any accident to a worker at the building or work place that causes loss of life; or disables a worker from working for a period of 48 hours or more immediately following the accident;

shall forthwith be sent by telegram, telephone, fax, email or similar other means including special messenger within 24 hours in case of fatal accidents and 72 hours in case of other accidents, to:

- a. the Regional Labour Commissioner (central), wherein the contractor has registered the firm/work
- b. the board with which the worker involved was registered as a beneficiary;
- c. Director General and
- d. the next of kin or other relative of the worker involved in the accident;

8.3 Further, notice of accident shall be sent in respect of an accident which causes loss of life; or disables the injured worker from work for more than 10 days to:

- a. the officer-in-charge of the nearest police station;
- b. the District Magistrate or, if the District Magistrate by order so desires, to
- c. the Sub-Divisional Magistrate

8.4 Where any accident causing disablement that subsequently results in death, notice in writing of such death, shall be sent to the authorities mentioned above within 24 hrs and not later than 72 hours of such death.

8.5 Reporting of dangerous occurrences:

All classes of dangerous occurrences shall be reported to the Inspector having jurisdiction, whether or not any disablement or death caused to the worker. The same shall also be immediately reported to the employer.

8.6 Accident investigation

Investigations should be conducted in an open and positive atmosphere that encourages the witnesses to talk freely. The primary objective is to ascertain the facts with a view to prevent future and possibly more serious occurrences

8.7 Employers' independent incident investigation

In case of fatal / dangerous occurrence the Employer shall also conduct independent investigation. Contractor and his staff shall extend necessary co-operation and testify about the accident.

9.0 Emergency preparedness plan

- i) The Contractor shall prepare an Emergency Response Plan for all work sites. The Emergency Response Plan shall detail the Contractor's procedures, including detailed communications arrangements, for dealing with all emergencies that could affect the Site. This include where applicable, injury, sickness, evacuation, fire, chemical spillage, severe weather and rescue etc.
- ii) Arrangements shall be made for emergency medical treatment and evacuation of the victim in the event of an accident or dangerous incident occurring, the chain of command and the responsible persons of the contractor with their telephone numbers and addresses for quick communication shall be adequately publicized and conspicuously displayed in the workplace.
- iii) Contractors shall require to tie-up with the hospitals and fire stations located in the neighbourhood for attending to the casualties promptly and emergency vehicle kept on standby duty during the working hours for the purpose.
- iv) Contractor shall conduct an onsite emergency mock drill for all his workers and his subcontractor's workers.

10.0 Contractor Safety & Health Policy & Plan

As per Section 39 of BOCW Act, Contractor shall formulate a Safety & Health Policy and shall be displayed it at conspicuous places at work sites in Hindi and a local language understood by the majority of workers

Contractor shall submit a detailed and comprehensive contract specific Safety & Health Plan. The Safety & Health plan shall include detailed policies, procedures and regulations which, when implemented, will ensure compliances of the contract provisions.

11.0 Contractor Safety & Health organisation

- i) Contractor shall appoint the required Safety personnel and establish safety organisation based upon the site condition. At least one safety personnel shall be deployed per site per shift.
- ii) The conduct and functioning of the contractor Safety personnel shall be monitored by the Employer. The contractor shall ensure that all personnel are competent to perform the job assigned to them. In the event that the Contractor is unable to demonstrate the competency of any person whose activities can directly impact on the Works' SHE performance, the Employer shall remove that person from the site without any procedural formalities.

- iii) No Safety personnel shall be required or permitted to do any work which is unconnected to, inconsistent with or detrimental to the performance of the Safety duties.

PART – II: SAFETY

12.0 Housekeeping

- i) Contractor shall understand and accept that improper is the primary hazard in any work place and ensure that a high degree of is always maintained. Indeed “Cleanliness is indeed next to Godliness”
- ii) General shall be carried out by the contractor and ensured at all times at Work place, Labour Camp, Stores, Offices and toilets/urinals.
- iii) All stairways, passageways and gangways shall be maintained without any blockages or obstructions. All emergency exits passageways, exits fire doors, break-glass alarm points, fire fighting equipment, first aid stations, and other emergency stations shall be kept clean, unobstructed and in good working order.
- iv) Water logging on work places shall not be allowed.
- v) Proper and safe stacking of material needs to be ensured.
- vi) All wooden scrap, empty wooden cable drums and other combustible packing materials, shall be removed from work place to identified location(s).
- vii) Some DO's and DONT's for Working Staff

DO'S AND DON'TS FOR STAFF

DO'S

- a In case of fire / anything unusual on electric traction equipment or wires, inform the station controller/Manager.
- b Extinguish fire by special extinguishers (carbon tetrachloride or carbon dioxide type, if available.
- c Ensure no water jet to be directed at the fire under any circumstances.
- d Before taking up the work on a line running parallel to 25 KV AC lines, the line shall be earthed on both sides. Ensure that the distance between the two earths used for protection does not exceed 1km.
- e Keep clear of the track and avoid contact with the rails when electric train within 250m.
- f Special care should be taken to carry long pipes, poles or ladders so that it should not come in contact with or within 2 meters of live OHE.
- g Cleaning work other than that of surface (i.e. of beam, pillars etc.) should be done during block period only.
- h Whenever washing or cleaning using water jets is done, take appropriate power block.
- i Cases of electric shock arising out of contact with 25 KV A.C traction equipment shall be reported immediately to TPC.

DON'Ts

- a. Do not approach within 2 meters of any traction wires or live equipment.
- b. Do not work on or near traction wires or any live equipment unless they are made dead, earthed and shut down notices/ permit to work obtained.
- c. Do not enter any switching station or remote control centre unless specially permitted.
- d. Do not touch a person in contact with live traction wires. Remove body only after power supply is switched off & earthed.
- e. Do not touch any traction wire hanging from the mast or fallen on the ground and do not allow anyone else to touch it.
- f. Cleaning work with conducting materials like Aluminium/ Steel rods should be avoided at all times when power block is not availed.
- g. Do not lift or raise your tools towards traction wires.
- h. Do not damage the plinth continuity, connection to BEC, OPC and handrail continuity.

- i. Do not use steel tape or metallic tape or tape with woven metal reinforcement in electrified area.
 - j. Do not forget to give artificial respiration to the victim as per the prescribed procedure laid down at shock treatment charts.
 - k. Metallic telescopic rods are prohibited for use in the CoR station.
 - l. Do not throw garbage in haste. Dispose it properly at designated place.
 - m. Do not dispose dirty water in to
- 13.0 Working at Height
- The contractor shall ensure that work at height is
- a. properly planned for any emergencies and rescue
 - b. appropriately supervised; and
 - c. Carried out in a manner, which is reasonably practicable safe.
- 13.1 Falling objects
- i) The contractor shall, where necessary to prevent injury to any person, take suitable and sufficient steps to prevent, so far as is reasonably practicable, the fall of any material or object.
 - ii) Every contractor shall take suitable and sufficient steps to prevent any person being struck by any falling material or object which is liable to cause personal injury.
 - iii) The contractor shall ensure that no material or object is thrown or tipped from height in circumstances where it is liable to cause injury to any person.
 - iv) Every contractor shall ensure that, every workplace where chances of fall of material or other may exist shall be properly barricaded or provided with suitable safety net as well as fall catch arrestors etc.
- 13.2 Danger areas
- Every contractor shall ensure that
- i) where a workplace contains an area in which, owing to the nature of the work, there is a risk of any person at work,
 - a) falling a distance; or
 - b) being struck by a falling object,
 Which is liable to cause personal injury, the workplace is so far as is reasonably practicable equipped with devices preventing unauthorised persons from entering such area; and such area is clearly indicated.
- 13.3 Inspection of work equipment
- The contractor shall ensure that, all work equipment used at work place and exposed to conditions causing deterioration shall be inspected regularly and recorded.
- 13.4 Requirements for all Working Platforms
- Every contractor shall ensure that whenever necessary proper, safe and adequate to the working requirement, working platforms is provided
- 13.5 Every contractor shall ensure that fall protection measures are provided for safety means of access as well as safe working.
- 13.6 Requirements for Ladders
- Every contractor shall ensure that a ladder is used for work at height only if a risk assessment has demonstrated that the use of more suitable work equipment is not justified because of the low risk.
- i) Only metal ladders shall be allowed. Bamboo ladders are prohibited.
 - ii) Any surface upon which a ladder rests shall be stable, firm, of sufficient strength and of suitable composition safely to support the ladder so that its rungs or steps remain horizontal, and any loading intended to be placed on it.
 - iii) A ladder shall be so positioned as to ensure its stability during use

- iv) A portable ladder shall be prevented from slipping during use by -
 - a. securing the stiles at or near their upper or lower ends;
 - b. an effective anti-slip or other effective stability device; or
 - c. any other arrangement of equivalent effectiveness.
- v) A ladder used for access shall be long enough to protrude sufficiently above the place of landing to which it provides access, unless other measures have been taken to ensure a firm handhold.
- vi) No interlocking or extension ladder shall be used unless its sections are prevented from moving relative to each other while in use.
- vii) A mobile ladder shall be prevented from moving before it is stepped on.
- viii) Where a ladder or run of ladders raises a vertical distance of 9 metres or more above its base, there shall, where reasonably practicable, be provided at suitable intervals sufficient safe landing areas or rest platforms.
- ix) Every ladder shall be used in such a way that
 - (a) a secure handhold and secure support are always available to the user; and
 - (b) the user can maintain a safe handhold when carrying a load unless, in the case of a step ladder, the maintenance of a handhold is not practicable when a load is carried, and a risk assessment has demonstrated that the use of a stepladder is justified because of
 - (i) the low risk; and
 - (ii) the short duration of use.

13.7 Fragile surfaces

The contractor shall ensure that no person at work passes across or near, or working on, from or near, a fragile surface where it is reasonably practicable to carry out work safely and under appropriate ergonomic conditions without his doing so.

Where it is not reasonably practicable to carry out work safely and under appropriate ergonomic conditions without passing across or near, or working on, from or near, a fragile surface, every contractor shall,

- (a) ensure, so far as is reasonably practicable, that suitable and sufficient platforms, coverings, guard rails or similar means of support or protection are provided and used so that any foreseeable loading is supported by such supports or borne by such protection;
- (b) where a risk of a person at work falling remains despite the measures taken under the preceding provisions of this regulation, take suitable and sufficient measures to minimise the distances and consequences of his fall.

Where any person at work may pass across or near, or work on, from or near, a fragile surface, every contractor shall ensure that

- (a) prominent warning notices are so far as is reasonably practicable affixed at the approach to the place where the fragile surface is situated; or
- (b) where that is not reasonably practicable, such persons are made aware of it by other means.

14.0 Slipping, Tripping, Cutting and Falling Hazards

- i) All places should be free from dust, debris or similar materials. Sharp projections or any protruding nails or similar objects shall be suitably guarded or shall even be avoided to make the place safe to work.

- ii) Open side or opening where worker, equipment, vehicle or lifting appliance may fall at a building or outside shall be guarded suitably except in places of free access by reasons of nature of work.
- iii) Suitable safety net shall be provided at places of material / man falling is possible in accordance with national standards.

15.0 Lifting Appliances and Gear

- i) The contractor shall ensure that a valid certificate of fitness is available for all lifting appliances, if used.
- ii) The laminated photocopies of fitness certificate issued by competent person, the operators' photo, manufacturer's load chart and competency certificate shall always be either kept in the operator cabin or pasted on the visible surface of the lifting appliances.
- iii) All lifting appliances and loose gears shall be clearly marked for its safe working load and identification by stamping or other suitable means.

15.1 Test and periodical examination of lifting appliances and gears

- i) All lifting appliances including all parts and gears thereof, whether fixed or movable shall be thoroughly tested and examined by a competent person once at least in every six months or after it has undergone any alterations or repairs liable to affect its strength or stability.
- ii) All alarms and signals like automatic safe load indicators (SLI), boom angle indicators, boom extension indicators, over lift boom alarm, swing alarm, hydraulic safety valves, mechanical radius indicators, load moment indicators etc. shall be periodically examined and maintained always in working condition

15.2 Automatic safe load indicators

As stipulated in Rule 57 of DBOCW Rules, every lifting appliances and gears like cranes, hydras etc, if so constructed that the safe working load may be varied by raising or lowering of the jib or otherwise shall be attached with an automatic indicator of safe working loads approved by Bureau of Indian standards/ International certifying bodies which gives a warning to the operator and arrests further movements of the lifting parts.

15.3 Mandatory rigging requirements

- i) Rigging shall be done under experienced and qualified rigger only.
- ii) The primary requirement in rigging shall be to assess the weight of load before attempting any lift.
- iii) All hooks shall be fitted with Master Rings having certificate of fitness from the competent person, so that the hooks are subjected to balance vertical loading only.
- iv) Only four legged slings shall be allowed which includes master link (ring), intermediate master link (ring) if necessary, chain / wire rope sling, sling hook or other terminal fitting.
- v) Hand spliced slings up to 32mm diameter shall not be used at site for any lifting purpose.
- vi) No load shall be slewed over public areas without stopping the pedestrians and road traffic first.
- vii) Requirements of outriggers
 - a) All outriggers shall be fully extended and at all tyres are clear of the ground
 - b) Heavy duty blocking having large bearing area shall be necessary to prevent sinking of floats
- viii) All loads shall have tag-lines attached in order to ensure that the load can be controlled at all times.
- ix) No close working to any live overhead power line is permitted without the operation of a strict Permit to Work.
- x) Minimum lighting is to be ensured at all lifting operations.

16.0 Work place machinery

Every work place equipment shall be in sound mechanical working condition and certified by either competent person under Factories Act or manufacturers' warranty in case of brand new equipment's or authorized persons / firms approved by Employer before induction to any work place.

All Vehicles shall be fitted with audible reverse alarms and maintained in good working condition. Reversing shall be done only when there is adequate rear view visibility or under the directions of a banks man.

17.0 Machine and General Area Guarding

The contractor shall ensure at the work place all dangerous and moving parts of machines are securely fenced. The fencing of dangerous part of machinery is not removed while such machinery is in motion or in use.

18.0 Manual lifting and carrying of excessive weight

The contractor shall ensure at his work place no staff, lifts by hand or carries overhead or over his back or shoulders any material, article, tool or appliances exceeding in weight as said below, unless aided by another staff or device.

Person	Maximum weight in kg.
Adult man	55
Adult woman	30

19.0 Work place Electricity

- i) Every contractor shall ensure safe usage practices of power supply as well as safe electrical equipment's fitted with protection devices.
- ii) Cables shall be selected after full consideration of the condition to which they shall be exposed and the duties for which they are required.
- iii) The contractor shall ensure plugs, socket-outlets, and couplers available in the work place as per IS/applicable standard.
- iv) Every joint and connection in a system shall be mechanically and electrically suitable for use to prevent danger. Proper cable connectors as per standards shall only be used to connect cables.
- v) No loose connections or tapped joints shall be allowed anywhere in the work place, office area, stores and other areas.
- vi) The main contractor shall take consideration, the requirements of the sub / petty contractors' electric power supply and arrive at the capacity of main source of power supply from diesel generators.
- vii) As the sub / petty contractors' small capacity generators create more noise and safety hazard, no small capacity diesel generators shall be allowed for whatsoever the type of job to be executed under this contract.
- viii) The contractor shall also submit electrical single line diagram, schematic diagram and the details of the equipment for all temporary electrical installation and these diagrams together with the temporary electrical equipment shall be submitted to the Employer's for necessary approval. Failure to do so shall invite penalty as per relevant clause.

The contractor shall provide sufficient ELCBs (maintain sensitivity 30 mA) / RCCBs for all the equipment's (including Potable equipment's), electrical switchboards, distribution panels etc. to prevent electrical shocks to the workers.

20.0 Work on or near live conductors

- i) For working near OHE & other Electrical installation, the rules/measures provided in the Safety Circular – 2 of O&M wing shall be followed.

- ii) No person shall be engaged in any work activity on or so near any live conductor (other than one suitably covered with insulating material so as to prevent danger) that danger may arise unless-
 - a) Suitable precautions (including where necessary the provision of suitable protective equipment) are taken to prevent injury.

20.1 Inspection and Maintenance

All electrical equipment should be permanently numbered and a record kept of the date of issue, date of last inspection and recommended inspection period.

21.0 Hand Tools and Power Tools

- i) The contractor is wholly responsible for the safe condition of plant and equipment used by his employees and that of his sub-contractors.
- ii) Use of short / damaged hand tools shall be avoided and the contractor shall ensure all his hand tools used at his work place are safe to work with or stored and shall also train his employees (including his sub-contractors) for proper use thereby.
- iii) All hand tools and power tools shall be duly inspected before use for safe operation.
- iv) The contractor shall ensure that power tools (electric) are properly grounded or / and double insulated.

22.0 Fire prevention, protection and fighting system

- i) The contractor shall ensure that storage area is provided with fire extinguishing equipment sufficient to extinguish any small fire at work place.
- ii) Recharging of fire extinguishers and their proper maintenance should be ensured and as a minimum should meet Indian National Standards
- iii) Combustible scrap and other work place debris should be disposed off on a regular basis.

23.0 Corrosive substances

Corrosive substances including alkalis and acids shall be stored and used by a person dealing with such substances at a building / work place in a manner that it does not endanger the worker and suitable PPE shall be provided by the contractor to the worker during such handling and work. In case of spillage of such substances on worker, the contractor shall take immediate remedial measures.

24.0 Work Permit system

24.1 The Contractor shall develop a Work Permit system, which is a formal written system used to control certain types of work that are potentially hazardous.

A permit is needed when work place work can only be carried out if normal safeguards are dropped or when new hazards are introduced by the work. Examples of high-risk activities include but are not limited to:

- a. Entry into confined spaces
- b. Lifting/Lowering activity
- c. Excavation
- d. Work in close proximity to overhead power lines and telecommunication cables.
- e. Work with electrical equipment and operations closer to live power line
- f. Working on track & operation rooms

24.2 A Work Permit authorisation form shall be completed with the maximum duration period not exceeding one shift.

- 24.3 A copy of each Permit to Work shall be displayed, during its validity, in a conspicuous location in close proximity to the actual works location to which it applies.
- 25.0 Work to adjacent track
Whenever work is to be conducted in close proximity to the live track then the following measures shall need to be addressed:
- a. The rules/measures provided in the Safety Circular – 2 of O&M manual shall be followed.
 - b. No persons are allowed to work onto the track unless specific authority has been given by CoR/ RCIL. Adequate protection in accordance with the O&M requirements shall be followed.
 - c. All persons shall wear high visibility clothing at all times.
 - d. Any induction training requirements of the Track shall be strictly observed
- 26.0 Lighting
The contractor shall provide sufficient site lighting, of the right type and at the right place for it to be properly effective. Lighting ought not to introduce the risk of electric shock. Therefore, 230V supplies should be used for those fittings, which are robustly installed, and well out of reach e.g. flood lighting or high-pressure discharge lamps.
- 27.0 Welding, Gouging and Cutting
- i) Gas cylinders in use shall be kept upright on a custom-built stand or trolley fitted with a bracket to accommodate the hoses and equipment or otherwise secured. The metal cap shall be kept in place to protect the valve when the cylinder is not connected for use.
 - ii) Hose clamp or clip shall be used to connect hoses firmly in both sides of cylinders and torches.
 - iii) All gas cylinders shall be fixed with pressure regulator and dial gauges
 - iv) Non-return valve and Flashback arrester shall be fixed at both end of cylinder and torch.
 - v) Domestic LPG cylinders shall not be used for Gas welding and Cutting purpose.
 - vi) DCP or CO2 type Fire Extinguisher not less than 5 kg shall be fixed at or near to welding process zone in an easily accessible location.
 - vii) Use firewatchers if there is a possibility of ignition unobserved by the operator (e.g. on the other side of bulkheads).
 - viii) Oxygen cylinders and flammable gas cylinders shall be stored separately, at least 6.6 meters (20 feet) apart or separated by a fire proof, 1.6 meters (5 feet) high partition. Flammable substances shall not be stored within 50 feet of cylinder storage areas.
 - ix) Transformer used for electrical arc welding shall be fixed with Ammeter and Voltmeter and also fixed with separate main power switch.
 - x) Welding grounds and returns should be securely attached to the work by cable lugs, by clamps in the case of stranded conductors, or by bolts for strip conductors. The ground cable will not be attached to equipment or existing installations or apparatus.
 - xi) Use a low voltage open circuit relay device if welding with alternating current in constricted or damp places.
 - xii) Take precautions against the risk of increased fume hazards when welding with chrome containing fluxed consumables or high current metal inert gas (MIG) or tungsten inert gas (TIG) processes.
 - xiii) Avoid being in contact with water or wet floors when welding. Use duckboards or rubber protection.
 - xiv) All electrical installations shall meet the IS: 5571: 1997 and NFPA 70 for gas cylinder storage area and other hazardous areas.
 - xv) The current for Electric arc welding shall not exceed 300 A on a hand welding operation.

28.0 Demolition

- i) The Contractor shall ensure that all demolition works be carried out in a controlled manner under the management of experienced and competent supervision.
- ii) All glass or similar materials or articles in exterior openings are removed before commencing any demolition work and all water, steam, electric, gas and other similar supply lines are put-off and such lines so located or capped with substantial coverings so as to protect it from damage and to afford safety to the building workers and public..
- iii) No demolishing work be performed if the adjacent structure seems to be unsafe unless and until remedial measures like sheet piling, shoring, bracing or similar means be ensured for safety and stability for adjacent structure from collapsing.
- iv) Debris / bricks and other materials or articles shall be removed by means of chutes buckets or hoists through openings through floors or any other safe means
- v) No person other than building workers or other persons essential to the operation of demolition work shall be permitted to enter a zone of demolition and the area be provided with substantial barricades.

29.0 Excavation

- i) Where any site building worker engaged in excavation is exposed to hazard of falling or sliding material or article from any bank or side of such excavation which is more than one 1.5 m above his footing, such worker is protected by adequate piling and bracing against such bank or side.
- ii) Where banks of an excavation are undercut, adequate shoring is provided to support the material or article overhanging such bank.
- iii) Excavated material is not stored at least 0.65 m from the edge of an open excavation or trench and banks of such excavation or trench are stripped of loose rocks and the banks of such excavation or trench are stripped of loose rocks and other materials which may slide, roll or fall upon a site building worker working below such bank
- iv) Metal ladders and staircases or ramps are provided, as the case may be, for safe access to and egress from excavation where, the depth of such excavation exceeds 1.5 m and such ladders, staircases or ramps.

30.0 Personal Protective Equipment's (PPEs)

The contractor shall provide required PPEs to workmen to protect against safety and/or health hazards. Primarily PPEs are required for the following protection:

- A. Height Work
 - i. Safety Helmet
 - ii. Full body Safety harness
- B. Electrical Operation Room
 - i. Shoes with insulated sole/Rubber Gum boots
 - ii. Electrically insulated Gloves
- C. Chemical Handling
 - i. Eye protection i.e Safety goggles
 - ii. Chemical Gloves for hand protection

PART – III: OCCUPATIONAL HEALTH AND WELFARE

31.0 Physical fitness of workmen

The contractor shall ensure that his employees/workmen subject themselves to such medical examination as required under the law or under the contract provision and keep a record of the same.

The contractor shall not permit any employee/workmen to enter the work area under the influence of alcohol or any drugs.

32.0 Medical Facilities

32.1 Medical Examination

As per BOCW relevant rules, the contractor shall arrange a medical examination of all his employees including his sub-contractor employees employed before employing, after illness or injury, if it appears that the illness or injury might have affected his fitness and, thereafter, once in every two years up to the age of 40 and once in a year, thereafter.

32.2 Ambulance van

The contractor shall ensure that an arrangement is made with a nearby hospital for providing such ambulance van for transportation of serious cases of accident or sickness of workers to hospital promptly.

32.3 First-aid boxes

The contractor shall ensure at a work place one First-aid box provided and maintained for providing First-aid to the workers. Every First-aid box is distinctly marked “First-aid” and is equipped with the articles specified in BOCWR.

33.0 Welfare measures for workers

33.1 Toilets and Urinals

Generally facilities are available at Metro Station, Depots & other work places and maintained by agencies engaged by CoR. Contractors workers may utilised these facilities on payment basis

33.2 Drinking water

As per relevant section of BOCWA the contractor shall make in every work place, effective arrangements to provide sufficient supply of wholesome drinking water with minimum quantity of 5 litres per workman per day. Quality of the drinking water shall conform to the requirements of national standards on Public Health.

34.0 Noise

The Contractor shall take all appropriate measures to ensure that work carried out by the Contractor and by his sub-Contractors, whether on or off the Site, will not cause any unnecessary or excessive noise which may disturb the occupants of any nearby dwellings, schools, hospitals, or premises with similar sensitivity to noise.

Noise level reduction measures shall include the following:

- i) Contractor shall ensure that all powered mechanical equipment used in the works shall be effectively sound reduced using the most modern techniques available including but not limited to silencers and mufflers.
- ii) Contractor shall construct acoustic screens or enclosures around any parts of the works from which excessive noise may be generated.

Contractor shall ensure that noise generated by work carried out by the Contractor and his sub-Contractors during daytime and night time shall not exceed the maximum permissible noise limits

35.0 Illumination

Contractor shall take every effort to illuminate the work site as per the Employer's requirement. The contractor shall conduct a monthly illumination monitoring by lux meter for all the locations and the report shall be sent to the Employer

PART - IV: PENALTY AND AWARDS

36.0 Charges to be recovered from contractor for unsafe act or condition

36.1 CoR has built an image of safety conscious organisation meticulously over a long period of operation. Any reportable accident (fatality / injury) results in loss of life and/or property damage. These accidents not only result in loss of life but also damage the reputation of CoR. Most of the accidents are avoidable and caused preliminary due to contractors' negligence. Hence CoR shall recover the cost of damages from the contractors for every reportable incident (fatality / injury).

36.2 In addition sometimes our activities are exposed to public scrutiny as the work is executed on public places. Any unsafe act / unsafe condition observed by public further damage our reputation. Without limiting to the unsafe acts and or conditions, the Employer shall have the right to deduct charges for any other unsafe act and or condition depending upon the gravity of the situation on a case-to-case basis.

36.3 The following table indicates the Safety, Health and Environment violation (unsafe act / unsafe condition) and charges to be recovered from contractors.

S. No.	Topic	Unsafe Act/Unsafe Condition	Amount of Penalty
1.	SHE Policy & Plan	(i) SHE Plan a) Not as per Employer's content and coverage b) Delay in submission c) Not updated as per employer's instruction.	Rs.50,000/- per single violation, compounded to a maximum of Rs. 1,00,000/- at any single instance
2.	SHE Organisation	i) Not complying to the minimum manpower requirements as mentioned in Appendix – 6 ii) Not filling up the vacancies created due to SHE personnel leaving the contractor within 14 days iii) Disobedience/improper conduct of any SHE personnel	i) Rs. 50,000/- per month for first month and ii) Rs. 25,000/- per month for first month and Rs. 50,000/- for subsequent months iii)Rs.10,000 for first violation and Rs. 25,000 for subsequent violation
3.	SHE Training	i) Not complying to the requirement as mentioned in conditions of contract on SHE and project SHE manual with regard to: a. Induction training not given b. Supervisor/engineer/manager training not conducted as per clause 5.1 c. Tool-box talk not conducted as per clause 5.3 d. Skill development training not conducted as clause 5.6	For i (a) to (e) Rs. 25,000/- for first violation on and Rs. 50,000/- for subsequent violations

4.	Injury and incidence	<ul style="list-style-type: none"> i) Fatal accidents ii) Injury accidents iii) Abnormal delay in reporting accidents or wilful suppression of information about any accidents/dangerous occurrence as per clause 8.4 iv) Delay in informing about any accidents/dangerous incidents v) Non-compliance of the clause 8.4 	<ul style="list-style-type: none"> i. Rs. 2,00,000/- for first fatality and Rs. 5,00,000/- for every subsequent fatality ii. Rs. 1,00,000 for first grievously injured person and Rs. 2,00,000 for every subsequent grievously injured person (Grievous injury as defined by Workmen Compensation Act) iii. Rs. 50,000/- <p>For items iv) and v) Rs. 50,000/- for first violation and Rs. 1,00,000/- for subsequent violations</p>
5	Housekeeping	<ul style="list-style-type: none"> i) Surrounding areas of drinking water tanks/taps not hygienically cleaned/maintained ii) Office, stores, toilet/urinals not properly cleaned and maintained iii) Openings unprotected iv) Excavated earth not removed within a reasonable time v) Wooden scraps, empty wooden cable drums lying scattered vi) Water stagnation leading to mosquito breeding 	Rs. 5,000/- per single violation Compounded to a maximum of Rs. 25,000/- at any single instance
6	Working at Height/ Ladders and Scaffolds	<ul style="list-style-type: none"> i) Not using or anchoring Safety Belt ii) Not using Safety Net iii) Absence of life line or anchorage point to anchor safety belt iv) Non-compliance of clause 13.4 v) Using Bamboo ladders vi) Improper usage (less than 1 m extension above landing point, not maintaining 1:4ratio) vii) Aluminium ladders without base rubber bush viii) Usage of broken/weak ladders ix) Usage of re-bar welded ladders x) Improper guardrail, toe board, barriers and other means of collective protection xi) Improper working platform xii) Working at unprotected fragile surface xiii) Working at unprotected edges 	Rs. 5,000/- per single violation compounded to a maximum of Rs. 30,000/- at any single instance
7	Lifting appliance and gear	<ul style="list-style-type: none"> i) Non availability of fitness certificate as per clause 15.0 (i) ii) Documents not displayed on the machine or not available with the operator as per clause 15.0 (ii) iii) Maximum Safe Working Load not written on the machine as per clause 15.0 (iii) 	Rs. 25,000/- per single violation compounded to a maximum of Rs. 50,000/- at any single instance

		iv) Non-compliance of 15.1 (i) v) Non-compliance of 15.1 (ii) vi) Automatic safe load indicator not provided or not in working condition as per clause 15.1 (iii) vii) Non-compliance of any of the items mentioned regarding rigging requirements as per clause 15.3. viii) Failure to submit method statement in case of all critical lifting ix) Person riding on crane x) Absence of portable fire extinguisher in driver cabin xi) Fail to guard hoist platform xii) No fencing of hoist rope movement area xiii) Hoist platform not in the horizontal position	
8	Site Electrical safety	i) Non-compliance of clause 19.0 (iv), (v) ii) Exposed electric lines (fermentative damage) and circuits in the workplace iii) Inserting of bare wires into the socket iv) Improper grounding for the electrical appliances v) Electrical cables running on the ground	Rs. 5,000/- per single violation compounded to a maximum of Rs. 25,000/- at any single instance
9	Hand tools and Power tools	i) Non-compliance of clause 21.0	Rs. 5,000/- per single violation
10	Gas Cutting	i) Wrong colour coding of cylinder ii) Cylinders not stored in upright position iii) Flash back arrester, non- return valve and regulator not present or not in working condition iv) Fail to put cylinders in a cylinder trolley v) Damaged hose vi) Using domestic LPG cylinders vii) Fail to store cylinder 6.6. m away from fire prone materials viii) Fail to use hose clamps ix) Fire extinguisher not placed in the vicinity during operation	Rs. 5,000/- per single violation compounded to a maximum of Rs. 25,000/- at any single instance
12	Welding	i) Voltmeter and Ammeter not working ii) Improper grounding and return path iii) Damaged welding cable iv) Bare openings in the cable v) Non-availability of separate switch in the transformer vi) Non-availability of main switch control to switch off power to the welding unit vii) Usage of reinforcement rod as return conductor	Rs. 5,000/- per single violation compounded to a maximum of Rs. 25,000/- at any single instance

		viii) Damaged holder ix) Fire extinguisher not placed in the vicinity during operation	
13	PPE	i) Not having ii) Not wearing (or) using and kept it elsewhere iii) Using damaged one iv) Using wrong type v) Using wrong colour helmet or helmet without logo vi) Using for other operation (.e. Using safety helmet for storing materials or carrying water from one place to other) vii) Not conforming to BIS standard	From item i) to vi) Rs. 200 per single violation For item vii) Rs. 5,000/- for first violation and Rs. 10,000 for subsequent violations
14	Occupational Health	i) Fail to conduct Medical examination to workers ii) Workers not having ID card iii) Inadequate number of toilets iv) Toilets not cleaned properly v) Absence of water facilities for toilets and washing places vi) Absence of drinking water vii) Absence of first-aid person in work site viii) Absence or inadequacy of first-aid box ix) Misuse of first-aid box x) First-aid box not satisfy the minimum Indian standard xi) Smoking inside the construction site xii) Drink and drive or work xiii) Canteen not provided xiv) Food stuff not served on no loss no profit basis xv) Creche not provided, if required xvi) Fumigation/insecticides not sprayed to prevent Mosquito breeding	Rs. 5,000/- per single violation compounded to a maximum of Rs. 25,000/- at any single instance
15	Labour Welfare Measures	i) Non adherence of Labour welfare provisions of BOCWA ii) Fail to register establishment and display the registration certificate at workplace iii) Absence of workers register and records iv) Absence of muster roll and wages register v) Fail to display an abstract of BOCWA and BOCWR	Rs. 5,000/- per single violation compounded to a maximum of Rs. 25,000/- at any single instance

36.4. Without limiting to the unsafe acts and or conditions mentioned above in clause 36.3 the Employer shall have the right to deduct charges for any other unsafe act and or condition depending upon the gravity of the situation on a case-to-case basis. The charges shall be in comparison with that of the similar offence indicated in clause 36.3.

37.0 Stoppage of work

37.1 The Employer shall have the right to stop the work at his sole discretion, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and / or property, and / or equipment's at specific work place. In such cases, the contractor shall be informed in writing about the nature of hazards and possible injury / accidents.

37.2. The contractor shall not proceed with the work until he has complied with each direction to the satisfaction of Employer

37.3 The Contractor shall not be entitled for any damages / compensation for stoppage of work, due to safety reasons and the period of such stoppage of work shall not be taken as an extension of time for Completion of the Facilities and will not be the ground for waiver of levy of liquidated damages.

38.0 Awards

The following categories will be considered for awards as per the scheme in practice of Employer

- a. Zero fatality contracts
- b. 100% adherence to voluntary reporting of all accidents throughout the currency of contract
- c. Safest Contractor of the year.

40.0 Contracts costing below Rs. 50.00 lakh and of following nature with moderate safety hazard are exempted of clause no. 5.6, 5.7, 6, 7, 9 & 10.

- (i) Parking development
- (ii) Painting work at low level i.e. up to 3 M height
- (iii) Toilet renovation and improvement
- (iv) Renovation in interior of Station Building with height works up to 3 metre
- (v) Horticulture
- (vi) Cleaning of Track bed etc.
- (vii) Regarding applicability of this exemption clause, decision of Engineer shall be final and binding on Contractor

Topics for First day at work SHE orientation training of Workmen

1. Hazard Identification Procedure

Hazards on work place:

- Electricity
- Machinery
- Handling materials
- Work place
- Work at Height
- Fire

2. Personal Protective Equipment

- What is available?
- How to obtain it?
- Correct use and care.

3. Health

- Work place welfare facilities
- Potential health hazards
- First Aid/CPR

4. Duties of the contractor

- Brief outline of the responsibilities of the Contractor by law
- Details of Contractor's accident prevention policy
- Building and other construction worker Welfare Law

5. Employee's Duties

- Brief outline of responsibilities of employee under law
- Explanation of how new employees fit into the Contractor's plan for accident prevention. (induction and orientation).

ID CARD FORMAT**(85 mm x 55 mm)****Front Side of ID Card**

DELHI MRTS	
<div style="border: 1px solid black; padding: 5px; min-height: 40px;">Company Logo</div>	<div style="border: 1px solid black; padding: 5px; min-height: 40px;">Name & Address of Main/Sub/Labour</div>
<div style="border: 1px solid black; padding: 5px; min-height: 80px;"> Name: Designation: Blood Group: Valid Up to: </div>	<div style="border: 1px solid black; padding: 5px; min-height: 60px; text-align: center;">Photo</div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px; text-align: center;">Authorised Signatory</div>

Back Side of ID card

Employee Address: <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/>
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> 1. This card is the property of “xx” (Main/Sub/labour Contractor) and must be returned on demand and on transfer/cancellation of employment 2. A change will be leived for replacement of the card due to loss or theft 3. If found please return to </div> <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 0 auto; width: 60%;">Main Contractor Address</div>

SAFETY AND HEALTH POSTERS

Every contractor shall prepare a SHE Communication Plan as a part of work place specific SHE Plan and shall include the following minimum requirement of Posters / Signages / Video as applicable. In case readymade posters are available in any of the category from safety related organisations they may procure the same and display it. In case the same is not available then the contractors' shall make necessary arrangements to get the posters designed and printed on their own. The List of Posters:

1. Mandatory PPE Usage
2. Working at Height
3. Work place Electricity
4. Crane Safety & Lifting operation
5. Excavation
6. Confined Space
7. Hand tools & Power tools
8. Material Handling
9. First Aid

DELHI METRO RAIL CoRPORATION	SAMPLE SAFETY FORM REFERENCE :	SAF – 001
ACCIDENT/DANGEROUS OCCURRENCE REPORT FORM		Accident No.
Name of Contractor:		Contract No.
Instructions : <ol style="list-style-type: none"> 1. A copy of this form shall be completed for every Accident and Dangerous Occurrence. 2. It must be signed by a senior work place management representative. 3. A copy shall be sent to the Employer's Representative within 24 hours of the Accident. 		
Part A : Details of Injured Person		
<i>Name :</i> _____ <i>Date of Birth :</i> _____ <i>Male</i> <input type="checkbox"/> <i>Female</i> <input type="checkbox"/>		
<i>Address :</i> _____ _____		
<i>Job Title :</i> _____ <i>Name of Employer :</i> _____		
Part B : Details of The Accident		
<i>Date :</i> _____ <i>Time :</i> _____ <i>Location :</i> _____		
➤ <i>Describe the task the injured person was doing at the time of the accident:</i>		
➤ <i>Describe in details how the accident happened (Attach, sketch, plan photographs etc.):</i>		
➤ <i>Was any plant or machinery involved yes/no : if yes give details:</i>		
➤ <i>Name of any Witnesses:</i>		
Part C : Details of the Inquiry		
<i>What was the Injury ? (eg. Fracture, Lacerations)</i>		
 <i>What part of the body was injured?</i>		
<i>Was the injury : Fatal</i> <input type="checkbox"/> <i>Major Injury</i> <input type="checkbox"/> <i>Minor Injury</i> <input type="checkbox"/>		
<i>Was the injured person sent to ; First Aid</i> <input type="checkbox"/> <i>Doctor</i> <input type="checkbox"/> <i>Hospital</i> <input type="checkbox"/> <i>Home</i> <input type="checkbox"/>		
Part D : Certification		
<i>I have checked the above information and can confirm that it is a true record of the accident</i>		
<i>Signed</i> _____ <i>Contracotr Workplace Incharge</i> _____ <i>Date</i> _____ _____		

FORMAT of SITE SAFETY & HEALTH PLAN

SITE SHE PLAN	
Contract No	
Contractor Name	
Project Name	
1	Project Highlights <ul style="list-style-type: none"> i. Title of the content ii. Contractor Number iii. Brief scope of work iv. Location map/ key plan v. Period of the project
2	SHE Policy
3	Site Organisation Chart Chart indicating reporting of SHE personnel
4	Roles & Responsibility Individual responsibility of the <ul style="list-style-type: none"> i. Construction Manager ii. Construction Supervisors iii. SHE In charge iv. Site Engineers v. First Line Supervisors vi. Sub-contractors
5	SHE Training
6	Subcontractor Evaluation, Selection and Control
7	Accident Investigation And Reporting Procedures
8	Occupational Health Measures
9	Labour Welfare Measures
10	Risk assessment and mitigation procedures
11	Safe Work Procedures <ul style="list-style-type: none"> i. Work at Height ii. Structural Steel Erection iii. Floor, Wall Openings and Stairways iv. Welding, Cutting and Bracing v. Lifting appliances vi. Work Permit Systems vii. Electrical Equipment's viii. Mechanical Equipment's ix. Excavation x. Fire Prevention xi. Hazardous Chemicals and Solvents xii. Ionising Radiation xiii. Lighting xiv. Abrasive Blasting
12	Work Permit System
13	List of standard job specific PPEs to be used in the site
14	Maintenance of Regime for construction Equipment and Machinery
15	Traffic management
16	Housekeeping
17	Environmental Management
18	Emergency Management
19	Visitors and Security arrangement

MINIMUM MANPOWER REQUIREMENTS OF SHE ORGANIZATION BASED ON CONTRACT VALUE

Awarded Contract value	Safety Manager	Safety Steward
Upto 1 crore	-	01 *
More than 1 crore	01	01 *

Note 1: Qualification for Safety Manager: Adequate, qualified and trained Safety manager with required support staff to be deployed at each worksite at each shift. He shall be science graduate or have 3 year diploma course in Engineering. He shall also have one year diploma in industrial safety.

Note 2: **Qualification for Safety Steward:** Adequate, qualified and trained Safety steward shall be deployed at each worksite at each shift. He shall be possessing senior secondary school certification as well as minimum 6 months certificate course in industrial safety.

OR

Senior secondary passed candidate having minimum 48 hrs of Safety and Health training can be deployed as safety supervisor/steward

*** Contractor shall deploy one Safety Steward per site during work.**

TENTATIVE TOPICS FOR SAFETY AND HELATH TRAINING
(Minimum – 36 hrs training)

General Safety:

1. Safety management Principles	-----	1 hr
2. Project Safety Manual & Plan	-----	1 hr
3. Accident Prevention Technique	-----	1 hr
4. Risk Assessment/HIRA	-----	1 hr
5. CoR Condition of Contract on Safety, Health	----	1 hr
6. Safety Inspections/Audits	-----	1 hr
7. Labour Welfare Measures	-----	1 hr
8. Accident Reporting, Investigation & Analysis	----	1 hr
9. Housekeeping	-----	1 hr
10. Plant & machinery	-----	1 hr

Safety at Site:

1. Safety during Excavation	-----	2 hrs
2. Safety during confined space entry	-----	1 hr
3. Safety in ladder use	-----	2 hrs
4. Safety during work at height	-----	2 hrs
5. Safety during welding and cutting operation	-----	2 hrs
6. Safety during lifting operation	-----	1 hr
7. Crane safety	-----	2 hrs
8. Fire Safety	-----	2 hrs
9. Safety during cutting/grinding	-----	1 hr
10. Electrical safety	-----	2 hrs
11. Storage & Handling of Material	-----	1 hr
12. Safety during steel erection	-----	1 hr
13. Hand tools & Power tools safety	-----	1 hr
14. Safety during masonry work	-----	2 hrs
15. Safety during formwork/scaffolding	-----	2 hrs
16. First Aid & PPE	-----	2 hrs

NOTE: Contractor to develop a SHE training module covering relevant topic with proposed duration for each topic to achieve the target of minimum 36 hrs for RCIL/ CoR approval before undertaking the training.

Price BID

	RailTel Corporation of India Ltd., 6th Floor, Block III, Delhi IT Park, Shastri Park, New Delhi-110053 P:011-22105993, 34
Price BID Format	

EOI No. - RailTel/EOI/NR/BA/21-22/Business Delivery/RO/CoR-Delhi

Name of work: Supply and Installation of Smart Solutions Equipment in CoR- Delhi

Name of the Bidder/ Bidding Firm/ Company :						
<u>PRICE SCHEDULE</u> (This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)						
NUMBER #	TEXT #	NUMBER	TEXT #	NUMBER #	NUMBER #	TEXT #
Sl. No.	Item Description	Amount in Rs. P	Excess /Less	Percent age In Figures To be entered by the Bidder (%)	AMOUNT in Rs. P	AMOUNT In Words
1	2	6	9	13	53	55
1	Total of Schedule- A (SITC)	Rs. 2,90,30,974.38	Less(-)			
2	Total of Schedule- B (DLP)	Rs. 7,84,118.85	Less(-)			
3	Total of Schedule- C (CAMC)	Rs. 18,19,155.73	Less(-)			
Total in Figures		Rs. 3,16,34,248.96				

Schedule Of Requirement

S.No.	Description	UNIT	Q ty	Unit Price	Total Price	GS T Rat e	GST	Amount with Tax
Schedule A: SITC (Supply, Installation, Testing and Commissioning)								
Location I: Tele Presence Room (Block-A)								
Display System								
1	All in One multimedia digital podium, 21" or better, with Touch Screen Monitor, Mike, Inbuilt PC, Light, Security Lock System, Easy Transportation with Caster Wheel, Gooseneck Microphone, Reading Space & Laptop Connectivity ports.	Nos	1	1,77,465.26	1,77,465.26	18%	31943.75	209409.00
2	Document Ceiling Camera with 16x optical zoom and 12x digital zoom or better	Nos	1	2,01,127.29	2,01,127.29	18%	36202.91	237330.21
3	Active LED Video wall of space size 12 X 6.5 sqfts, 1.6 mm Pixel Pitch or better.	Nos	1	54,50,733.52	54,50,733.52	28%	1526205.39	6976938.91
4	65" 4K UHD Display with 500 nits brightness, 24x7 Operational with Mounting arrangements	Nos	1	1,11,080.11	1,11,080.11	28%	31102.43	142182.54
5	55" 4k UHD Display with 350 nits brightness, 24x7 Operational with Mounting arrangements	Nos	3	78,873.45	2,36,620.34	28%	66253.70	302874.04
6	15" or better touchscreen laptop with latest windows configurations.	Nos	1	98,591.81	98,591.81	18%	17746.53	116338.34
	Total Display I							79,85,073.03
Video Conferencing System								
7	Video Conferencing solution with 3 cameras, 12x Optical Zoom and 12x digital zoom or better for the AV-to-USB Bridging Solution, Distribute video via the LAN / HDMI anywhere it is needed, Motorized Pan, Tilt and Zoom (PTZ), Auto Exposure, Auto Focus and Auto White Balance, including all accessories or hardware required for distribution.	Nos	1	24,31,931.31	24,31,931.31	18%	437747.64	2869678.95

7.1	HDMI extender for cameras	Nos	3	75,556.82	2,26,670.46	18%	40800.68	267471.14
	Total VCS							31,37,150.09
Switching System								
8	Wallplate alongwith cable cubby with 1 x HDMI input, 1 x USB-C and 1 x LAN Port input patch cord with Cables for Table & Podium or as per requirement.	Nos	6	1,05,140.94	6,30,845.61	18%	113552.21	744397.82
9	4K 8X8 HDMI Matrix Switcher or as per requirement.	Nos	1	14,67,474.68	14,67,474.68	18%	264145.44	1731620.12
10	HDMI Transmitter as per requirement.	Nos	4	32,850.79	1,31,403.16	18%	23652.57	155055.73
11	HDMI Reciever cum Scaler solution as per requirement.	Nos	4	42,706.03	1,70,824.11	18%	30748.34	201572.45
12	Wireless Presentation System, share from laptop, tablet or smartphone, Central management	Nos	1	1,40,973.14	1,40,973.14	18%	25375.17	166348.31
	Total Switching System I							29,98,994.44
Audio/Sound System								
13	2-Channel 800W Class D Power Amplifier delivering 400W per channel at 70 V, 2, 4, 8 and 16 ohms	Nos	4	93,687.20	3,74,748.78	18%	67454.78	442203.57
14	Compact Full Range 4" Ceiling Speaker with 40 W RMS power or better	Nos	16	13,044.35	2,08,709.66	18%	37567.74	246277.40
15	Column Speakers Passive Two Way Multiple Driver Column Array Full Range Loudspeaker Drivers: Min 7 nos. or better	Nos	2	31,786.00	63,572.00	18%	11442.96	75014.96
16	Digital Signal Processor	Nos	1	1,75,365.91	1,75,365.91	18%	31565.86	206931.77
17	Digital Audio Conference Control Unit, should be able to operate minimum 100 conferencing inputs	Nos	1	1,34,873.60	1,34,873.60	18%	24277.25	159150.84
18	Flush Mount Digital Discussion Conference unit	Nos	53	21,032.92	11,14,744.73	18%	200654.05	1315398.78
19	Power Supply unit for Conference system.	Nos	1	32,863.94	32,863.94	18%	5915.51	38779.45
20	Handheld wireless microphone system	Nos	1	31,954.26	31,954.26	18%	5751.77	37706.03
21	Lapel wireless microphone system	Nos	1	44,810.63	44,810.63	18%	8065.91	52876.55

	Total Audio System I							25,74,339.35
Control Systems								
22	Control Processor	Nos	1	1,33,528.80	1,33,528.80	18%	24035.18	157563.99
23	Wireless 10" FHD Display Touch Panel	Nos	1	32,863.94	32,863.94	18%	5915.51	38779.45
24	Lighting Control Wall-mount	Nos	2	3,28,639.37	6,57,278.73	18%	118310.17	775588.91
25	Network switch as per requirement	Nos	1	19,718.36	19,718.36	18%	3549.31	23267.67
26	Wireless router as per requirement	Nos	1	10,516.46	10,516.46	18%	1892.96	12409.42
27	Room Scheduling System with hallway sign indicator	Nos	1	1,03,850.04	1,03,850.04	18%	18693.01	122543.05
	Total Control System I							11,30,152.48
Cable Connectors & Accessories								
28	Point wiring of electrical sockets under the table at each sitting location.	Nos	53	2,734.28	1,44,916.82	18%	26085.03	171001.84
29	Rack 32U or as per requirement	Nos	1	40,751.28	40,751.28	18%	7335.23	48086.51
30	Cable, Connectors & Accessories	Lot	1	2,45,877.46	2,45,877.46	18%	44257.94	290135.40
	Total Cabling I							5,09,223.75
Total (I)								1,83,34,933.13
Location II: Meeting Room (Block A)								
Display System								
1	Ultrashort throw interactive full HD projector with brightness 3,600 lumens or more	Nos	1	4,60,095.11	4,60,095.11	28%	128826.63	588921.75
2	Ceramic whiteboard as projector screen with minimum reflection smooth surface of size 8.8 X 5 sqfts.	Nos	1	52,582.30	52,582.30	18%	9464.81	62047.11
3	15" or better Interactive pen computer	Nos	1	2,30,047.56	2,30,047.56	18%	41408.56	271456.12
	Total Display II							9,22,424.97
Switching System								

4	Wallplate alongwith cable cubby with 1 x HDMI input, 1 x USB-C and 1 x LAN Port input patch cord with Cables for Table or as per requirement.	Nos	3	66,088.06	1,98,264.19	18%	35687.55	233951.74
5	HDMI Matrix Switcher as per requirement.	Nos	1	4,99,531.84	4,99,531.84	18%	89915.73	589447.57
6	Scaler solution as per requirement.	Nos	1	76,244.33	76,244.33	18%	13723.98	89968.31
7	Wireless Presentation System, Share from laptop, tablet or smartphone, Central management	Nos	1	1,40,973.14	1,40,973.14	18%	25375.17	166348.31
	Total Switching System II							10,79,715.93
Audio/Sound System								
8	Dual Channel Commercial Class D Amplifier with Energy Star Certification delivering 2 x 120 W	Nos	1	43,893.07	43,893.07	18%	7900.75	51793.83
9	Compact Full Range 4" Ceiling Speaker with 40 W RMS power or better	Nos	6	13,044.35	78,266.12	18%	14087.90	92354.02
10	Rack Mountable 18 Channel Mic/Line mixer.	Nos	1	31,185.25	31,185.25	18%	5613.34	36798.59
11	Digital Audio Conference Control Unit	Nos	1	1,75,365.91	1,75,365.91	18%	31565.86	206931.77
12	Cardioid Condenser Boundary Microphone with Mute Switch and LED Indicator	Nos	13	21,946.54	2,85,304.98	18%	51354.90	336659.88
	Total Audio System II							7,24,538.09
Control Systems								
13	Network switch as per requirement	Nos	1	19,718.36	19,718.36	18%	3549.31	23267.67
	Total Control System II							23,267.67
Cable Connectors & Accessories								
14	Point wiring of electrical sockets under the table at each sitting location.	Nos	21	2,734.28	57,419.87	18%	10335.58	67755.45
15	Rack 15U or as per requirement	Nos	1	7,887.34	7,887.34	18%	1419.72	9307.07
16	Cable Connectors & Accessories	Lot	1	1,70,892.47	1,70,892.47	18%	30760.64	201653.12
	Total Cabling II							2,78,715.63

Total (II)								30,28,66 2.29
Location III: Library (Block-A)								
Display System								
1	All in one Touch PC alongwith headphones, with 21" display or better and latest Window OS alongwith headphones	Nos	14	1,24,882.96	17,48,361.43	18%	314705.06	2063066.49
2	Flat Touch Kiosk with 21" or better Anti glare Touch display, builtin PC, window 10 Pro Builtin Book Software, Builtin Speaker.	Nos	2	98,591.81	1,97,183.62	18%	35493.05	232676.67
	Total Display III							22,95,74 3.16
Audio/Sound System								
3	Rack Mountable 6 Channel Mic/Line mixer.	Nos	1	25,377.53	25,377.53	18%	4567.96	29945.49
4	Dual Channel Commercial Class D Amplifier with Energy Star Certification delivering 2 x 120 W	Nos	2	43,893.07	87,786.15	18%	15801.51	103587.65
5	Compact Full Range 4" Ceiling Speaker with 40 W RMS power or better	Nos	8	13,044.35	1,04,354.83	18%	18783.87	123138.70
6	Gooseneck Microphone with ON / OFF Switch at Reception Table	Nos	2	17,914.79	35,829.58	18%	6449.32	42278.90
7	Library Management Software with 2 Barcode Scanners and door sensors	Nos	1	4,60,095.11	4,60,095.11	18%	82817.12	542912.23
	Total Audio System III							8,41,862. 98
Cable Connectors & Accessories								
8	Network switch as per requirement	Nos	1	15,774.69	15,774.69	18%	2839.44	18614.13
9	Point wiring of electrical sockets under the table for PCs	Nos	14	2,734.28	38,279.91	18%	6890.38	45170.30
10	Rack 6U or as per requirement	Nos	1	7,887.34	7,887.34	18%	1419.72	9307.07
11	Cable, Connectors & Accessories	lot	1	47,324.07	47,324.07	18%	8518.33	55842.40
	Total Cabling III							1,28,933. 90
Total (III)								32,66,54 0.04

Location IV: MDP Room (Block-B)								
Display System								
1	Digital podium with PC compatible configuration for anotation fuctionality and 21.5" touch screen,usb Ports with all cable & Connectors required, should be able to communicate with intractive smart display	Nos	1	1,77,465.26	1,77,465.26	18%	31943.75	209409.00
	Total Display IV							2,09,409.00
Audio/Sound System								
2	Cardioid Condenser wireless clip on microphone	Nos	1	44,810.63	44,810.63	18%	8065.91	52876.55
3	Premium 12-Input 2-Bus Mixer	Nos	1	25,377.53	25,377.53	18%	4567.96	29945.49
4	Compact Full Range 4" Ceiling Speaker	Nos	6	13,044.35	78,266.12	18%	14087.90	92354.02
5	Dual Channel Commercial Class D Amplifier	Nos	1	43,893.07	43,893.07	18%	7900.75	51793.83
6	Cable Connectors & Accessories	lot	1	47,324.07	47,324.07	18%	8518.33	55842.40
	Total Audio System IV							2,82,812.29
Total (IV)								4,92,221.29
Location V: EDP Room (Block-B)								
Display System								
1	Ultrashort throw full HD interactive projector with brightness 2,500 lumens or more	Nos	2	3,94,367.24	7,88,734.48	28%	220845.65	1009580.13
2	Ceramic whiteboard as projector screen with minimum reflection smooth surface of size 8.8 X 5 sqfts.	Nos	2	52,582.30	1,05,164.60	18%	18929.63	124094.22
3	Professional quality Lectern with integrated audio receiver and speaker system, including gooseneck mic. Can be integrated with clip mic, external speaker, audio from shared laptop or cpu.	Nos	2	59,155.09	1,18,310.17	18%	21295.83	139606.00
4	Cardioid Condenser wireless clip on microphone	Nos	2	44,810.63	89,621.27	18%	16131.83	105753.10
5	Audio mixer as per requirement.	Nos	2	25,388.05	50,776.10	18%	9139.70	59915.79

6	Cable Connectors & Accessories	lot	1	21,032.92	21,032.92	18%	3785.93	24818.84
Total (V)								14,63,768.10
Location VI: Auditorium (Block-B)								
Display System								
1	Ultrashort throw full HD interactive projector with brightness 3,600 lumens or more	Nos	1	4,60,095.11	4,60,095.11	28%	128826.63	588921.75
2	Ceramic whiteboard as projector screen with minimum reflection smooth surface of size 12.4 X 7 sqfts.	Nos	1	52,582.30	52,582.30	18%	9464.81	62047.11
3	Digital podium with PC compatible configuration for anotation fuctionality and 21.5" touch screen,usb Ports with all cable & Connectors required, 02 Nos gooseneck microphone, Integrated keyboard and touchpad mouse on board.	Nos	1	1,94,554.51	1,94,554.51	18%	35019.81	229574.32
4	Cable, Connectors & Accessories	lot	1	21,032.92	21,032.92	18%	3785.93	24818.84
Total (VI)								9,05,362.02
VII: Miscellaneous Items (Block-B)								
1	All-in-One Portable 200-Watt Speaker with Wireless Microphone, Remote Control via Smart Phone, Bluetooth Audio Streaming and Battery Operation	Nos	3	44,810.63	1,34,431.90	18%	24197.74	158629.65
2	Wireless Presentation System, share from laptop, tablet or smartphone, central management.	Nos	2	1,51,042.65	3,02,085.31	18%	54375.36	356460.66
3	Cardioid Condenser wireless clip on microphone	Nos	3	44,810.63	1,34,431.90	18%	24197.74	158629.65
4	55" diagonal interactive display, 530nits brightness, can be used as portrait & landscape mode, annotation with mounting Display cart	Nos	1	5,91,550.86	5,91,550.86	28%	165634.24	757185.10
5	Portable Document Camera,supports both wired and wireless transmission.	Nos	1	92,019.02	92,019.02	18%	16563.42	108582.45
Total (VII)								15,39,487.50

Total of Schedule A: SITC							2,90,30,974.38
Schedule B: DLP (Defect Liability Period)							
1	DLP for two years	1	6,64,507.50	6,64,507.50	18%	119611.35	784118.85
Total of Schedule B: DLP (Defect Liability Period)							7,84,118.85
Schedule C: CAMC (Comprehensive Annual Maintenance Contract)							
1	Comprehensive AMC for five years from the date of completion of DLP	1	15,41,657.40	15,41,657.40	18%	277498.33	1819155.73
Total of Schedule C: CAMC (Comprehensive Annual Maintenance Contract)						18,19,155 73	
Grand Total of Schedule A, B & C						3,16,34,248.96	

Make & Model Details - Itemwise

S.No.	Description	UNIT	Qty.	Make	Model
Schedule A: SITC (Supply, Installation, Testing and Commissioning)					
Location I: Tele Presence Room (Block-A)					
Display System					
1	All in One multimedia digital podium, 21" or better, with Touch Screen Monitor, Mike, Inbuilt PC, Light, Security Lock System, Easy Transportation with Caster Wheel, Gooseneck Microphone, Reading Space & Laptop Connectivity ports.	Nos	1	UNI/Equivalent	UNI/Equivalent
2	Document Ceiling Camera with 16x optical zoom and 12x digital zoom or better	Nos	1	Lumens/Equivalent	Lumens/Equivalent
3	Active LED Video wall of space size 12 X 6.5 sqfts, 1.6 mm Pixel Pitch or better.	Nos	1	ZONALED	ZONALED
4	65" 4K UHD Display with 500 nits brightness, 24x7 Operational with Mounting arrangements	Nos	1	LGE/Equivalent	LGE/Equivalent
5	55" 4k UHD Display with 350 nits brightness, 24x7 Operational with Mounting arrangements	Nos	3	LGE/Equivalent	LGE/Equivalent
6	15" or better touchscreen laptop with latest windows configurations.	Nos	1	Dell/HP/Equivalent	Dell/HP/Equivalent
Video Conferencing System					
7	Video Conferencing solution with 3 cameras, 12x Optical Zoom and 12x digital zoom or better for the AV-to-USB Bridging Solution, Distribute video via the LAN / HDMI anywhere it is needed, Motorized Pan, Tilt and Zoom (PTZ), Auto Exposure, Auto Focus and Auto White Balance, including all accessories or hardware required for distribution.	Nos	1	Cisco	Codec Pro
7.1	HDMI extender for cameras	Nos	3	Haman-AMX	DXL-TX-4K60 & DXL-RX-4K60
Switching System					
8	Wallplate alongwith cable cubby with 1 x HDMI input, 1 x USB-C and 1 x LAN Port input patch cord with Cables for Table & Podium or as per requirement.	Nos	6	Haman-AMX	CTP-1301
9	4K 8X8 HDMI Matrix Switcher or as per requirement.	Nos	1	Haman-AMX	DGX-1600 ENC + DGX-I-HDMI-4K60 (#1 Nos.) + DGX-I-DXL-4K60 (#1 Nos.) + DGX-O-HDMI-4K60 + DGX-O-DXL-4K60 (#1 Nos.) + DGX800/1600-ASB
10	HDMI Transmitter as per requirement.	Nos	4	Haman-AMX	DXL-TX-4K60
11	HDMI Reciever cum Scaler solution as per requirement.	Nos	4	Haman-AMX	DX-RX-4K60
12	Wireless Presentation System, share from laptop, tablet or smartphone, Central management	Nos	1	Haman-AMX	ACR-5100
Audio/Sound System					
13	2-Channel 800W Class D Power Amplifier delivering 400W per channel at 70 V, 2, 4, 8 and 16 ohms	Nos	4	Harman-Crown	CDi2 600

S.No.	Description	UNIT	Qty.	Make	Model
14	Compact Full Range 4" Ceiling Speaker with 40 W RMS power or better	Nos	16	Harman-JBL	Control 26C/T
15	Column Speakers Passive Two Way Multiple Driver Column Array Full Range Loudspeaker Drivers: Min 7 nos. or better	Nos	2	Harman-JBL	CBT50LA-1
16	Digital Signal Processor	Nos	1	Harman-BSS	BLU101
17	Digital Audio Conference Control Unit, should be able to operate minimum 100 conferencing inputs	Nos	1	BXB/Equivalent	BXB/Equivalent
18	Flush Mount Digital Discussion Conference unit	Nos	53	BXB/Equivalent	BXB/Equivalent
19	Power Supply unit for Conference system.	Nos	1	BXB/Equivalent	BXB/Equivalent
20	Handheld wireless microphone system	Nos	1	Harman-AKG	WMS 470 D5 Set
21	Lapel wireless microphone system	Nos	1	Harman-AKG	WMS 470 PT Set
Control Systems					
22	Control Processor	Nos	1	Harman-AMX	NX1200 + PSR5.4
23	Wireless 10" FHD Display Touch Panel	Nos	1	Standard	
24	Lighting Control Wall-mount	Nos	2	Lutron/Equivalent	Lutron/Equivalent
25	Network switch as per requirement	Nos	1	Cisco/Equivalent	
26	Wireless router as per requirement	Nos	1	Standard	
27	Room Scheduling System with hallway sign indicator	Nos	1	Harman-AMX	MD-702 + PS-PoE-AF-TC
Cable Connectors & Accessories					
28	Point wiring of electrical sockets under the table at each sitting location.	Nos	53	Standard	
29	Rack 32U or as per requirement	Nos	1	Standard	
30	Cable, Connectors & Accessories	Lot	1	Standard	
Location II: Meeting Room (Block A)					
Display System					
1	Ultrashort throw interactive full HD projector with brightness 3,600 lumens or more	Nos	1	Epson/Equivalent	
2	Ceramic whiteboard as projector screen with minimum reflection smooth surface of size 8.8 X 5 sqfts.	Nos	1	Standard	
3	15" or better Interactive pen computer	Nos	1	WACOM/Equivalent	
Switching System					
4	Wallplate alongwith cable cubby with 1 x HDMI input, 1 x USB-C and 1 x LAN Port input patch cord with Cables for Table or as per requirement.	Nos	3	Harman-AMX	CTP-1301
5	HDMI Matrix Switcher as per requirement.	Nos	1	Harman-AMX	DVX-2264-4K + VPX-1401
6	Scaler solution as per requirement.	Nos	1	Harman-AMX	DX-RX-4K60
7	Wireless Presentation System, Share from laptop, tablet or smartphone, Central management	Nos	1	Harman-AMX	ACR-5100
Audio/Sound System					

S.No.	Description	UNIT	Qty.	Make	Model
8	Dual Channel Commercial Class D Amplifier with Energy Star Certification delivering 2 x 120 W	Nos	1	Harman-JBL	CSA2120Z
9	Compact Full Range 4" Ceiling Speaker with 40 W RMS power or better	Nos	6	Harman-JBL	Control 26C/T
10	Rack Mountable 18 Channel Mic/Line mixer.	Nos	1	Harman-Soundcraft	Ui16
11	Digital Audio Conference Control Unit	Nos	1	Harman-BSS	BLU101
12	Cardioid Condenser Boundary Microphone with Mute Switch and LED Indicator	Nos	13	Harman-AKG	PCC130SW
Control Systems					
13	Network switch as per requirement	Nos	1	Cisco/Equivalent	
Cable Connectors & Accessories					
14	Point wiring of electrical sockets under the table at each sitting location.	Nos	21	Standard	
15	Rack 15U or as per requirement	Nos	1	Standard	
16	Cable Connectors & Accessories	Lot	1	Standard	
Location III: Library (Block-A)					
Display System					
1	All in one Touch PC alongwith headphones, with 21" display or better and latest Window OS alongwith headphones	Nos	14	Dell/HP/Equivalent	
2	Flat Touch Kiosk with 21" or better Anti glare Touch display, builtin PC, window 10 Pro Builtin Book Software, Builtin Speaker.	Nos	2	Standard	
Audio/Sound System					
3	Rack Mountable 6 Channel Mic/Line mixer.	Nos	1	Harman-BSS	BLU101
4	Dual Channel Commercial Class D Amplifier with Energy Star Certification delivering 2 x 120 W	Nos	2	Harman-JBL	CSA2120Z
5	Compact Full Range 4" Ceiling Speaker with 40 W RMS power or better	Nos	8	Harman-JBL	Control 26C/T
6	Gooseneck Microphone with ON / OFF Switch at Reception Table	Nos	2	Harman-AKG	CGN521STS
7	Library Management Software with 2 Barcode Scanners and door sensors	Nos	1	Standard	
Cable Connectors & Accessories					
8	Network switch as per requirement	Nos	1	Cisco/Equivalent	
9	Point wiring of electrical sockets under the table for PCs	Nos	14	Standard	
10	Rack 6U or as per requirement	Nos	1	Standard	
11	Cable, Connectors & Accessories	lot	1	Standard	
Location IV: MDP Room (Block-B)					
Display System					
1	Digital podium with PC compatible configuration for a notation functionality and 21.5" touch screen,usb Ports with all cable & Connectors required, should be able to communicate with interactive smart display	Nos	1	UNI/Equivalent	
Audio/Sound System					
2	Cardioid Condenser wireless clip on microphone	Nos	1	Harman-AKG	WMS 470 PT Set

S.No.	Description	UNIT	Qty.	Make	Model
3	Premium 12-Input 2-Bus Mixer	Nos	1	Harman-Soundcraft	Signature 10
4	Compact Full Range 4" Ceiling Speaker	Nos	6	Harman-JBL	Control 26C/T
5	Dual Channel Commercial Class D Amplifier	Nos	1	Harman-JBL	CSA2120Z
6	Cable Connectors & Accessories	lot	1	Standard	
Location V: EDP Room (Block-B)					
Display System					
1	Ultrashort throw full HD interactive projector with brightness 2,500 lumens or more	Nos	2	Epson/Equivalent	
2	Ceramic whiteboard as projector screen with minimum reflection smooth surface of size 8.8 X 5 sqfts.	Nos	2	Standard	
3	Professional quality Lectern with integrated audio receiver and speaker system, including gooseneck mic. Can be integrated with clip mic, external speaker, audio from shared laptop or cpu.	Nos	2	UNI/Equivalent	
4	Cardioid Condenser wireless clip on microphone	Nos	2	Harman-AKG	WMS 470 PT Set
5	Audio mixer as per requirement.	Nos	2	Harman-Soundcraft	Signature 10
6	Cable Connectors & Accessories	lot	1	Standard	
Location VI: Auditorium (Block-B)					
Display System					
1	Ultrashort throw full HD interactive projector with brightness 3,600 lumens or more	Nos	1	Epson/Equivalent	
2	Ceramic whiteboard as projector screen with minimum reflection smooth surface of size 12.4 X 7 sqfts.	Nos	1	Standard	
3	Digital podium with PC compatible configuration for annotation functionality and 21.5" touch screen,usb Ports with all cable & Connectors required, 02 Nos gooseneck microphone, Integrated keyboard and touchpad mouse on board.	Nos	1	UNI/Equivalent	
4	Cable, Connectors & Accessories	lot	1	Standard	
VII: Miscellaneous Items (Block-B)					
1	All-in-One Portable 200-Watt Speaker with Wireless Microphone, Remote Control via Smart Phone, Bluetooth Audio Streaming and Battery Operation	Nos	3	Harman-JBL	EON ONE
2	Wireless Presentation System, share from laptop, tablet or smartphone, central management.	Nos	2	Harman-AMX	ACR-5100
3	Cardioid Condenser wireless clip on microphone	Nos	3	Harman-AKG	WMS 470 PT Set
4	55" diagonal interactive display, 530nits brightness, can be used as portrait & landscape mode, annotation with mounting Display cart	Nos	1	Samsung/Equivalent	
5	Portable Document Camera, supports both wired and wireless transmission.	Nos	1	Lumens/Equivalent	