

**RAILTEL CORPORATION OF INDIA LIMITED  
(A Govt. of India Undertaking)**

**OPEN TENDER DOCUMENT**

**FOR**

“Supply, Installation, testing & Commissioning of Audio Visual works of the proposed regional office and network operating center of Railtel Corporation of India Limited at 6<sup>th</sup> floor, Tower-3, Delhi Technology Park, Shastri Park, New Delhi-110053.”

**TENDER No. RailTel/OT/NR/AV-Shastri Park/16-17/09  
Dated:11.08.2016**

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# **RailTel Corporation of India Ltd.**

(A Government of India Undertaking)

**Northern Region**

No. RailTel/OT/NR/AV-Shastri Park/16-17/09

Dated:11.08.2016

## **OPEN TENDER NOTICE**

Executive Director, RailTel Corporation of India Limited, Northern Region, New Delhi, invites the sealed Open Tenders in “single packet” system from established contractors with proven experience for “Supply, Testing and Commissioning of AUDIOVISUAL WORKS OF THE PROPOSED REGIONAL OFFICE AND NETWORK OPERATING CENTRE OF RAILTEL CORPORATION OF INDIA LIMITED AT 6TH FLOOR, TOWER 3, DELHI TECHNOLOGY PARK, SHASHTRI PARK, NEW DELHI-110053” as per following details:

S.No.	Item	Description
a)	<b>Sale of Tender</b>	<b>02.09.2016 to 01.10.2016 (From 11:00 Hrs to 17:00 Hrs)</b>
b)	<b>Last date &amp; time of submission of tender:</b>	<b>Up to 15:00 hrs on 06.10.2016</b>
c)	<b>Date &amp; time of opening of tender:</b>	<b>At 15:30 hrs on 06.10.2016 (If the date of opening happens to be a holiday the tender will be opened on next working day at same time.)</b>
d)	<b>Approximate cost of Tender</b>	<b>Rs. 86,47,578/- (Including AMC)</b>
e)	<b>Earnest money:</b>	<b>Rs. 1,73,000/-</b>
f)	<b>Validity of offer</b>	<b>120 days</b>
g)	<b>Delivery period</b>	<b>90 days</b>
h)	<b>Cost of Tender Document:</b>	<b>Rs. 5,250/- (Five Thousand Two Hundred Fifty only) and Rs. 5,775/-(Five Thousand Seven Hundred Seventy Five only),if required by post including VAT, Surcharge and postage charges of Rs. 500/-</b>

Note: Tender Document may be obtained between 11:00 hrs to 17:00 hrs from 02.09.2016 to 01.10.2016 from the office of Executive Director, Northern Region, New Delhi by paying the cost of tender document through Bank Draft in favour of “RailTel Corporation of India Limited” payable at New Delhi. RCIL shall not be responsible for late receipt of tender documents for any postal delay, if required by post. The cost of the tender document is payable even if the tender document downloaded from Railtel’s website <http://railtelindia.com/>. Small scale Units registered with NSIC under single point registration scheme are exempted from cost of Tender Documents.

The Tender document is enclosed herewith. All pages of the original tender document should be duly signed by the tenderer and submitted along with offer.

For any clarifications the undersigned may be contacted.

**Addl.GM/DNM**  
**For Executive Director /Northern Region**

**OFFER LETTER**

To,  
RailTel Corporation of India Ltd.,  
Northern Region,  
6th floor, Block-III,  
Delhi IT Park, Shastri Park,  
Delhi-110053

I/We \_\_\_\_\_ have read the various conditions to tender attached here to and hereby agree to ABIDE BY THE SAID CONDITIONS. I/We also agree to keep this tender open for acceptance for a period of **120 days** from the date fixed for opening the same and in default thereof, I/We will be liable for forfeiture of my/our Earnest Money. I/We offer to do the supply of material as per Schedule of Requirement for **Tender no. RailTel/OT/NR/DLI -Shastri Park/16-17/09 Dated: 11.08.2016** for RailTel Corporation of India Limited at the rates quoted in the attached schedules and hereby binds myself/ourselves to supply the Equipment within **90 days** from the date of issue of Purchase Order. I/We also hereby agree to abide by the Various Conditions of Contract and to carry out the supply according to the Specifications for materials laid down by the Railtel for the present contract.

2. A sum of **Rs. 1, 73,000/- (Rupees One lacs Seventy Three Thousand only)** as on Account Payee Demand Draft No. ----- dt. -----Issued by ----- is herewith forwarded as “Earnest Money”. The full value of Earnest Money shall stand forfeited without prejudice to any other rights or remedies if, I/We withdraw or modify the offer within validity period or do not deposit the security deposit (Performance Bank Guarantee) within 15 days after receipt of orders to that effect.

SIGNATURE OF CONTRACTOR (S)

Date

SIGNATURE OF WITNESS

CONTRACTOR (S) ADDRESS

1.

2.

**BID DATA SHEET (BDS)**

<b>Reference Clause</b>	<b>Description</b>
<b>Name of the Work:</b> (Schedule of Requirements Chapter-II)	Supply, Installation, Testing and Commissioning of AUDIOVISUAL WORKS OF THE PROPOSED REGIONAL OFFICE AND NETWORK OPERATING CENTRE OF RAILTEL CORPORATION OF INDIA LIMITED AT 6TH FLOOR, TOWER 3, DELHI TECHNOLOGY PARK, SHASHTRI PARK, NEW DELHI-110053 <b>for RailTel.”</b>
<b>Last Date, Time and Venue of Submission of Tender:</b> (Tender Notice)	Venue: RailTel Corporation of India Ltd, Northern Region Office, 6 <sup>th</sup> Floor, Block-III, Delhi IT Park, Shastri Park, New Delhi -110053. Date: 06.10.2016 Time: 15:00 hours
<b>Date, Time and Venue of Opening of Tenders:</b> (Tender Notice)	Venue: Same as above Date: 06.10.2016 Time: 15:30 hours
<b>Completion Period of Work:</b> (ITT Clause 4,Chapter-III)	90 days from the date of issue of Purchase Order (PO).
<b>Tender Bid:</b> (ITT Clause 4,Chapter-III)	The tender bid shall be submitted in Single Sealed Packet system
<b>Authority and Address:</b> (ITT Clause 9,Chapter-III)	Executive Director, Northern Region, RailTel Corporation of India Ltd, 6 <sup>th</sup> Floor, Block-III, Delhi IT Park, Shastri Park, New Delhi-110 053.
<b>Earnest Money:</b> (ITT Clause 6,Chapter-III)	Rs.1,73,000/- (Rupees One Lac Seventy Three Thousand Only)
<b>Form of Earnest Money:</b>	Pay Orders/Demand Drafts shall be drawn in favour of RailTel Corporation of India Limited, payable at New Delhi having validity covering 90 days beyond the validity of offer.

<b>Unit Prices:</b> (ITT Clause 29,Chapter-III)	The unit rate and the prices shall be quoted by the bidder entirely in Indian Rupees (INR) only. Quoting in Foreign currency is not applicable to the present tender even for the imported items/ components of the Schedule of Requirements.
<b>Validity of offer:</b> (ITT Clause 1.4,Chapter-III)	120 days (One Hundred Twenty days) from the date of opening of tender
<b>Minimum Qualifying Criteria:</b> (ITT Clause 16.1,Chapter III)	<p><b>I. Technical:</b> The Tenderer should have completed from start to finish in the last three financial year (i. e. current year and three previous financial years) at least one Similar Single work for a minimum value not less than 35 % of the advised tender value of the work.</p> <p><b>II. Financial:</b> The Tenderer should have received during last three years total contract amount of minimum not less than 150% of the advertised tender value of the work.</p>
<b>Meaning of similar Works:</b> (ITT Clause 16)	For this tender “similar single work” means at least one complete work comprising of: Supply and Installation of Audio Visual works.
<b>Warranty :</b> (ITT Clause 2,Chapter III)	All materials supplied/work done by the contractor shall be guaranteed against the defects for a period of 12 months from the date of issue of Provisional Acceptance Certificate (PAC).
<b>Security Deposit/Contract Performance Guarantee:</b> (ITT Clause 6,Chapter-III)	Contract Performance Guarantee should be 10% of Contract value.





## Chapter II

# **SCHEDULE OF REQUIREMENTS** **(PRICE SCHEDULE)**

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**Schedule - 1**

S.No	Description	Brands	UoM	Qty	Unit Price (Rs)	Total Price (Rs)
<b>A: Audio System :- Supply , Installation, Testing &amp; Commissioning of</b>						
A-1	Ceiling speakers as per tender specification	JBL or QSC or Community	nos	6		
A-2	8 channel audio amplifier as per tender specification	Crown or QSC or Labgruppen	nos	1		
A-3	Digital Signal Processor as per tender specification	Biamp or BSS or Symetrix	nos	1		
A-4	Table boundary microphone as per tender specification	AudioTechnica or Clockaudio or Shure	nos	9		
<b>B: Video System :- Supply , Installation, Testing &amp; Commissioning of</b>						
B-1	110" diagonal fixed projection screen (Type - A) as per tender specification	Screen Innovations or DNP Supernova	Nos	1		
B-2	5000 lumens ceiling projector (Type - A) as per tender specification	Panasonic or NEC or Epson or Sony	Nos	1		
B-3	Video presentation switcher (Type - A) as per the tender specification	Extron or Crestron or AMX	Nos	1		
B-4	Video presentation switcher (Type - B) as per the tender specification	Extron or Crestron or AMX	Nos	1		
B-5	Video wall processor as per tender specification	Extron or RGB Spectrum or Datapath	Nos	2		
B-6	Signage media player as per tender specification	3M or Streme or Scala	Nos	1		
B-7	Signage Player license (included above in B-6) as per tender specification	3M or Streme or Scala	Nos	0		



B-8	Cable management box as per tender specification	Extron or Crestron or AMX	Nos	7		
B-9	AC power sockets (Multi-region) as per tender specification	Extron or Crestron or AMX	Nos	7		
B-10	46" inch professional monitor (Type - C) as per tender specification	Samsung or Panasonic or LG or Sony	Nos	12		
B-11	46" inch professional monitor (Type - F) as per tender specification	Samsung or Panasonic or LG or Sony	Nos	3		
B-12	Wall plate (Type - A) as per tender specification	Extron or Crestron or AMX	Nos	6		
<b>C: Control System :- Supply , Installation, Testing &amp; Commissioning of</b>						
C-1	Control processor as per tender specification	Crestron or Extron or AMX	Nos	1		
C-2	9.7" Touch panel as per tender specification	Apple	Nos	1		
C-3	Charging station as per the tender specification	iPort or Belkin	Nos	1		
C-4	Software application compatible with control processor for the touch panel as per tender specification	Crestron or Extron or AMX	nos	1		
C-5	Extension of IR from STB (behind the display) to front as per tender specification	Power Art or Xantech	nos	5		
<b>D: Installation Hardware :- Supply , Installation, Testing &amp; Commissioning of</b>						
D-1	AV equipment rack (Type - A) as per tender specification	Valrack or W&Q or APW President	nos	4		
D-2	3' HDMI cable as per tender specification	Crestron or Extron or AMX	nos	6		
D-3	6' HDMI cable as per tender specification	Crestron or Extron or AMX	nos	3		

D-4	10' HDMI cable as per tender specification	Crestron or Extron or AMX	nos	5		
D-5	15' HDMI cable as per tender specification	Crestron or Extron or AMX	nos	1		
D-6	25' HDMI cable as per tender specification	Crestron or Extron or AMX	nos	5		
D-7	50' HDMI cable as per tender specification	Crestron or Extron or AMX	nos	4		
D-8	6' HDMI cable for cable cubby as per tender specification	Crestron or Extron or AMX	nos	2		
D-9	25' DVI-D cable as per tender specification	Crestron or Extron or AMX	nos	12		
D-10	75' Long Dual link DVI-D cable as per tender specification	Crestron or Extron or AMX	nos	12		
D-11	6' HDMI to DVI cable as per tender specification	Crestron or Extron or AMX	nos	1		
D-12	6' VGA A as per tender specification	Crestron or Extron or AMX	nos	5		
D-13	10' VGA A as per tender specification	Crestron or Extron or AMX	nos	5		
D-14	25' VGA A cable as per tender specification	Crestron or Extron or AMX	nos	4		
D-15	50" VGA A cable as per tender specification	Crestron or Extron or AMX	nos	2		
D-16	DisplayPort male to DVI female active adapter as per tender specification	Crestron or Extron or AMX	nos	12		
D-17	DisplayPort male to HDMI female adapter Cable as per tender specification	Crestron or Extron or AMX	nos	1		
D-18	Bulk connectors & cables as per tender specification	Belden or Extron or AMX	LOT	1		

D-19	Custom camera mount as per tender specification	AVSI	nos	1		
D-20	Custom video wall (2x3) mount kit as per tender specification	AVSI	nos	2		
					<b>Total (Rs)</b>	



**Schedule – 2**

Supply, Installation, Testing & Commissioning of  
Audio Visual works at Railtel, New Delhi

(Schedule of rates and prices)

Bidder's Name and Address:

S. No.	Item Description	Type & Designation	Unit	Qty.	Unit Charges	Total Charges
(1)	(2)	(3)	(4)	(5)	(6)	(7)=(5)X(6)
1	<b>Onsite Manpower and Maintenance Support</b>		Year	1		
	Total Supervision Charges					

Note: The onsite Manpower and maintenance support include deputation of On-site Engineer at Site (RailTel) to extend day-to-day support in operation of the AV & IT Systems, Supplied, Installed and Commissioned under this package as per clause no 3 of Special Conditions of Contract chapter IV.

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**Schedule – 3****Supply, Installation, Testing & Commissioning of  
Audio Visual works at Railtel, New Delhi****(Schedule of rates and prices)****Bidder's Name and Address:**

1. Annual Maintenance cost(AMC) of Three years after end of Warranty period

Sr. No.	Description	Unit	Qty	% Incremental Annually	% Incremental for 3 Years
1	2	3	4	5	6
1	<b>Total Cost of AMC (in Rs) for 3 year</b> AMC charges after warranty period as percentage of overall cost of supply of equipments, mentioned in Schedule-I. Only incremental % cost in addition to 3.5 % mentioned in clause 3 of Chapter-III required to fulfill Long Term Maintenance support clause .(E.g. if the annual AMC cost is proposed to be 4% the quoted % should be (+) 0.5 % per annum column 5. For Three years it should separately be shown as (+) 1.5 % under column 6.	(+/-) % of Cost of supplies (year)	3		
	<b>Total</b>				

NOTE: a) The Annual Maintenance cost of Three years after end of Warranty period shall be taken for the purpose of tender evaluates.

b) In schedule -3, If however the tenderer feels that his AMC Cost is less than 3.5% per annum, he should give suitable discount in equipment pricing. For AMC he will be paid @ 3.5% per annum only. If the vendor quotes a higher base rate for AMC he will be paid at his quoted rate per annum and Three year differential cost shall be added to equipment cost for evaluation.

Supply, Installation, Testing & Commissioning of  
Audio Visual works at Railtel, New Delhi

**(GRAND SUMMARY)**

Bidder's Name and Address:

Sr. No.	Description	Total Price
1	TOTAL SCHEDULE NO. 1	
	Goods to be supplied	
2	TOTAL SCHEDULE NO. 2	
	Onsite Manpower and Maintenance Support	
3	TOTAL SCHEDULE NO. 3	
	Annual Maintenance cost of Three years after end of warranty period	
	GRAND TOTAL [1+2+3]	

**Total in Figures:**

**Total in Words:**

Note:

1. The material should be supplied as per Technical Specifications given in Chapter V.
2. Unit are quoted against SOR above should be FOR destination inclusive of all duties, taxes, insurance and freight etc.
3. It shall be responsibility of Tenderer to transport the material to site for installation & commissioning. Material not installed/ not to be installed need to be shipped to location as decided by **Executive Director** of the Northern Region.
4. Tenderer shall give break-up of quoted rates indicating separately the basic cost, ED, Sales tax, CST/VAT/LST, insurance charges, packing, forwarding & transportation charges (freight up to destination) including unloading at consignee premises and other levies, if any as per Annexure-A & Annexure-B.
5. Octroi/Entry tax will be paid extra as per actual on production of proof of payment/document. Please specify ST/CST/VAT % clearly.

**Signature of the Tenderer  
(With Seal)**



**Note: Octroi/Entry tax, if any, will be paid extra and reimbursed by RailTel on production of documentary evidence. Please specify ST/CST/VAT % clearly.**



## CHAPTER III

### **INSTRUCTIONS TO TENDERERS AND CONDITIONS OF TENDERING (ITT)**

#### **1. Offer letter and Validity of Offer**

- 1.1 The bidder shall complete the offer letter and the price schedule furnished in the bid documents, indicating the goods to be supplied, description of the goods, associated technical literature, quantity and prices etc. Bidders should enclose authorization letter from the respective OEM's/Authorized partners for video and audio system mentioned in SOR. The tenderer should indicate the brand name, type/model number of the material offered.
- 1.2 Bidder should enclose their credentials including supply, Installation & Commissioning of similar works to other government/PSUs/ Reputed Private organization as defined in tender notice & BID sheet.
- 1.3 The Excise registration is required to avail CENVAT Credit, tenderer should be registered with SSIC or Excise department. The documentary evidence for the same should be enclosed along with the offer. However, in absence of documentary evidence or certificate, the offer is summarily rejected.
- 1.4 The offer should remain valid for a period of 120 days from the date of opening.

#### **2. Warranty**

- 2.1 The materials are to be warranted for **12 months** from Date of Completion of work. The bidder shall warrant that stores to be supplied shall be new and free from all defects and faults in material, workmanship and manufacture and shall be of the highest grade and consistent with the established and generally accepted standards of materials of the type ordered and shall perform in full conformity with the specifications and drawings. The contractor shall be responsible for any defects that may develop under the conditions provided in tender and under proper use, arising from faulty materials, design or workmanship such as corrosion, inadequate quantity of material to meet requirements, inadequate protection, deficiencies in circuit design and / or otherwise and shall remedy such defects at his own cost when called upon to do so by the Purchaser who shall state in writing in what respect the stores are faulty. Railtel should be extended the benefits of software up-grades/patches by OEM for the system from time to time to improve performance.
- 2.2 If it becomes necessary for the contractor to replace or renew any defective portion/portions of the material under this clause, the provisions of the clause shall apply to the portion/portions of the material so replaced or renewed or until the end of the above mentioned period of twelve months, whichever may be later, if any defect is not remedied within a reasonable time, the Purchaser may proceed accordingly at the contractor's risk and expenses, but without prejudice to any rights which the Purchaser may have against the contractor in respect of such defects.

- 2.3 Replacement under warranty clause shall be made by the contractor free of all charges at site including freight, insurance and other incidental charges.
- 2.4 The authorized dealers shall submit along with authorization letter an undertaking from respective OEMs that the maintenance of equipment's during warranty and AMC period shall be support directly by the OEM.

### 3. **Annual Maintenance Support:**

The Bidder will submit a certificate from OEM towards maintenance support after Successful completion of the warranty obligations. The long term maintenance support shall be comprehensive and include all hardware and software of equipment etc. (on repair and return basis) supplied against this contract. RailTel should be extended the benefits of software upgrades made by OEM on the system from time to time to improve performance. During this period the terms and conditions as mentioned in Para 2 above shall be applicable.

Tenderer/OEM(through its Indian subsidiary), shall be paid @ 3.5% of supply cost per annum towards Long Term Maintenance Support after completion of warranty period, to undertake repairs/replacements of all type of module/ card/assembly/ subassembly and update/upgrade of software, which may fail in the network after the warranty. Only incremental cost in % over and above this, if perceived by the OEM and Tenderer may be indicated in Schedule of Requirement and shall be added towards evaluation of tender. If however the tenderer feels that his AMC Cost is less than 3.5% per annum, he should give suitable discount in equipment pricing. For AMC he will be paid @ 3.5% per annum only. If the vendor quotes a higher base rate for AMC he will be paid at his quoted rate per annum and Three year differential cost shall be added to equipment cost for evaluation. AMC would have to be valid for minimum period of 3 years after the warranty.

Separate agreement for AMC after warranty period shall be entered with the OEM/tenderer by Railtel. A fresh Bank Guarantee valid for three years for 10% of the Long Term maintenance Support cost of three years quoted by the tenderer, shall be required to be submitted by OEM/Tenderer for due fulfillment of long term maintenance support obligation.

Quarterly payment for AMC charge would be made by Railtel after successful completion of AMC services of that quarter and on the certificate furnished by concerned Railtel representative.

Note: The acceptance of the above clause is mandatory and specific acceptance from OEM is required to be enclosed. Any deviation / non acceptance will lead to rejection of the bid summarily.

### 4. **Completion Period :**

The complete work including supply, Installation &Commissioning is to be completed within **90 days** of issue of Work Order/LOA/PO.

## 5. Payment Terms

- 5.1 75% (Seventy five percent) of the value of equipment/ material supplied of each Consignment shall be paid on production of the following documents:
- On receipt of materials at site.
  - Original Inspection certificate issued by Inspecting Officer.
  - Challan
  - Invoice in duplicate.
  - Excise duty payment gate pass or Equivalent
  - Warranty/Guarantee Certificate from OEM
  - A certificate that the materials supplied are as per the contract and the amount claimed in the invoice is correct as per terms of the contract.
  - Undertaking against fall clause.
- 5.2 20 % (Twenty percent) value of the goods supplied shall be paid after the successful completion of installation & commissioning of whole system certified by RailTel Authorized Engineer and issue of PAC.
- 5.3 Balance payment of 5% of the contract value shall be made after satisfactory operation and maintenance of the work under the supervision of the contractor for a period of one year after commissioning and issue of Final Acceptance Certificate.
- 5.4 On expiry of the warranty period and issue of the certificate of final acceptance of the entire installations, the Performance Bank Guarantee shall be released to the Contractor after adjustment of any dues payable by the contractor.
- 5.5 Accounting/Bill passing unit for SOR for supplies is Northern Region Office. All Bills shall be submitted to the Addl.GM/DNM for certifying and verification and onwards submission to DGM/Finance of RailTel Northern Region Office for releasing the payment.
- 5.6 Quarterly payment for AMC Charges would be made by RailTel after successful completion of AMC Services of that quarter and on the certificate furnished by concerned RailTel Northern Region Office representative.
- Note: If the supplier fails to furnish necessary documents in respect of duties/taxes which are CENVATABLE, the amount of such duty/taxes will be deducted from the payment due to the firm.

## 6. Performance Bank Guarantee (PBG)

The supplier is required to submit a Performance Bank Guarantee (PBG) within 15 days of issue of Purchase Order for **10 % of the value of the order and valid for a period of 4 months beyond warranty period towards satisfactory performance of tender clauses.** The PBG shall be returned after successful completion of contractual obligation. The Performa for PBG is given in Chapter II. The PBG will be forfeited if the order is terminated by the Purchaser on account of Contractor. If the delivery period got extended, the PBG should also be extended appropriately.

## 7. Taxes & Duties

Please see clause 18.



## 8. **Liquidated Damages**

The timely delivery is the essence of this project, Liquidated damages will be applicable at the rate of half percent per week or part thereof for undelivered portion subject to a maximum of **10 % of the cost of supply**. RailTel will have the right to cancel the order, place order on alternative source at risk & cost of the supplier besides levying the L.D.

## 9. **Transportation**

The rates quoted should be F.O.R. destination. The supply has to be made at the following Location:

RailTel Corporation of India Ltd.,  
6th floor, Block-III, Delhi IT Park,  
Shastri Park, Delhi-110053.

## 9. **Statutory Deduction**

These will be made at source as per the rules prevalent in the area of work.

## 10. **Issue of Purchase Order/Award of Contract**

The purchaser shall consider placement of orders for commercial supplies on those bidder whose offers have been found technically and commercially acceptable. The rates quoted by the bidders shall be compared/evaluated item wise and the Purchase order for each item of the SOR shall be placed on lowest bidder for each item. The issue of purchase order shall constitute the award of contract on the bidder. The bidder shall within 15 days of issue of Purchase Order, give his acceptance along with Performance Bank Guarantee as per Clause 6.

## 11. **Purchaser's Right to Vary Quantities**

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

## 12. **Splitting of Order**

Deleted.

## 13. **Purchaser's Right to accept any Bid and to reject any or all Bids**

The purchaser reserves the right to accept or reject any Bid and to annul the bidding process and reject all bids, at any time prior to award of contract without any reason whatsoever and without thereby incurring any liability to the affected bidder or bidders on the grounds for the Purchaser's action.



**14. Issue of Advance Purchase Order - Deleted****15. Annulment of Award**

Failure of the successful bidder to comply with the requirement of various clauses of tender document shall constitute sufficient ground for the annulment of the award and forfeiture of EMD in which event the Purchaser may make the award to any other bidder at the discretion of the Purchaser or call for new offers/ bids.

**16. Eligibility Criteria****1) Technical:**

- i. The tenderer must have experience of execution of similar related works. He should have completed at least one work of value not less than 35% of the estimated cost of tender in the current and the last 3 financial years before the date of opening of this tender for Govt./Semi Govt/State Govt/Reputed Telcos. Documentary evidence for such experience must be furnished along with the offer.
- ii. Similar nature of work physically completed within the qualifying period, i.e. the last 3 financial year and current financial year (even though the work might have commenced before the qualifying period) shall only be considered in evaluating the eligibility criteria.
- iii. The total value of similar nature of work completed during the qualifying period and not the payments received within qualifying period alone, shall be considered.  
(For this tender “Similar single works” means one complete work involving: “supply and installation of Audio Visual works.”)

**2) Financial:**

- i. The tenderer should have received total contract amount of 150% of the estimated cost of tender in the last three financial years.
- ii. The tenderer should produce the Audited Profit/Loss account and Balance Sheet for the last 3 financial years.

**17. Earnest Money Deposit (EMD)**

Earnest Money as per Tender Notice shall be submitted in the form of Demand Draft from any Nationalized / Scheduled bank in India in favour of “RailTel Corporation of India Ltd. payable at New Delhi.” EMD may be forfeited if a bidder withdraws his offer or modifies the terms and conditions of the offer before validity period and in the case of a successful bidder, if the bidder fails to accept the Purchase Order and furnish performance security in accordance with clause 6 and 10.

**17.0 Tenders under noted categories of tenderers need not deposit Earnest money:-**

- a) Firm registered with NSIC up to the monetary limit of their registration for the items tendered.
- b) Deleted
- c) Deleted
- d) Deleted

**17.1** Earnest Money of the unsuccessful bidder will be discharged/returned as promptly as possible. No interest shall be payable on the EMD.

**17.2** The successful bidder's bid security will be discharged upon the bidder's acceptance of the purchase order satisfactorily and furnishing the performance bank guarantee in accordance with clause 6.

**17.3** Tenders not accompanied by Earnest money shall be summarily rejected.

**18. BID PRICES, Taxes & Duties**

**18.1** The bidder shall give the total composite price inclusive of all levies and taxes, packing, forwarding, freight and insurance etc. **The basic unit price and all other components of price need to be individually indicated against the goods it proposes to supply under the tender as per schedule given in Price Bid.** The price shall be firm in Indian Rupees and FOR Destination. No Foreign exchange will be made available by the purchaser.

**18.2** The breakup of price of each item of SOR in terms of basic Unit price, Excise duty, Sales Tax, Freight, Forwarding, Packing, Insurance and any other Levies/charges already paid or payable by the supplier shall also be quoted separately.

**18.3** The price quoted by the bidder shall remain fixed during the entire period of contract and shall not be subject to variation on any account.

**19. Clause wise Compliance**

Clause wise compliance statement of the Technical Specifications and Commercial Terms & Conditions shall be enclosed with the offer along with technical literature of the material and other documents in support of relevant clauses.

**20. Provenances of the material/equipment supplied:**

In order to enable the Purchaser to assess the provenances of the materials offered, the bidder shall provide documentary evidence regarding the materials being offered by him.

**21 Deleted**

## **22. Inspection**

- 22.1** Pre-shipment/pre-dispatch inspection shall be carried out at manufacturer's / supplier's works by authorized representative of RailTel's. The materials should be offered for inspection within 2 to 3 weeks of issue of Purchase Order. Traveling, lodging & boarding expenses of RailTel's representative and charges for 3<sup>rd</sup> party inspection, if any, shall be borne by RailTel but necessary facilities to carry out tests / witness inspection shall be provided by the manufacturer, free of cost.
- 22.2** Along with inspection call, the supplier / manufacturer shall submit details of test procedures, test programme, test parameters together with permitted values, etc. and their Quality Assurance Plan.
- 22.3** In case material fails during inspection, the same shall be replaced, free of cost, by manufacturer/supplier. In such a case, total cost of re-inspection including travel, lodging & boarding of the inspecting officials shall be to manufacturer's/supplier's account.

Nominated RailTel Engineer will issue inspection certificate of successfully completion of the test/inspection.

## **23. Force Majeure**

Force majeure shall mean -

- War, hostilities (whether war be declared or not), invasion, act of foreign enemies.
- Rebellion, revolution, insurrection or military or usurped power, or civil war.
- Ionizing radiation, or contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof.
- Presume waves caused by aircraft or other aerial devices traveling at sonic or supersonic speeds.
- Riot, commotion or disorder, unless solely restricted to employees of the Contractor or of his Subcontractors and arising from the conduct of the works.
- Loss or damage due to the use or occupation by the Employer of any section or part of the permanent works, except as may be provided for in the contract.
- Loss or damage due to the extent that it is due to the design of the works, other than any part of the design provided by the contractor or for which the contractor is responsible, and
- Any operation of the forces of nature against which an experienced contractor could not reasonably have been expected to take precautions.

## **24. Settlement of Disputes**

**24.1 For all commercial contracts with Private entities:**

In case of any dispute concerning this order both the supplier and RailTel shall try to settle the same amicably through mutual discussion/negotiations. 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 Managing Director, RailTel Corporation of India Limited.

**24.2 For all commercial contracts with Public Enterprises/ Govt. Departments:**

In the event of any dispute or difference relating to the interpretation and application of the provisions of the contracts, such dispute or difference shall be referred by either party for Arbitration to the sole Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprise. The Arbitration and Conciliation Act, 1996 shall not be applicable to arbitration under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute, provided, however, any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs, Ministry of Law & Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary/Additional Secretary, when so authorized by the Law Secretary, whose decision shall bind the Parties finally and conclusively. The Parties to the dispute will share equally the cost of arbitration as intimated by the Arbitrator

**25. Governing Laws**

This contract shall be interpreted in accordance with the laws of India. The courts at New Delhi shall have exclusive jurisdiction to entertain and try all matters arising out of this contract.

**26. Termination for Default**

The purchaser may without prejudice to any other remedy for breach of contract, by written notice of default, sent to the supplier, terminate this order/contract in whole or in part.

- a) If the supplier fails to deliver any or all of the goods within the time period(s) specified in the order/contract.
- b) If the supplier fails to perform any other obligation(s) under the contract; and
- c) If the supplier, in either of the above circumstance(s) does not remedy his failure within a period of 30 days (or such longer period as the Purchaser may authorize in writing) after receipt of the default notice from the purchaser.

In the event the purchaser terminates the order/contract in whole or in part, the Purchaser may proceed, upon such terms and in such manner as it deems appropriate, goods similar



to those undelivered and the supplier shall be liable to the Purchaser for any excess cost for such similar goods. However, the supplier shall continue performance of the order/contract to the extent not terminated.

**27. Termination for Insolvency**

The purchaser may at any time terminate the order/contract by giving written notice to the supplier, without compensation to the supplier, if the supplier becomes bankrupt or otherwise insolvent as declared by the competent court provided that such termination will not prejudice or affect to the Purchaser.

**28. Submission of Tender Bid (Single Packet System):**

**29.1** The envelope shall be addressed to the Purchaser at the following address:

**Executive Director /Northern Region,  
RailTel Corporation of India Ltd.,  
6th floor, Block-III,  
Delhi IT Park, Shastri Park,  
Delhi-110053.**

**29.2** Earnest Money Deposit (EMD) equal to **Rs. 1,73,500/- (Rupees One Lakh Seventy Three Thousand Five Hundred Only)** in the form of Account Payee Bank Draft in favour of RailTel Corporation of India Limited, payable at New Delhi, should be enclosed with the tender bid. The envelope containing the bid should be sealed by the personal seal of the bidder. **Each and every page of the bid should be numbered and signed by authorized representative of the firm.** Power of attorney in favour of the signatory duly authorizing the signatory shall be enclosed with the bid.

**29.3** The Tender document issued by RailTel should be signed on each page along with stamp of the company/Firm and should be submitted along with bid.

**29.4** The envelope shall bear **name of the supply, the tender no. and the words “DONOT OPEN BEFORE” (due date).**

**29.5** Bid should be delivered to the above address so as to reach up to **15:00 hours of 06.10.2016.** The bids shall be opened at **15:30** hours on the same day in the above office in the presence of those representative of the bidders who choose to be present. Bids received after due date and time shall be summarily rejected and shall not be opened. If the above said date happens to be a holiday the same shall be done on the next working day.

**30.0 UNIT PRICES**

**30.1** The prices quoted by the Tenderer shall include the prices of materials including all incidental charges for transport, loading/unloading and handling of materials, charging for arranging dispatch by rail/road direct from manufacturer's factory. The prices would also include charges towards completing all necessary formalities such as submission of forwarding notes, arranging placement of Wagon, Siding/shunt charges, banker's charges

for Bank guarantee, Indemnity Bonds inclusive of cost of Stamp etc. as applicable and also the charges, if any, levied by the RailTel.

- 30.2** The prices shall include all taxes, duties, Royalty and levies (including, Custom Duty with/without High Sea Sale etc.) applicable on this contract. Therefore, the bidder should quote their prices taking into account the rate of central sales tax/local sales tax/ VAT or any other tax livable on contract. The breakup of price of each item of SOR in terms of basic Unit price, Excise duty, Sales Tax, Freight, Custom Duty, Forwarding, Packing, Insurance and any other Levies/charges already paid or payable by the tenderer shall be quoted in the SOR. Any changes in statutory duties/taxes after opening of technical bid will be to RailTel's account within the contracted delivery period.

The Octroi/entry tax shall be paid extra as per actual on production of proof of payment/document.

- 30.3** The prices quoted by the tenderer shall include cost of Installation, commissioning and testing and all costs of Administration of Contract, Insurance Premium, Banker's charges for guarantees, custom handling, cost of storage in custom and other locations during execution of work, loading-unloading and handling of materials and road transport which the contractor may use for carriage of materials to his depot/ site of work and any other charges incurred towards delivery of the material at site. The prices shall include the cost of works and adjustments necessary to be done by the contractor during or after tests carried out by the purchaser.

- 30.4** The price to be quoted by the tenderers should take into account the credit availed on inputs under the CENVAT scheme. The tenderers should give a declaration that any set off in respect of duties on inputs as admissible under law is being totally and unconditionally passed on to the purchaser in the price quoted by him. The bidder in this regard shall submit the details of breakup of Excise Duty, Counter Vailing Duty, Service Tax and Surcharge & Cess on these, so that RailTel can avail the CENVAT credit benefit. The firm will furnish documentary evidence of such duties/taxes paid, to enable the purchaser to avail CENVAT credit.

- 30.5** The prices quoted in the contract shall be inclusive of all taxes i.e. custom duty, excise duty, local levies, sales tax levied by any statutory authority, VAT or any other tax. The tenderer will indicate the details of taxes included in the unit price. Offer received without specific details/ breakup of various taxes included in the unit prices are liable to be summarily rejected.

- 30.6** The purchaser shall make statutory deductions if required to do so. The deducted amount shall be remitted to the concerned authority and the purchaser shall in no way be responsible for any disputes between such authorities and the contractor in this regard.

- 30.7** All taxes, duties and levies arising out of the transaction between the contractor and his sub-contractor/supplier for this work will be included in the rates quoted by the contractor in the relevant Schedule.

- 30.8** Arrangement for all permits/licenses required for delivery of materials at site including Road Permits etc. will be the responsibility of contractor and the contractor will have to make his own arrangements. RailTel shall facilitate by way of authorization /request



letters whenever needed. Import license of RailTel can be used for materials procured under high sea sale.

**31.0 Fall Back Clause:**

The order/contract, if and when placed, will be subject to following Fall **Back Clause:-**

- 31.1** The price quoted by the supplier should not be higher than the maximum price, if any, for the materials and the same shall not be higher than the price usually charged by the supplier for materials of the same nature, class or description to any other purchaser.
- 31.2** The price charged for the materials supplied under the order/contract by the supplier shall in no event exceed the lowest price at which the supplier sells the materials of identical description to any other person during the period till performance of all supply orders placed during the currency of the contract is completed. If at any time during the period the supplier reduces the sale price of such materials or sells such materials to any other person including his dealers at a price lower than the price chargeable under the contract, he shall forthwith notify such reduction or sale to the purchase and the price payable under the contract for these materials supplied after the date of coming into force of such reduction or sale shall stand correspondingly reduced.
- 31.3** If it is discovered that the supplier has contravened the above conditions, then without prejudice to any other action which might be taken against him, it shall be lawful for the purchaser to terminate the order/contract and purchase the materials at the risk and cost of the supplier and in that event the provision of Conditions of tender shall, as far as possible, be applicable or recover the loss.
- 31.4** **The Contractor shall furnish the following certificate to the concerned Account Officer along with each bill for payment of supplies made against the order/contract:**

“I/We certify that there has been no reduction in sale price of the stores of description identical to the stores supplied to the Government under the contract herein and such stores have not been offered/sold by me/us to any person /organization including the purchaser or any Department of Central Government or any Railway Office or any Railway Undertaking as the case may be up to the date of bill/the date of completion of supplies against all supply orders placed during the currency of the order/contract at a price lower than the price charged to the RailTel, Northern Region, under the contract.”

A Government of India  
Undertaking

**Form-A****GURANTEE BOND FOR SECURITY DEPOSIT**

(On Stamp Paper of requisite value)

(To be used by approved Scheduled Banks)

1. In consideration of the RailTel Corporation of India Limited, registered & regional office 6th floor, Tower-3, Delhi Technology Park, Shastri Park, New Delhi-110053 (hereinafter called “the RailTel”) having agreed to exempt (M/s. Party Name and Address)..... (hereinafter called “the said Contractor(s)”) from the demand, under the terms and conditions of an Agreement No. ....(LOA/PO No.) Dated.....(LOA/PO date) made between ..... and..... for ..... (Name of Work/Supply) ( hereinafter called “ the said Agreement”) of Security Deposit for the due fulfillment by the said contractor(s) of the terms and conditions contained in the said Agreement, or production of a Bank Guarantee for Rs. .... (Rs. .... Only). We, .....(Bank Name and Address)) hereinafter referred to as “ the Bank”) at the request of. .... Contractor(s) do hereby undertake to pay the RailTel an amount not exceeding Rs. .... Against any loss or damage caused to or suffered or would be caused to or suffered by the RailTel by reason of any breach by the said Contractor(s) of any of the terms or conditions contained in the said PO/Agreement.

2. We, ..... Bank (Bank Name and Address) do hereby undertake to pay the amount due and payable under this Guarantee without any demur, merely on demand from the RailTel stating that the amount is claimed is due by way of loss or damage caused to or would be caused to or suffered by the RailTel by reason of breach by the said Contractor(s) of any of terms or conditions contained in the said Agreement or by reason of the Contractor(s) failure to perform the said PO/Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. ....

3. We, ..... Bank (Bank Name and Address) undertake to pay to the RailTel any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) / Supplier(s) in any suit or proceedings pending before any court or Tribunal relating thereto our liability under this present being, absolute and unequivocal.

The Payment so made by us under this Bond shall be a valid discharge of our liability for payment thereunder and the Contractor(s) / Supplier(s) shall have no claim against us for making such payment.

4. We, ..... Bank (Bank Name and Address) further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said PO/Agreement and that it shall continue to be enforceable till all the dues of the RailTel under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till RailTel certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this Guarantee. Unless a demand or claim under the Guarantee is made on us in writing on or before the ..... We shall be discharged from all liability under this Guarantee thereafter.

5. We, ..... (Bank Name and Address) further agree with the RailTel that the RailTel shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the Agreement or to extend time of to postpone for any time or from time to time any of the powers exercisable by the RailTel against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension to the said Contractor(s) or for any forbearance, act or omission on the part of RailTel or any indulgence by the RailTel to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have affect of so relieving us.

6. This Guarantee will not be discharged due to the change in the Constitution of the Bank or the Contractor(s) Supplier(s).

7. We, ..... (indicate the name of Bank) lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the RailTel in writing.

8. Notwithstanding anything contained herein,

Our liability under the Bank guarantee shall not exceed Rs. .... (In Rupees)

This Bank Guarantee shall be valid up to ..... and

we are liable to pay the guaranteed and or any part thereof under this Bank Guarantee only and only if you serve upon is a written claims or demand or before .....(date of expiry of guarantee)

\_\_\_\_\_ Dated the \_\_\_\_\_ day of \_\_\_\_\_ 2016

\_\_\_\_\_ for .....  
(Indicate the name of the Bank)

Witness

1. Signature

Name

2. Signature

Name

रेलटेल  
RAILTEL  
A Government of India  
Undertaking

**Form-B****STATEMENT OF DEVIATIONS****(PROFORMA FOR STATEMENT OF DEVIATIONS)**

1. The following are the particulars of deviations from requirements of the conditions of Contract

## Commercial Terms &amp; Conditions (Chapter -II)

Clause	Deviation	Remarks (Including Justification)
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2. The following are the particulars of deviations from requirements of the Technical specifications (Chapter -IV)

Chapter	Clause	Deviation	Remarks (Including Justification)
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**Note:** Where there is no deviation, the statement should be returned duly signed with an endorsement indicating “**no deviations**”.

SIGNATURE AND SEAL OF THE  
MANUFACTURER / TENDERER



## **Chapter IV**

### **Special Conditions of Contract**

- In case of any discrepancy between the provisions of this section and provisions of other section of tender documents, the provisions of this section shall prevail.
- All the equipment provided under this contract shall be complete with power cables. The Equipment shall operate on 230 volts, 50 Hz single phase AC power supply and the power cables shall be fitted with 3 pin, 5A (OR) 15A plug tops complying with Indian Electrical standards.
- The equipment are to be supplied under this contract shall be the industry proven products and not the R&D models. The equipment shall confirm to the requirements of relevant Indian & International Standards.
- All the components of the main system shall be from the same Original Equipment Manufacturer (OEM). Assembled product of different makes or refurbished products shall not be accepted.
- The System Integrator (SI, also referred as Bidder or AVC in this document) should ensure that products / technologies /services quoted under this project are not declared end of life by the respective OEM and also ensure that End-of-Life of the proposed product is not earlier than one year from the OBD of the project.
- The SI should ensure that the spares and upgrades for the product shall be available at least for FIVE years from the date of OBD.
- During warranty period replacement of defective components or sub-components shall be replaced by the brand new spare parts bearing the same OEM part number Only under exceptional circumstances of non-availability of spare of the same part number the compatible spare having different OEM part number may be accepted. However, in such cases the spare part to be supplied against the defective part shall be brand new and shall bear part number from the OEM.
- The BOQ estimated is not exhaustive. Any additional items / components as required for the successful completion of the work under taken may be assessed by the party and the same may be incorporated in the offer. The BOQ as assessed by the party as above should be clearly indicated in the offer. Even at the time of execution, if any additional items / components are required to complete the system, notwithstanding the BOQ as identified by the party as above, the same shall be provided free of cost by the SI (System Integrator).



- Only such bidders who have quoted their prices for the complete scope in all respect shall be considered for evaluation.

### **Scope of Work:**

- Supply, transportation, loading and unloading, Transit Insurance, Delivery at site, Installation, Cabling, Testing, Commissioning, Documentation, Warranty and Service support of all the components supplied under this contract including Audio, Video, Software, Systems & various components as per Technical Specifications and Bill of Quantities attached to the bidding document.
- IT related system, if any, provided for operation with AV equipment (e.g. Video Production equipment / software etc.), the same should be provided with Pre installed OS Software with latest service pack with original DVD Media, license and installation/activation keys. This Operating System DVD shall be used for installation of the OS in case of software corruption, hard disk replacement etc. Additional software, if any, supplied should be provided with media.
- Recovery / Reinstallation DVD containing software device drivers etc. for all AV equipment including but not limited to Video Production Systems, Touch Panel and Control Software Program etc. shall be provided.
- To the extent possible molded AV cables should be used with the AV equipment. In case AV connectivity cables are crimped, the cables and connectors shall be of unsoldered type.

### **1.1. Vendor's Responsibility:**

1.1.1. Supply and installation of all the hardware and software items as per the scope of work and detailed technical specifications. All these equipment/ accessories will be warranted and must operate at OR above the guaranteed values with regard to availability.

1.1.2. The system spare parts, as and when required and complete maintenance support of the system in future shall be back to back guaranteed from OEM for a period of 01 Years from the date of successful taking over of the complete project by the owner from the SI.

1.1.3. One copy of Hardware and Software documentation shall be provided along with the supply of equipment. The vendor shall provide services as detailed in this specification.

1.1.4. The vendor shall arrange for all tools, tackles, testing instruments etc., as required during all operations such as transportations, installation, testing and commissioning etc., for



completing the scope of work as per this specification. These tools and tackles and testing instruments etc., shall be allowed to be taken back by the vendor. The vendor shall undertake all testing and commissioning activities and shall provide assistance during inspection and acceptance testing by the owner.

1.1.5. Vendor shall provide all required equipment and services, whether explicitly mentioned in these specifications or not, to fulfil the intent of the specification and to ensure completeness, operability and maintainability of the system at no extra cost to the owner.

1.1.6. Vendor shall furnish the part Number/ Product identification Number for all products as provided by the original manufacturer.

1.1.7. Vendor shall provide a clear and explicit activity wise action plan and schedule of completion of the above work.

1.1.8. Vendor shall provide a detailed list of Project Manager, Site Engineer, and Technician etc., who are intended to be assigned for commissioning of the subject project, clearly mentioning the detail of their work experience, certifications and other skills. This shall be subject to approval by Engineer In-charge.

1.1.9. Vendor shall ensure that the manpower is technically competent and must possess requisite certifications from various OEMs as required. RailTel Corporation of India Ltd. shall have discretion of accepting or rejecting the manpower proposed.

1.1.10. During the execution phase, any changes in the manpower deployment at site should be notified in writing to the Engineer In-Charge with the details of the new person assigned for the task, and approval for the same to be sought.

## **1.2. Bid Data:**

1.2.1. The Bidder must furnish complete information asked in this specification. Bidder has to quote for the total scope of supply and other works. Amongst other things, the Bidder must supply the details / specifications regarding the following items along with his bid.

1.2.2. Hardware: Comprehensive write-up on features of H/W Systems under AV Package.

1.2.3. Software: Comprehensive write-up on features of software including but not limited to control panel software, Video Production Software, Class room management Software, Video encoding Software.

1.2.4. Site Preparation, Supervision and Installation.

1.2.5. Special requirements, if any, of operating parameters like the range of temperature, humidity, dust level and power requirement.

1.2.6. Printed Brochures / Pamphlet / Leaflet illustrating Technical details / specifications etc. for all the items / materials quoted should be enclosed with bid.

1.2.7. The Bidder must address all the above aspects in the same order and must indicate very specifically any deviation taken by him on account of make / configuration / technical and other particulars in a separate schedule included in the bid documents. Unless specifically brought out in the specific schedule as mentioned above, the bid shall be deemed to be in line with the technical and other particulars mentioned in the tender specifications.

### **1.3. Site Preparation, Supervision and Installation:**

1.3.1. It shall be the responsibility of the vendor to supervise the site preparation by the owner to ensure that the site is prepared as per his requirements such as environmental conditions, power requirements etc. The vendor shall ensure that his system operates efficiently under these conditions.

1.3.2. The vendor shall furnish along with his offer a list of facilities and other necessities required by him, if any, for site preparation etc. The vendor shall be fully responsible for installation and commissioning of the equipment including cabling related to installed equipment (except power cables) and other related activities such as unpacking, uncarting, inspection etc. for which the owner shall provide the required space at his premises, the vendor will have to arrange by himself all testing equipment and tools required for maintenance and make his own transport arrangements.

1.3.3. The vendor shall furnish schematic drawings, signal flow diagrams with cable details, colour coding and numbering of the cables.

1.3.4. Final version of the Schematic drawings after execution shall be submitted as “As Built” Drawings and duly approved by Engineer-In-Charge / consultant.

1.3.5. Detailed shop drawings for all the equipment to be flushed on the table / lectern / related furniture to be provided before starting the execution to the Engineer-In-charge / consultant, since it carries dependency on the other vendors on the site.

### **1.4. Testing & Acceptance by RailTel Corporation of India Ltd.**

1.4.1. All the items supplied under this contract shall be verified by RAILTEL CORPORATION OF INDIA LTD. to confirm that all the hardware supplied matches to the specifications, and all the equipment are in good, working condition and are free from any physical defects / damages, till the time of site handover.

1.4.2. Any other test(s), as RAILTEL CORPORATION OF INDIA LTD. may deem fit, so as to confirm the performance or to establish the technical specifications of either individual hardware item or for the integrated operation of network, shall be done by Supplier at the Site. Should the results of these tests show any deficiency from the corresponding specifications or operation is not up to the desired level of performance, Supplier shall do the necessary replacement so as to make the Hardware items to function at the desired level of performance. All costs for such replacements shall be borne by Supplier.

1.4.3. After satisfactory completion of acceptance tests and installation of the equipment / systems / software by the Vendor, the acceptance certificate will be issued by the RAILTEL CORPORATION OF INDIA LTD.1 in writing after which the Equipment shall be handed over to RAILTEL CORPORATION OF INDIA LTD.

1.4.4. Acceptance or waiver of tests will not relieve the Vendor from the responsibility to furnish material in accordance with the specifications.

1.4.5. RAILTEL CORPORATION OF INDIA LTD. also reserves the right to conduct any testing / benchmarking of previously approved materials at any stage before taking over of the system and if the same reveal noncompliance to the specifications, the Vendor shall take necessary action so that the material / system / software conforms to the specifications to the satisfaction of the Engineer In-Charge.

## **1.5. Warranty:**

1.5.1. Vendor shall provide on-site comprehensive back to back warranty from OEM for trouble free operation of hardware, software and Licenses (if any), supplied under this contract, for a minimum period of ONE (01) years after commissioning and successful testing and taking over of the project. Documentary proof from OEM confirming 01 years On-site comprehensive warranty should be submitted at the time of handing over. During this period, it will be the responsibility of the vendor to maintain and support the hardware and software fully and ensure availability of the same.

1.5.2. The detailed scope of services to be provided by vendor during Warranty period, shall include but not limited to the following:

1.5.3. Vendor shall provide comprehensive maintenance support for satisfactory performance of all Hardware supplied under this contract, Projectors including support for Lamps for 01 Year of Operation.

1.5.4. In case of any failure/non-operation of above items the same shall be attended by the vendor within 24 hours of lodging the complaint by RAILTEL CORPORATION OF INDIA LTD., excluding intervening holidays. A call report sheet giving the details of problem attended, duly signed by the concerned end user shall be maintained.

**If contactor fail to comply with SLA he shall be liable to pay 0.5 % penalty of entire contract value per week to RailTel.**

1.5.5. The vendor shall arrange for standby equipment, if the faulty equipment is not rectified within FIVE (05) working days or items are taken out of RAILTEL CORPORATION OF INDIA LTD. premises for servicing/repair. Mechanical breakages and any consumables are not covered in the warranty.

**If vendor fails to arrange the standby equipment or repair the faulty equipment within time, Vendor shall be liable to 1% penalty of order value to RailTel.**

**RailTel reserves all rights to purchase the new equipment and recover the cost from vendor if vendor fails to resolve the issue within two weeks from the date of lodging the complaint.**

1.5.6. Vendor should also provide details of appropriate Escalation Matrix in case of non-satisfactory service support.

1.5.7. The Vendor shall be responsible for providing, free of cost, all supplies, spares and services (including labour) necessary for maintenance during warranty.

## **1.6. Onsite Manpower and Maintenance Support:**

1.6.1. A detailed “Scope of Work for Onsite Manpower and Maintenance Support” is brought in the later sections of this document.

## **1.7. Site Visit:**

1.7.1. The bidders are strongly advised to visit and examine the site and to obtain himself, on his own responsibility, all information, such as the architectural and interior drawings, that may be necessary for preparing the Bid and entering into a Contract. The expenditures of visiting the sites shall be at bidders own expenses.

1.7.2. The bidders should do necessary environmental survey for cabling, containments (conducting and raceways) and towards RF implementation (using specific analysers meant for wireless microphone system installation across the facility).

1.7.3. The bidders should take into account the interior lighting plan while planning the location of IR blasters for wireless conferencing system, especially the location of halogen lights, if any, so as to avoid any interference.



## **2. Scope for Installation, Testing, Commissioning and Handing over of the Project**

2.1. “The BOQ estimated by RAILTEL CORPORATION OF INDIA LTD. is not exhaustive. Any additional items / components as required for the successful completion of the work under taken may be assessed by the bidder and the same may be incorporated in the offer. The BOQ as assessed by the bidder as above should be clearly indicated in the offer. Even at the time of execution, if any additional items / components are required to complete the system, notwithstanding the BOQ as identified by the party as above, the same shall be provided free of cost by the bidder”.

2.2. The scope of work comprises Installation, Testing, Commissioning and Handing over of the supplied equipment under this project. The bidder shall provide a comprehensive integrated turnkey solution. Any minor Electrical works, civil interior work for false ceiling, and flooring and minor carpentry work relating to the installation of the equipment supplied under this project shall be in the scope of the SI. The bidders shall quote for a total integrated turnkey solution covering all the above.

2.3. The bidder shall supply and install all required connectors, cables, etc. as well as the programming necessary to complete the installation of the project.

2.4. Installation & Commissioning inter alia including Supply, laying with suitable protection, termination / fixing of cables, connectors, lugs and other items, not specifically even mentioned in the Technical Specification, BOQ and is required to successfully complete the project shall be provided free of cost by the bidder.

## **3. Scope of Work for Onsite Manpower and Maintenance Support**

3.1 Successful Bidder shall depute On-site Engineers at Site (RailTel) to extend day-to-day support in operation of the AV & IT Systems, Supplied, Installed and Commissioned under this package.

3.2 Site Engineers Qualification & Experience: The scope of activities would entail the following work force requirements:

### **3.3 Level - I: Resident Engineers:**

**Qualification:** Level – 1 AV Resident Engineer – 01 number with 2 years or more experience in handling AV equipment.

#### **Responsibilities:**

3.3.1 Resident Engineer shall attend and support Day to Day activities related to AV works of Class room, Auditorium, Conference Room, AV Control Room etc.



3.3.2 Shall support in interconnecting various AV devices as per requirement, support in recording live sessions, Play back of recorded sessions and feeding, editing and updating digital signage content.

3.3.3 Assisting and providing support for classroom AV setup to the participants, Faculties and coordinators etc.

3.3.4 Escalate the call to back end support from the Technical support team or from respective OEMs and take corrected actions as instructed.

3.3.5 Ensure correct & proper recording, editing and final post production activities of the recorded content and ensure availability of the same on the Learning management system.

3.3.6 Ensure proper back up of the various contents generated in the system.

3.3.7 Ensure proper back up of the various contents generated in the system.

3.3.8 Co-ordinate with the Site In-charge and take necessary actions accordingly.

3.3.9 No payment against To and fro charges, accommodation any other incidental charges shall be entertained against deployment of man-power at site, bidders shall include the cost against these type of incident expenditures in their quoted price.

#### **3.4 Level - II: Site In-charge [ONE]:**

There is no need of full time level II engineer on site. It shall be deployed on site on request by client. Vendor should also make sure that all the preventive maintenance shall be carried out by Level II engineer only.

No payment against To and fro charges, accommodation any other incidental charges shall be entertained against deployment of man-power at site, bidders shall include the cost against these type of incident expenditures in their quoted price.

The actual timing shall be decided in consultation with Engineer In-charge.

#### **3.5 Scope of work covered under Maintenance Support:**

3.5.1 The maintenance service provider should respond to the problem on real time basis during normal RAILTEL CORPORATION OF INDIA LTD. working hours. Any damage to the equipment occurred during the maintenance shall be repaired /replaced (with equivalent or higher specification items) by the successful bidder at their own expense.

3.5.2 Successful bidder shall have to maintain adequate number of readily available spare at site to attend to the problem immediately. Necessary lockable storage in this regard will be arranged by RAILTEL CORPORATION OF INDIA LTD. The successful bidder should consult the Engineer-in-charge for an approximate estimate of number of spares to be kept. Successful bidder has to ensure that spares are readily available on-site so as to prevent any call delays.

3.5.3 No alteration/attachments/adjustment should be made to the hardware being repaired that can decrease /reduce the actual capability of the machine.

3.5.4 The vendor shall arrange for all tools, tackles, testing instruments etc. as required during all operations such as transportation, installation, testing and commissioning etc., for completing the assigned work.

### **3.6 Call Management System:**

In order to manage the call effectively, the successful bidder is required to maintain manual/web based (preferably Open Source – ex: GLPI-OCS or equivalent) software having facility to accept the call from the users and assign it to respective (L-1) Engineers and after resolving the call it should have the facility to close the call by L-2 Engineer.

### **3.7 Preventive Maintenance:**

The scope of Preventive Maintenance is given below, but not limited to the following:

- 3.7.1 Developing of maintenance plan/schedule for all hardware items.
- 3.7.2 Dusting and vacuum cleaning of all hardware items with suitable cleaning agents.
- 3.7.3 Cleaning of all Optical drive lenses using recommended cleaning agents.
- 3.7.4 Environmental check of hardware items e.g. power, AC, earthing

### **3.8 Documents to be Submitted by the Successful Bidder:**

3.8.1 Complete details and CV of the personnel being proposed to be deployed under the contract. The personnel being deployed under the contract shall be deployed only after approval from RAILTEL CORPORATION OF INDIA LTD.

3.8.2 The contact details in the form of escalation matrix shall be submitted by the successful bidder for escalating administrative, commercial, and technical issues.

### **3.9 Service quality:**

3.9.1 The successful bidder will undertake to maintain highest service standards. The successful bidder shall employ only qualified and trained staff with adequate field experience. If RAILTEL CORPORATION OF INDIA LTD. demands, the successful bidder will have to provide proof of qualification and experience of person employed for servicing the equipment.

3.9.2 The part/components/sub-assemblies used for repair/replacement by the successful bidder will be of the same/equivalent or higher make and having functional capacity as available originally in the system.

### **3.10 SLA TERMS & CONDITIONS (FOR AMC SUPPORT):**

1. During the term of the contract, the BIDDER will maintain the equipment in perfect order and working condition and for this purpose will provide the following repairs and maintenance services:

a) Professionally qualified personnel who have expertise in the hardware and system software installed will provide these services.

b) The Bidder shall rectify any defects, faults and failures in the equipment and shall repair / replace worn out or defective parts (including plastic parts and lens) of the equipment during working hours i.e. from 9.30 A.M. to 6.00 P.M. on all working days (viz. Monday to Saturday). In case any defects, faults and failures in the equipment could not be repaired or rectified during the said period, the Bidder personnel are required to accomplish their duties beyond the said schedules in case of any situation if it warrants. In cases where unserviceable parts of the equipment need replacement, the Bidder shall replace such parts, at no extra cost to the RAILTEL, with brand new parts or those equivalent to new parts in performance. For this purpose the Bidder shall keep sufficient stock of spares at the premises of The Bidder.

c) The maximum response time for a maintenance complaint from the site of installation (i.e. time required for Bidder's maintenance engineers to report to the installations after a request portal / call / fax / e-mail is made or letter is written) shall not exceed 2 hours.

d) The BIDDER shall ensure that faults and failures intimated by Railtel as above are set right within 4 (four) hours of being informed of the same. In any case of replacement of parts, the equipment should be made workable and available not later than 24 hours.

e) However replacement with new equipment shall be carried out within 7 days from date of intimation of fault / failure.

h) In the event of the equipment not being repaired or a workable solution not provided during AMC period, a penalty, per working day or part thereof for the delay, will be charged at the rate mentioned below, subject to maximum amount of ten (10) per cent of the total consideration. The bidder may provide temporary equivalent replacement as a workable solution to avoid the penalty.

- For VC end-point / control processor / displays / matrix switcher / router / audio DSP  
– Rs 1,000/- per day

j) The BIDDER shall ensure that the meantime between failures (MTBF) (including any malfunctioning, breakdown or fault) in the equipment or any part thereof as calculated during any and every quarter (period of three consecutive months) is not less than 90 days.

k) **Preventive maintenance:** the BIDDER shall conduct Preventive Maintenance (including but not limited to inspection, testing, satisfactory execution of all diagnostics, cleaning and removal of dust and dirt from the interior and exterior of the equipment, and necessary repair of the equipment) once within first 15 days of the award of contract and once within the first 15 days of every alternate month during the currency of this agreement on a day and time to be mutually agreed upon. Notwithstanding the foregoing the BIDDER recognizes Railtel's operational needs and agrees that Railtel shall have the right to require the BIDDER to adjourn preventive maintenance from any scheduled time to a date and time not later than 15 working days thereafter.

l) Qualified maintenance personnel totally familiar with the equipment shall perform all repairs and maintenance service to be provided in terms of the contract.

m) The Railtel shall maintain a register at its site in which, the Railtel's operator /supervisor shall record each event of failure and / of malfunction of the equipment. The bidder personnel engineer shall enter the details of the action taken in such register. Additionally every time a preventive or corrective maintenance is carried out, the bidder personnel shall make, effect in duplicate, a field call report which shall be signed by him and thereafter countersigned by the Railtel's official. The original of the field call report shall be handed over to the Railtel's official.

n) The bidder shall provide replacement equipment if any equipment is out of the premises for repairs.

2. The Bidder warrants that any new products supplied under the Contract are new, unused, of the most recent or current model. The Bidder further warrants that all the Products supplied under this Contract shall have no defect, arising from design or from any act of omission of the Bidder that may develop under normal use of the supplied products in the conditions prevailing in India.

3. Subsequent to the order being placed by the Railtel, in the event of bidder or the concerned OEM being taken/ brought over by another company, all the obligations and execution of responsibilities under the agreement with Railtel should be passed on for compliance by the new company in the negotiation for their transfer.

4. Any worn or defective parts withdrawn from the equipment and replaced by the BIDDER shall become the property of the BIDDER and the parts replacing the withdrawn parts shall become the property of Railtel.

5. The BIDDER's maintenance personnel shall be given access to the equipment when necessary, for purpose of performing the repair and maintenance services indicated in this agreement.

6. Railtel shall arrange to maintain appropriate environmental conditions, such as those relating to space, temperature, power supply, dust within the acceptable limits required for equipment similar to that covered by this Agreement.



7. NO term or provision hereof shall be deemed waived and no breach excused, unless such waiver or consent shall be in writing and signed by the party claimed to have waived or consented. Any consent by any party to or waiver of a breach by other, whether express or implied, shall not constitute a consent to or waiver of or excuse for another different or subsequent breach.

8. If, in any month, the BIDDER does not fulfil the provisions of clauses 1(b), (c),(d), (e) and (h) only the proportionate maintenance charges for that period during the month will be considered payable by Railtel without prejudice to the right of the Railtel to terminate the contract. In such event the BIDDER was credited without deducting the proportionate maintenance charges for that month, the Railtel can deduct the same from future payments payable or the BIDDER shall refund the amount forthwith to Railtel on demand by Railtel.

9. On account of any negligence, commission or omission by the bidder personnel, and if any loss or damage caused to the Equipment, the BIDDER shall indemnify/pay/reimburse the loss suffered by the RAILTEL.

#### **10. Future additions of Hardware / Software:**

10.1 The Railtel would have the right to:

- a) Disconnect / connect / substitute equipment or devices or any equipment /software acquired from another bidder.
- b) Expand the capacity / enhance the features / upgrade the hardware / software supplied, either from the bidder, or another bidder, or developed in-house, provided such changes or attachments do not prevent proper maintenance, from being performed or unreasonably increase the BIDDER cost of performing repair and maintenance services.

10.2 The AMC terms would not be considered as violated if any of (a) or (b) above takes place. Should there be a fault in the operations of the system, the bidder, would not unreasonably assume that the causes lie with those components / software not acquired from them.

10.3 The bidder shall facilitate up-gradation of operation system of servers, increase storage/RAM to make it compatible to upgraded OS. **Cost of this hardware shall be borne by the Railtel.**

**11. SUBCONTRACTING:**

11.1 The BIDDER will not subcontract or permit anyone other than the BIDDER personnel to perform any of the work, services or other performance required of the BIDDER under this agreement without the prior written consent of the Railtel.

**12. CONFIDENTIALITY:**

12.1 The BIDDER acknowledges that all material and information which has and will come into its possession or knowledge in connection with this agreement or the performance thereof, whether consisting of confidential and proprietary data or not, whose disclosure to or use by third parties may be damaging or cause loss to Railtel will all times be held by it in strictest confidence and it shall not make use thereof other than for the performance of this agreement and to release it only to employees requiring such information, and not to release or disclose it to any other party. The BIDDER agrees to take appropriate action with respect to its employees to ensure that the obligations of non-use and non-disclosure of confidential information under this agreement are fully satisfied. In the event of any loss to the Railtel in divulging the information by the employees of the BIDDER, the Railtel shall be indemnified. The BIDDER agrees to maintain the confidentiality of the Railtel's information after the termination of the agreement also.

12.2 The BIDDER/Railtel will treat as confidential all data and information about the BIDDER/Railtel/Contract, obtained in the execution of this tender including any business, technical or financial information, in strict confidence and will not reveal such information to any other party.

**SLA Terms & Conditions****For Facility Management Services (FMS)**

If the Railtel desires to opt for the service, Facility Management is required to manage the AV setup as part of the bid package. For this purpose one qualified Professionals (well versed with the operations of the system) will be required to remain in the Railtel's premises for day to day operations of the equipment from 9.30 A.M. to 6.00 P.M. on working days (other than Railtel holidays). However, the engineer will have to work on holidays and after office hours, if necessary. The Facility Management Services, if opted for by the Railtel will be required from the day of installation **or from any future date as per Railtel's requirement.**

**Qualification of Support Engineer:**

The minimum qualification of the support engineer should be min. B.E. or Diploma and should have at least 1 year of work experience in Audio Video Systems.

**Roles and responsibilities of support Engineer:**

1. Should coordinate with all VC locations with whom conferencing is scheduled.
2. Should do preventive maintenance and testing of the AV system periodically.
3. Should monitor progress of meetings, status of AV system using the remote monitoring and control interface part of the bid.
4. Should know all the features (audio, video, control etc.) which are available in the proposed solution. During the term of the contract, the BIDDER will maintain the equipment in perfect working order and condition and for this purpose will provide the following repairs and maintenance services:

a) The BIDDER shall rectify any defects, faults and failures in the equipment and shall repair and replace worn out or defective parts including all plastic parts/lenses of the equipment during local working hours i.e. from 9.30 A.M. to 6.00 P.M. on weekdays. However, the engineer will have to work on holidays and after office hours, if necessary.

b) The BIDDER shall provide repair and maintenance service, in response to oral, including telephone notice by Railtel, within 2 hours (excluding intervening Sundays and Railtel holidays) after such intimation during the hours set forth in clause 1 (a) above.

c) The BIDDER shall ensure that faults and failures intimated by Railtel as above are set right within 4 hours of being informed of the same.

d) The BIDDER shall ensure that the full configuration of the equipment is available to Railtel in proper working condition for minimum 99.5% of the time on a monthly basis.

e) Preventive Maintenance: The BIDDER shall conduct Preventive Maintenance (including but not limited to inspection, testing, satisfactory execution of all diagnostics, cleaning and removal of dust and dirt from the interior and exterior of the equipment, and necessary

repairing of the equipment) once within the first 15 days of the commencement of the maintenance period and once within the first fifteen days of every subsequent month during the currency of this Agreement on a day and time to be mutually agreed upon. Notwithstanding the foregoing, the BIDDER recognizes Railtel's operational needs and agrees that Railtel shall have the right to require the BIDDER to adjourn preventive Maintenance from any scheduled time to a date and time not later than 15 working days thereafter.

f) All engineering changes generally adopted hereafter by the BIDDER for equipment similar to that covered by this AGREEMENT, shall be made to the equipment at no cost to Railtel.

g) All repair and maintenance service described herein shall be performed by qualified maintenance engineers totally familiar with the equipment.

h) The Railtel shall maintain a register at its site in which, the Railtel's operator/supervisor shall record each event of failure and/or malfunction of the Equipment. The BIDDER's engineer shall enter the details of the action taken in such register. Additionally, every-time a preventive or corrective maintenance is carried out, the BIDDER's engineer shall make, effect in duplicate, a Field Call Report which shall be signed by him and thereafter countersigned by the Railtel's official. The original of the Field Call Report shall be handed over to the Railtel's official.

2. The BIDDER's maintenance personnel shall be given access to the equipment when necessary for purposes of performing the repair and maintenance services indicated in this Agreement.

3. The equipment shall not be shifted to an alternate site and installed thereat during the currency of this Agreement without prior written notice to the BIDDER. However, if Railtel desires to shift the equipment to a new site and install it thereat urgently, the BIDDER shall be informed the same immediately. Railtel shall bear the charges for such shifting and reinstallation and the BIDDER shall provide necessary assistance to Railtel in doing so.

4. If, in any month, the BIDDER does not fulfill the provisions of clauses 1(a), (b), (c) and (d) only the proportionate maintenance charges for that month will not be considered payable by Railtel without prejudice to the right of the Railtel to terminate the contract. In such event the BIDDER will adjust the amount towards the proportionate maintenance charges for that month to Railtel against future payments if due or refund the amount forthwith to the Railtel on demand by the Railtel within one month days from receipt of demand.





## Chapter V

### **GUIDELINES FOR AUDIO VISUAL WORKS**

#### **1.0 Design Intent/ Design Basis Report**

##### **Introduction:**

The purpose of this document is to define the audiovisual requirements for the facility of Railtel Corporation of India Ltd. at 6<sup>th</sup> floor, Tower 3, Delhi Technology park, Shastri Park, Delhi-110053.

The facility consist various multimedia resources, ranging from small, medium and large meeting/conference rooms, reception, NOC room, telepresence room and Cafeteria.

The design is proposed as per drawings provided by the architects. Suitable assumptions have been made in respect to elevations, sections and placement of various facilities. The design intent is tentative and provides an overview of designer's up-front vision and the goals of the project. The actual implementation may vary depending on the actual site requirements.

Further, the design intent shall evolve as the project moves through different stages, from finalization of design (BOQ), programming and construction of building occupancy and then renovations and retrofits.

The purpose of this document is to provide system planners, designers, owners of the project, a complete and coherent view of the project and hence ensure seamless design and implementation.

##### **Room Matrix:**

<b>Room Type</b>	<b>6th Floor Room Quantity</b>
8 PAX Meeting Room	<b>01</b>
12 PAX Meeting Room	<b>01</b>
44 PAX Video Conference Room	<b>01</b>
Cafeteria	<b>01</b>
Reception	<b>01</b>
CNOC Room	<b>02</b>
L Cabin	<b>03</b>
Telepresence Room	<b>01</b>

**Description for different room types:**

**1) 8 PAX Meeting Room:**

The meeting room with a seating capacity of 8. In this space users can present and share ideas locally.

Users will be seated at a fixed table and will be able to view content on a single wall-mounted 46” LED back-lit display. (Provision only)

One (01) table top connectivity plate provides HDMI and VGA with Audio interface.

Reference AV connectivity/schematic.

**2) 12 PAX Meeting Room:**

In this space users can present and share ideas and information locally. Users will be seated at a fixed table and will be able to view content on a single wall-mounted 46” LED display.

(02) Interfaces with HDMI, VGA and audio will be provided on table for sharing laptop content. The inputs will be auto switched to the last input connected.

Reference AV connectivity/schematic.

**3) 44 PAX Video Conference Room:**

Video conference room provides a space with three modes of operation: local presentation, audio conferencing and video conferencing. Here users can present and share ideas either locally or to remote offices via video and audio conference equipment. Users will be seated at a fixed table and view content on a fixed 110” optical front projection tab tensioned screen powered with a ceiling-mounted projector.

(09) Table top microphones and (06) ceiling loudspeakers provide for near end audio pickup and far end audio reproduction. The same set of microphones and loudspeakers will be used for sound reinforcement by making use of mix-minus programming structure in the audio DSP. They integrate with both the video and audio conferencing system at the back end.

Three (02) cable cubbies provide for HDMI, VGA, Audio and network connectivity.

A 9.7” wireless touch panel with base station on the table is used to control the system.

AV equipment will be installed in an equipment rack within the room placed inside the credenza.

Reference AV connectivity/schematic.

**4) Cafeteria:**

Cafeteria as a space provides Set-Top-Box (STB) feed to be viewed on (01) 46" wall mounted LED back-lit display.

Reference AV connectivity/schematic: -NA-

**5) Reception:**

Display at the reception will provide a platform for visual communications for corporate branding, news tickers, emergency messages etc.

Video from a networked signage player is reproduced on (01) 46" wall mounted LED back-lit display.

The same display also supports Set-Top-Box (STB) to be viewed.

Reference AV connectivity/schematic: -NA-

**6) CNOC Room:**

Control room provide a space to monitor and manage client's security operations. The operators in this room will have (06) 46" Thin bezel LED back-lit monitors stacked together to form 2x3 video wall. The back end video processor will allow different combination of layout being created for the (06) sources. All the sources are going to be installed in the room and along with a video processor.

The video processor's output will be connected to the displays using dual link DVI cables.

AV equipment will be installed in an equipment rack within the room placed inside the credenza.

Reference AV connectivity/schematic.

**7) L cabin:**

The user in this room will be able to view his content on a single wall mount 46" LED monitor. (Provision only).

A table top connectivity provides for HDMI, VGA with Audio interface.

The same display also supports Set-Top-Box (STB) to be viewed.

Reference AV connectivity/schematic: -NA-

**Indicative Room wise Bill of Material:**

## 1. 8 Pax Meeting room:

#	Description	UoM	Qty	Intended usage / purpose
<b><u>"The BOQ is indicative only. It provides only a brief idea about the consultant's and owner's view of the project."</u></b>				
1	SITC of 46" inch professional monitor (Type - F) as per tender specification	Nos	0	46" professional grade monitor for the purpose of presentation <b>(PROVISION ONLY)</b>
2	SITC of 6' HDMI cable as per tender specification	Nos	1	6' cable for purpose of connecting presentation source to interface plate
3	SITC of 6' VGA A as per tender specification	Nos	1	6' cable for purpose of connecting presentation source to interface plate
4	SITC of Wall plate (Type - A) as per tender specification	Nos	1	Wall Plate interface panel for purpose of source connectivity
5	SITC of 25' HDMI cable as per tender specification	Nos	1	25' cable for purpose of connecting wall interface plate to display
6	SITC of 25' VGA A cable as per tender specification	Nos	1	25' cable for purpose of connecting wall interface plate to display

## 2. 12 Pax Meeting room:

#	Description	UoM	Qty	Intended usage / purpose
<b><u>"The BOQ is indicative only. It provides only a brief idea about the consultant's and owner's view of the project."</u></b>				
1	SITC of 46" inch professional monitor (Type - F) as per tender specification	Nos	1	46" professional grade monitor for the purpose of presentation
2	SITC of 6' HDMI cable as per tender specification	Nos	2	6' cable for purpose of connecting presentation source to interface plate

3	SITC of 6' VGA A as per tender specification	Nos	2	6' cable for purpose of connecting presentation source to interface plate
4	SITC of Wall plate (Type - A) as per tender specification	Nos	2	Wall Plate interface panel for purpose of source connectivity
5	SITC of 10' HDMI cable as per tender specification	Nos	2	10' cable for purpose of connecting wall interface plate to video switcher
6	SITC of 10' VGA A as per tender specification	Nos	2	10' cable for purpose of connecting wall interface plate to video switcher
7	SITC of Video presentation switcher (Type - A) as per the tender specification	Nos	1	Media Presentation switcher for purpose of video switching
8	SITC of 25' HDMI cable as per tender specification	Nos	1	25' cable for purpose of connecting switcher output to display

## 3. 44 Pax Video Conference room:

#	Description	Uo M	Qty	Intended usage / purpose
<b><u>"The BOQ is indicative only. It provides only a brief idea about the consultant's and owner's view of the project."</u></b>				
	<b>Video Section</b>			
1	SITC of 110" diagonal fixed projection screen (Type - A) as per tender specification	Nos	1	110" Fixed projection screen for purpose of Video & Data presentation in normal day lighting conditions
2	SITC of 5000 lumens ceiling projector (Type - A) as per tender specification	Nos	1	Projector for data and video playback
3	SITC of Cable management box as per tender specification	Nos	5	Table interface panel to connect the presentation source
4	SITC of AC power sockets (Multi-region) as per tender specification	Nos	5	Power sockets to power the equipment
5	SITC of Video presentation switcher (Type - B) as per the tender specification	Nos	1	Video switcher to switch between multiple source
6	ITC of VC codec as per tender specification	Nos	1	VC system for video collaboration VC equipment will be



				<i>provided by RailTel</i>
7	SITC of custom camera mount as per tender specification	Nos	1	Purpose of this is to mount the camera on wall
8	<i>Multi-site / multi-party call feature with 1+3 or better as per tender specification</i>	Nos	1	<i>Purpose of this multisite calling feature for VC codec This will be provided by RailTel</i>
9	SITC of Breakout cable / adapter for VC camera as per the tender specification	Nos	1	Purpose of this to connect camera to camera input of VC codec
	<b>Audio Section</b>	Nos		
1	SITC of table boundary microphone as per tender specification	Nos	9	Microphone for audio/video conferencing
2	SITC of ceiling speakers as per tender specification	Nos	6	ceiling speakers for audio from AC/VC
3	SITC of Digital Signal Processor as per tender specification	Nos	1	Audio DSP for signal processing
4	SITC of 8 channel audio amplifier as per tender specification	Nos	1	8 channel audio amplifier for audio mix minus
	<b>Control Section</b>	Nos		
1	SITC of Control processor as per tender specification	Nos	1	Purpose of the this processor is to control the various devices within the room
2	SITC of 9.7" Touch panel as per tender specification	Nos	1	Purpose of the this touch panel is to control the room
3	SITC of charging station as per the tender specification	Nos	1	Purpose of the docking station is to charge the wireless touch panel
4	<i>SITC of wireless access point as per tender specification</i>	Nos	1	<i>(Owner Furnished Equipment) Purpose of this access point is to connect Touch panel to control processor wirelessly</i>
5	Software application compatible with control processor for the touch panel as per tender specification	Nos	1	APP which installs on touch-panel and talk to control processor for

				control purpose
	<b>Cables, Connectors &amp; Miscellaneous</b>	<i>Nos</i>		
1	SITC of 6' HDMI cable for cable cubby as per tender specification	<i>Nos</i>	2	6' cable for purpose of connecting presentation source
2	SITC of 6' VGA A as per tender specification	<i>Nos</i>	2	6' cable for purpose of connecting presentation source
3	SITC of 50' HDMI cable as per tender specification	<i>Nos</i>	4	50' cable for purpose of interconnection between AV equipment
4	SITC of 50' VGA A as per tender specification	<i>Nos</i>	2	50' cable for purpose of interconnection between AV equipment
5	SITC of 15' HDMI cable as per tender specification	<i>Nos</i>	1	15' cable for purpose of connecting camera to vc codec camera input
6	SITC of 6' HDMI to DVI cable as per tender specification	<i>Nos</i>	1	6' cable for purpose of interconnection between AV equipment
7	SITC of AV equipment rack (Type - A) as per tender specification	<i>Nos</i>	2	Closed equipment rack for house the equipment
8	Bulk connectors & cables as per tender specification	LOT	1	

## 4. CNOC room:

#	Description	UoM	Qty	Intended usage / purpose
<b><u>"The BOQ is indicative only. It provides only a brief idea about the consultant's and owner's view of the project."</u></b>				
1	SITC of 46" inch professional monitor (Type - C) as per tender specification	<i>Nos</i>	6	purpose of this displays to present the image from local NOC room computers
2	SITC of Custom video wall (2x3) mount kit as per tender specification	<i>Nos</i>	1	Mounting bracket to install the video wall
3	<i>Client PC with Display port output</i>	<i>Nos</i>	6	<i>(Owner Furnished Equipment) Purpose of this PC is to display content onto video wall</i>

4	SITC of DisplayPort male to DVI female active adapter as per tender specification	Nos	6	Purpose of adapter is to connect DP out of PC to DVI cable
5	SITC of 75' Long Dual link DVI-D cable as per tender specification	Nos	6	purpose of these cables to connect the O/P from NOC computers to video wall processor
6	SITC of Video wall processor as per tender specification	Nos	1	Purpose of this display is to scale the video image on video wall screen with multiple windows as required
7	SITC of 25' DVI-D cable as per tender specification	Nos	6	purpose of these cables to connect the O/P from video wall processor to LED display
8	SITC of AV equipment rack (Type - A) as per tender specification	Nos	1	Purpose of this rack is to install the video wall processor in the room

## 5. L-Cabin:

#	Description	UoM	Qty	Intended usage / purpose
<b><u>"The BOQ is indicative only. It provides only a brief idea about the consultant's and owner's view of the project."</u></b>				
1	SITC of 46" inch professional monitor (Type - F) as per tender specification	Nos	0	Purpose of this document is to present the content from presentation source and satellite TV connection <b>(PROVISION ONLY)</b>
2	SITC of Cable TV Set Top Box with HDMI output	Nos	1	(Owner Furnished Equipment) Purpose of this set top box is to provide satellite TV connection to display
3	SITC of IR extender for STB as per tender specification	Nos	1	Purpose of this IR extender is to extend the IR signal for STB
4	SITC of 3' HDMI cable as per tender specification	Nos	1	purpose of this cable for connecting STB to display
5	SITC of 10' HDMI cable as per tender specification	Nos	1	Purpose of this cable for connecting video source to table interface plate

6	SITC of 10' VGA A cable as per tender specification	Nos	1	Purpose of this cable for connecting video source to table interface plate
7	SITC of Wall plate (Type - A) as per tender specification	Nos	1	Purpose of this wall plate is for connecting source to the display
8	SITC of 25' HDMI cable as per tender specification	Nos	1	Purpose of this cable for connecting table interface plate to display
9	SITC of 25' VGA A cable as per tender specification	Nos	1	Purpose of this cable for connecting table interface plate to display

## 6. Reception:

#	Description	UoM	Qty	Intended usage / purpose
<b><u>"The BOQ is indicative only. It provides only a brief idea about the consultant's and owner's view of the project."</u></b>				
1	SITC of 46" inch professional monitor (Type - F) as per tender specification	Nos	1	Purpose of this display is to present the content from signage player and satellite TV
2	<i>SITC of Cable TV Set Top Box with HDMI output</i>	Nos	1	<i>(Owner Furnished Equipment) Purpose of this set top box is to provide satellite TV connection to display</i>
3	SITC of 3' HDMI cable as per tender specification	Nos	1	Purpose of this cable is to connect the STB to the display
4	SITC of Extension of IR from STB as per tender specification	Nos	1	Purpose of this IR extender is to extend the IR signal from set top box
5	SITC of Signage media player as per tender specification	Nos	1	Purpose of this media player is to play the content from network
6	SITC of Signage Player license as per tender specification	Nos	1	purpose of this software license is to manage the media player
7	SITC of DisplayPort male to HDMI female adapter Cable as per tender specification	Nos	1	Purpose of this convertor is to convert display port signal from Signage player to HDMI video

8	SITC of 3' HDMI cable as per tender specification	Nos	1	Purpose of this cable is to connect the signage player to the display
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## 7. Cafeteria:

#	Description	UoM	Qty	Intended usage / purpose
<b><u>"The BOQ is indicative only. It provides only a brief idea about the consultant's and owner's view of the project."</u></b>				
1	SITC of 46" inch professional monitor (Type - F) as per tender specification	Nos	1	Purpose of this display is to show the content from satellite TV connection
2	SITC of Cable TV Set Top Box with HDMI output	Nos	1	(Owner Furnished Equipment) Purpose of this set top box is to provide satellite TV connection to display
3	SITC of 3' HDMI cable as per tender specification	Nos	1	Purpose of this cable is to connect the satellite TV connection to display
4	SITC of Extension of IR from STB (behind the display) to front as per tender specification	Nos	1	Purpose of this IR extender is to extend the IR signal from STB

## 8. Telepresence Room:

#	Description	UoM	Qty	Intended usage / purpose
<b><u>"The BOQ is indicative only. It provides only a brief idea about the consultant's and owner's view of the project."</u></b>				
1	SITC of Cable management box as per tender specification	Nos	2	Table interface panel to connect the presentation source
2	SITC of AC power sockets (Multi-region) as per tender specification	Nos	2	Power sockets to power the equipment



## Chapter VI

### TECHNICAL SPECIFICATIONS FOR THE ITEMS OF SOR

Sr No.	Minimum Performance Specifications	Compliance Yes/No	Remarks
A	<b>Audio System</b>		
A-1	<b>JBL or QSC or Community</b>	<b>Make &amp; Model Quoted:</b>	
A-1.1	Frequency Response (+/- 3dB): 100Hz to 15kHz or better	Yes/No	
A-1.2	Nominal Dispersion: 90 degrees conical or better	Yes/No	
A-1.3	Power Handling: Low-Z, 40W (program) or better and High-Z, 12W, 6W @ 70V or 100V or better	Yes/No	
A-1.4	Sensitivity (SPL / W @ 1 Mtr): 87 dB SPL or better	Yes/No	
A-1.5	Max SPL @ 1 Mtr (Cont.): 102 dB SPL or better	Yes/No	
A-1.6	Transducers: 4" or better	Yes/No	
A-1.7	Should be supplied with back-can and ceiling mounting kit and enclosure	Yes/No	
A-1.8	The color of the speaker shall be decided at the time of ordering as per the instructions of Engineer In Charge	Yes/No	
A-2	<b>Power Amplifier</b>		
	<b>Crown or QSC or Labgruppen</b>	<b>Make &amp; Model Quoted:</b>	
A-2.1	Number of Min Channel: 8 Channels	Yes/No	
A-2.2	Per channel wattage: at 8 and 4 ohms 75Watts or better	Yes/No	
A-2.3	THD: <0.05% or better	Yes/No	
A-2.4	SNR: > 110dB	Yes/No	
A-2.5	Sensitivity - 1.4V	Yes/No	

A-3	<b>Digital Audio Signal Processor</b>		
	<b>Biamp or BSS or Symetrix</b>	<b>Make &amp; Model Quoted:</b>	
A-3.1	Rack mountable and feature software-configurable signal processing, including but not limited to: signal routing and mixing, equalization, filtering, dynamics, and delay, as well as control, monitoring, and diagnostic tools	Yes/No	
A-3.2	Closed Architecture processor with fixed I/O	Yes/No	
A-3.3	12 mic/line level inputs with AEC, 8 mic/line level outputs	Yes/No	
A-3.4	Up to 8 channels of configurable USB audio	Yes/No	
A-3.5	RS-232 serial port	Yes/No	
A-3.6	Communication Port: Ethernet or equivalent	Yes/No	
A-3.7	General purpose I/O for logic control	Yes/No	
A-3.8	In built PSTN telephone hybrid interface	Yes/No	
A-4	<b>Table Boundary Microphone</b>		
	<b>AudioTechnica or Clockaudio or Shure</b>	<b>Make &amp; Model Quoted:</b>	
A-4.1	Condenser boundary mic (Cardioid/ semi-cardioid)	Yes/No	
A-4.2	Frequency response: 50 - 18000 Hz or better	Yes/No	
A-4.3	Max. sound pressure level - 107 dB (SPL @ 1% THD) or better	Yes/No	
A-4.4	RF shielded	Yes/No	
A-4.5	Phantom power supply: 8-52V	Yes/No	
	<b>B- Video System</b>		
B-1	<b>Fixed Projection screen (Type - A)</b>		
	<b>Screen Innovations or DNP Supernova</b>	<b>Make &amp; Model Quoted:</b>	

B-1.1	Minimum image size of the screen should be 110" diagonal	Yes/No	
B-1.2	Minimum screen gain 0.8 and aspect ratio 16:10	Yes/No	
B-1.3	Half gain angle of the screen should be minimum 45°	Yes/No	
B-1.4	The screen should be fixed with lightweight aluminum frame and wall mounting kit	Yes/No	
		Yes/No	
B-2	<b>Projector (Type - A)</b>		
	<b>Panasonic or Epson or Sony or NEC</b>	<b>Make &amp; Model Quoted:</b>	
B-2.1	Technology - (3LCD) or better	Yes/No	
B-2.2	Native resolution WUXGA	Yes/No	
B-2.3	Brightness - 5000 lumens or better	Yes/No	
B-2.4	Contrast - 2000:1 or better	Yes/No	
B-2.5	Lens included with appropriate throw distance	Yes/No	
B-2.6	Input Connectivity 2 x HDMI, 1 x HD-15pin, 1 x RS232, 1 x Ethernet port	Yes/No	
B-2.7	Provide OEM approved ceiling mount kit	Yes/No	
B-3	<b>Video presentation switcher (Type - A)</b>		
	<b>Extron or Crestron or AMX</b>	<b>Make &amp; Model Quoted:</b>	
B-3.1	Presentation switcher that shall support up to six inputs and one output for switching of HDMI and RGB video sources	Yes/No	
B-3.2	Switcher should have Four HDMI, Two 15-pin HD with Two 3.5mm mini stereo jack, unbalanced line level analog stereo	Yes/No	
B-3.3	Provide one HDMI video output connection	Yes/No	
B-3.4	Support video resolutions up to 1920x1200, including HDTV 1080p/60 and 2048x1080p/60	Yes/No	
B-3.5	Should automatically reformat HDMI source signals for use with a connected DVI display	Yes/No	

B-3.6	Should automatically switch to the active input	Yes/No	
B-3.7	Shall provide a configurable switching priority when multiple inputs are active	Yes/No	
B-3.8	Shall provide automatic EDID management between connected devices	Yes/No	
B-3.9	The unit shall be HDCP compliant and provide real-time verification of HDCP status for each HDMI input and output	Yes/No	
B-3.10	Shall support embedding of any analog audio input signal onto the HDMI outputs	Yes/No	
B-3.11	Shall have Bidirectional RS 232 for control	Yes/No	
B-4	<b>Video presentation switcher (Type - B)</b>		
	<b>Extron or Crestron or AMX</b>	<b>Make &amp; Model Quoted:</b>	
B-4.1	Switcher shall be <b>video scaling</b> presentation switcher that shall support up to eight inputs and three outputs for processing and switching of HDMI, HDTV, RGB, and composite video sources, with additional support for signal extension over shielded CATx cable	Yes/No	
B-4.2	Switcher shall have Four HDMI, Two 15-pin HD, configurable for RGB, component video, S-video, or composite video and Two RJ-45 for video twisted pair transmitters	Yes/No	
B-4.3	Support HDMI specifications including 1080p/60 Deep Color, data rates up to 6.75 Gbps, and HD lossless audio formats	Yes/No	
B-4.4	Shall Provide simultaneous video output connections on Two HDMI and one RJ-45 for video to an twisted pair receiver	Yes/No	
B-4.5	Shall Provide a range of selectable video output rates from 640x480 to 1920x1200, including 1080p/60 and 2048x1080p/60	Yes/No	
B-4.6	Shall automatically switch to the active input	Yes/No	
B-4.7	Shall provide a configurable switching priority when multiple inputs are active	Yes/No	
B-4.8	Shall provide automatic EDID management between connected devices	Yes/No	
B-4.9	The unit shall be HDCP compliant and provide real-time verification of HDCP status for each HDMI input and output	Yes/No	

B-4.10	Shall support embedding of any analog audio input signal onto the HDMI outputs	Yes/No	
B-4.11	Shall have Bidirectional RS 232 and RJ-45: 10/100Base-T Ethernet for control	Yes/No	
B-5	<b>Video Conferencing Codec</b>	NA	
B-5	<b>Cisco or Polycom or Avaya</b>	NA	
B-5.1	The architecture must be open Standard based	NA	
B-5.2	This includes standards such as the H.323 and SIP umbrella standards for IP-based audio/video	NA	
B-5.3	The system should support both IPv4 and IPv6	NA	
B-5.4	Capable of connecting three sites (excluding local site) on video and audio at a time using inbuilt MCU.	NA	
B-5.5	During MCU mode video between each site should be minimum 1080p@30fps in continuous presence mode. However during point-to-point connectivity 1080p@30fps video should be maintained.	NA	
B-5.6	Should support HD video resolution in all operations at 30fps	NA	
B-5.7	Built-in acoustic echo canceller with noise reduction	NA	
B-5.8	H.239 (H.323) dual stream support for sending both video and presentation signal	NA	
B-5.9	Should support audio standards: G.711, G.722, G.722.1, G.728, G.729, AAC-LD, OPUS and video standards: H.263, H.263+, H.264	NA	
B-5.10	Should be interoperable with all legacy VC systems, like Standard Definition VC system.	NA	
B-5.11	Should have minimum (01) camera input (Prop/HDMI), (01) content input (DVI/HDMI), (02) outputs (HDMI) and mic/line inputs and outputs.	NA	
B-5.12	Should support simultaneous connection of 1 additional High Definition PTZ camera other than main camera, PC input	NA	
B-5.13	Should provide for dual monitor outputs over HDMI outputs	NA	
B-5.14	Should be included with appropriate wall mounting kit	NA	
B-6	<b>Video wall Processor</b>		
	<b>Extron or RGB Spectrum or Datapath</b>	<b>Make &amp; Model</b>	



		<b>Quoted:</b>	
B-6.1	Configurable videowall processor that shall support the real-time windowed display of multiple video, graphic, picture, and streamed input sources on a single or tiled video display	Yes/No	
B-6.2	Rack mountable with redundant power supply	Yes/No	
B-6.3	Support field configuration of input/output cards	Yes/No	
B-6.4	Should provide for (06) DVI inputs and (06) DVI outputs	Yes/No	
B-6.5	Should be HDCP-compliant when used with HDCP-compliant displays	Yes/No	
B-6.6	Support Extended Display Identification Data – EDID and Display Data Channel – DDC data using DVI and HDMI standard	Yes/No	
B-6.7	Support horizontal and vertical bezel compensation for flat panel displays	Yes/No	
B-6.8	Impose no source window positioning restrictions, including overlay and overlap	Yes/No	
B-6.9	Allow source windows to be sized to any aspect ratio	Yes/No	
B-6.10	Should be supplied with compatible wall control software	Yes/No	
B-6.11	Control software should be able to: Operate on a PC independent of the videowall processor; Provide a graphical representation of the videowall onto which sources can be dragged and dropped to create window presets; Allow for the creation of custom rectangular screen layouts; Allow configuration of source inputs, via auto-detection, manual selection, and custom creation of capture modes for input signals; Allow assignment of outgoing RS-232 command strings to presets; Allow for the creation of source window layouts, with user control over: Source window size, Source window position, Source window layer, Source window contents, Source window border, Source window title, Source window overlay, Source zoom	Yes/No	
B-6.12	Should have minimum (01) Rs-232 for control	Yes/No	
B-6.13	Ethernet Dual 10 Base-T / 100 Base-TX / 1000 Base-T Ethernet ports	Yes/No	
B-7	<b>Signage Media Player</b>		

	<b>3M or Streme or Scala</b>	<b>Make &amp; Model Quoted:</b>	
B-7.1	Thin-client PC with Intel i3 processor, 100GB SSD, 4GB RAM, Ethernet, 3 USB, 1 VGA output, 1 DP/HDMI output	Yes/No	
B-7.2	Preinstalled Windows Embedded OS	Yes/No	
B-7.3	Signage Player License. Basic features like Image, video, ticker, ppt, date/time, rss.	Yes/No	
B-7.4	Support integration with H.264 stream playback	Yes/No	
B-7.5	Comes along with a central server license, which can centrally allow design of layouts, manager network of signage players and schedule push of content to them.	Yes/No	
B-8	<b>Cable Management Box</b>		
	<b>Extron or Crestron or AMX</b>	<b>Make &amp; Model Quoted:</b>	
B-8.1	Provide a modular, configurable, and furniture-mountable enclosure that shall support a combination of AC power modules, AV cables-VGA with audio, HDMI and RJ-45	Yes/No	
B-8.2	Provides (02) Universal AC power and (04) cable pass-through	Yes/No	
B-8.3	The cable pass-through plate shall be a single unit. The plate shall be flexible to allow the installation, removal, or replacement of cables	Yes/No	
B-8.4	Color and finish shall be decided at the time of ordering as per the instructions of Engineer In charge	Yes/No	
B-9	AC power sockets (Multi-region) as per tender specification	<b>Make &amp; Model Quoted:</b>	
	Extron or Crestron or AMX	Yes/No	
B-10	<b>Flat Panel LED Display (Type - C)</b>		
	<b>Samsung or Panasonic or LG or Sony</b>	<b>Make &amp; Model Quoted:</b>	
B-10.1	Panel: 46" super narrow bezel	Yes/No	
B-10.2	Backlit Type: Direct LED (back-lit)	Yes/No	

B-10.3	Bezel Seam: 3.5mm or lesser	Yes/No	
B-10.4	Resolution: Full HD 1920 x 1080, professional-grade display	Yes/No	
B-10.5	Brightness: 450 nits or better	Yes/No	
B-10.6	Viewing angle: 170° (H), 170° (V) or better	Yes/No	
B-10.7	Video compatibility: NTSC, PAL, SECAM	Yes/No	
B-10.8	Built in processing and scaling which allows looping to multiple displays together	Yes/No	
B-10.9	Should have minimum (01) Analog D-SUB, (01) HDMI	Yes/No	
B-10.10	Control: RS232C/RS422 (with feature of loop through for control), RJ45 port	Yes/No	
B-10.11	System setup, calibration (such as white balance, etc.) should be done with OEM's intervention	Yes/No	
B-11	<b>Flat Panel LED Display (Type - F)</b>		
	<b>Samsung or Panasonic or LG or Sony</b>	<b>Make &amp; Model Quoted:</b>	
B-11.1	Screen size: 46" diagonal or better	Yes/No	
B-11.2	Native Resolution : 1920 x 1080 or better	Yes/No	
B-11.3	Aspect Ratio: 16:9	Yes/No	
B-11.4	Brightness: 350nits or better	Yes/No	
B-11.5	Viewing angle: 178 x 178 minimum vertically and horizontally or better	Yes/No	
B-11.6	Should have minimum (01) HDMI, (01) DVI-D, (01) 15-pin HD, Audio inputs or better	Yes/No	
B-11.7	Should have (01) RS232 port, (01) RJ45 ports	Yes/No	
B-11.8	Should have built-in speaker	Yes/No	
B-11.9	Includes OEM approved wall mount kit	Yes/No	
B-12	Wall plate (Type - A)		
	<b>Extron or Crestron or AMX</b>	<b>Make &amp; Model</b>	

		<b>Quoted:</b>	
B-12.1	Should be one-gang size wall plate (mud ring included)	Yes/No	
B-12.2	Should have one HDMI female to HDMI female pigtail	Yes/No	
B-12.3	Should have one 15-pin female to 15-pin female pigtail	Yes/No	
B-12.4	Should have one 3.5 mm stereo mini jack to captive screw	Yes/No	
B-12.5	Signals passed through unprocessed	Yes/No	
B-12.6	Supports DDC transmission and HDCP compliant	Yes/No	
	<b>C- Control System</b>		
C-1	<b>Central Control processor</b>		
	<b>Crestron or Extron or AMX</b>	<b>Make &amp; Model Quoted:</b>	
C-1.1	Real-time, Multitasking Control processor	Yes/No	
C-1.2	4GB Flash Built In or better	Yes/No	
C-1.3	1 LAN port with industry standard Ethernet communications	Yes/No	
C-1.4	Built in Web server	Yes/No	
C-1.5	(12) RS-232/422/485 (bi-directional) ports or better	Yes/No	
C-1.6	8 IR/serial ports or better	Yes/No	
C-1.7	8 Low Voltage relay ports or better	Yes/No	
C-1.8	8 Versiport I/O ports or better	Yes/No	
C-1.9	SNMP Support	Yes/No	
C-1.10	Exclusive modular programming architecture	Yes/No	
C-1.11	Should include power supply	Yes/No	
C-1.12	Should be supplied with OEM approved IR emitter probe for each set-top-box (OFE)	Yes/No	

C-2	<b>Wireless Touch Panel</b>		
	<b>Apple iPad Air</b>	<b>Make &amp; Model Quoted:</b>	
C-2.1	The Touch panel shall have 9.7-inch (diagonal) LED-backlit widescreen Multi-Touch display with IPS technology	Yes/No	
C-2.2	Shall have Wi-Fi (802.11a/b/g/n/ac); dual channel (2.4GHz and 5GHz); HT80 with MIMO	Yes/No	
C-2.3	Shall support Bluetooth 4.0 technology	Yes/No	
C-2.4	Shall be supplied with the interface application for control system on it	Yes/No	
C-3	<b>Charging station for Touch panel</b>		
	<b>iPort Sleeve with Base station or Belkin</b>	<b>Make &amp; Model Quoted:</b>	
C-3.1	The charging station shall be Magnetic table mount and inductive charger	Yes/No	
C-3.2	It should include base station and sleeve cover for the touch panel	Yes/No	
C-4	<b>Control Application software</b>		
	<b>Crestron or Extron or AMX</b>	<b>Make &amp; Model Quoted:</b>	
C-4.1	Control App for Tablets directly load into the device	Yes/No	
C-4.2	Should support iOS and Android devices	Yes/No	
C-4.3	Should have page transitions and swipe gesture vertically and horizontally	Yes/No	
C-4.4	Should have unlimited project size	Yes/No	
C-4.5	Should have MPEG streaming video viewer	Yes/No	
C-5	<b>Extension of IR</b>		
	<b>Power art IR or Xantech</b>	<b>Make &amp; Model Quoted:</b>	
C-5.1	Should contain IR emitter and receiver including power supply unit	Yes/No	



C-5.2	IR modulation frequency bandwidth - 30 to 60Khz	Yes/No	
C-5.3	Should have 45 degrees off axis nominal reception angle	Yes/No	
C-5.4	Should have small form factor as it is installed behind LED monitors to control cable set top box	Yes/No	
	<b>D - Installation Hardware</b>		
D-1	<b>AV Equipment Rack (Type - A)</b>		
	<b>Val rack or W&amp;Q or APW President</b>	<b>Make &amp; Model Quoted:</b>	
D-1.1	19", 12U equipment rack 600 X 600 mm with front glass door, power distribution box, internal fans, wheels etc. complete with all accessories.	Yes/No	
D-1.2	12U high 19" Equipment Rack	Yes/No	
D-1.3	Floor standing with castor wheels & locking provision	Yes/No	
D-1.4	Fully wired with power distribution and vent to suit forced Air via Fan	Yes/No	
D-1.5	Lockable front door made of glass with provision for opening the rack from minimum 4 sides	Yes/No	
D-1.6	Vented top Cover and bottom covers with cable entry cut-outs.	Yes/No	
D-1.7	19" angle for rack mounting with provision for recessing mounting angle	Yes/No	
D-1.8	Removable side panels with slam latches	Yes/No	
D-1.9	Fans (Minimum 04 Nos.) for cooling of fully populated rack	Yes/No	
D-1.10	Door operated CFL light for rack	Yes/No	
D-1.11	Hardware kit including necessary channels for fixing, the supplied equipment inside the rack.	Yes/No	
D-1.12	Power Distribution Unit (PDU) with spike guard sufficient enough to supply AC power to all the equipment's housed inside rack. The PDU should be supplied with industrial socket.	Yes/No	
D-2	<b>Cable Accessories and Miscellaneous Items</b>		
	<b>Crestron or AMX or Extron or Belden or equivalent</b>	<b>Make &amp; Model Quoted:</b>	

	Note: The list of Cable, Accessories and miscellaneous items to be used in the project is given below, but not limited to the following, any other related items not mentioned below but required for project to be included and shall be in the scope of the Bidder/AVC	Yes/No	
D-2.1	Molded High speed HDMI cables	Yes/No	
D-2.2	Molded High speed HDMI cables (passes with cable cubby pass-through holes)	Yes/No	
D-2.3	Molded DVI cable	Yes/No	
D-2.4	Molded Dual Link DVI cable	Yes/No	
D-2.5	Molded HDMI to DVI cables	Yes/No	
D-2.6	Molded 15pinHD with audio to 15pin HD with audio cables	Yes/No	
D-2.7	Molded adaptors	Yes/No	
D-2.8	Speaker cable, control cable, microphone cable, power cable, PVC conduits, Raceways, bulk cables and connectors as per site condition and requirement	Yes/No	
D-2.8	Every Installed Cable to carry a Label, and should be marked in the as built drawings	Yes/No	
D-2.8	Cables to be dressed properly with the use of appropriate cable management accessories and components	Yes/No	
D-2.8	Supply and Laying of Standard Unshielded CAT 6 Pure Copper of 23 AWG or better Cables being used for Audio Visual purpose exclusively, shall be in the scope of Audio Visual integration.	Yes/No	
D-2.8	A detailed cabling plan to be submitted to Engineer In charge/Consultant before starting the execution for verification	Yes/No	
D-2.8	A Final As Built Drawing to be submitted as a part of deliverable after successful commissioning of the project	Yes/No	
D-3	<b>Custom VC camera mount</b>		
	<b>Custom by AV Contractor</b>	<b>Make &amp; Model Quoted:</b>	
D-3.1	Should be wall mounted shelf made of glass/wood/equivalent material	Yes/No	
D-3.2	Should be able to hold the weight of the VC camera	Yes/No	

D-3.3	The Color, Size, Shape shall be decided at the time of ordering as per the instructions of Engineer In charge	Yes/No	
D-4	<b>Custom Video wall (2x3) mount kit</b>		
	<b>Custom by AV Contractor</b>	<b>Make &amp; Model Quoted:</b>	
D-4.1	Should be universal designed mount for video wall screen which can hold up to 100kg weight	Yes/No	
D-4.2	Should be landscape screen mounting	Yes/No	
D-4.3	Should have adjustable height, extension and minimum 4" depth	Yes/No	
D-4.4	The Color, Size, Shape shall be decided at the time of ordering as per the instructions of Engineer In charge	Yes/No	

**Note: The bidder/OEM has to give compliance for the TEC specifications for above mentioned items, offered in this bid.**



• **Summary of Items / Consolidated list of equipment and overall quantity**

Sr. No	Specification Ref No (from Volume III)	Item	Unit	Qty
<b>A - Audio System</b>				
1	A-1	SITC of Ceiling Loudspeaker as per tender specification	EA	6
2	A-2	SITC Power Amplifier as per tender specification	EA	1
3	A-3	SITC of Digital Audio Signal Processor as per tender specification	EA	1
4	A-4	SITC of Table boundary microphone as per tender specification	EA	9
<b>B - Video System</b>				
1	B - 1	SITC of Fixed projection screen (Type - A) as per tender specification	EA	1
2	B - 2	SITC of Projector (Type - A) as per tender specification	EA	1
3	B - 3	SITC of Video presentation switcher (Type - A) as per tender specification	EA	1
4	B - 4	SITC of Video presentation switcher (Type - B) as per tender specification	EA	1
5	B - 6	SITC of Video wall processor as per tender specification	EA	2
6	B - 7	SITC of Signage player as per tender specification	EA	1
7	B - 7	SITC of Signage player license as per tender specification	EA	1
8	B - 8	SITC of Cable management box as per tender specification	EA	7
9	B - 8	SITC of AC power sockets (Multi-region) as per tender specification	EA	7
10	B - 9	SITC of Flat Panel LED Display (Type - C) as per tender specification	EA	12
11	B - 10	SITC of Flat Panel LED Display (Type - F) as per tender specification	EA	3
13	B - 11	SITC of Passive Wall Plate as per tender specification	EA	6

<b>C - Control System</b>				
1	C-1	SITC of Central Control processor as per tender specification	EA	1
2	C-2	SITC of Wireless Touch Panel as per tender specification	EA	1
3	C-3	SITC of Charging station for Touch panel as per tender specification	EA	1
4	C-4	SITC of Control Application software as per tender specification	EA	1
5	C-5	SITC of Extension of IR as per tender specification	EA	5
<b>D - Installation Hardware</b>				
1	D-1	SITC of AV equipment rack (Type - A) as per tender specification	EA	4
2	D-2	SITC of Cable Accessories and Miscellaneous Items as per tender specification	LOT	1
3	D-2.1	SITC of 3' HDMI cable as per tender specification as per tender specification	EA	6
4	D-2.1	SITC of 6' HDMI cable as per tender specification	EA	3
5	D-2.1	SITC of 10' HDMI cable as per tender specification	EA	5
6	D-2.1	SITC of 15' HDMI cable as per tender specification	EA	1
7	D-2.1	SITC of 25' HDMI cable as per tender specification	EA	5
8	D-2.1	SITC of 50' HDMI cable as per tender specification	EA	4
9	D-2.2	SITC of 6' HDMI cable for cable cubby as per tender specification	EA	2
10	D-2.3	SITC of 25' DVI-D cable as per tender specification	EA	12
11	D-2.4	SITC of 75' Long Dual link DVI-D cable as per tender specification	EA	12
12	D-2.5	SITC of 6' HDMI to DVI cable as per tender specification	EA	1
13	D-2.6	SITC of 6' VGA A as per tender specification	EA	5
14	D-2.6	SITC of 10' VGA A cable as per tender specification	EA	5
15	D-2.6	SITC of 25' VGA A cable as per tender specification	EA	4
16	D-2.6	SITC of 50' VGA A cable as per tender specification	EA	2



17	D-2.7	SITC of DisplayPort male to DVI female active adapter as per tender specification	EA	12
18	D-2.7	SITC of DisplayPort male to HDMI female adapter Cable as per tender specification	EA	1
19	D-2.8	SITC of Bulk connectors & cables as per tender specification	LOT	1
20	D-3	SITC of Custom VC camera mount as per tender specification	EA	1
21	D-4	SITC of Custom Video wall (2x3) mount kit as per tender specification	EA	2
<b>E - Owner Furnished Equipment</b>				
1		<i>ITC Wireless access point as per tender specification</i>	<i>EA</i>	<i>1</i>
2		<i>ITC Client PC with Display port output as per tender specification</i>	<i>EA</i>	<i>12</i>
3		<i>ITC Cable TV Set Top Box with HDMI output as per tender specification</i>	<i>EA</i>	<i>5</i>
4		<i>Video conferencing codec</i>	<i>EA</i>	<i>1</i>
5		<i>ITC of Multi-site / multi-party call feature with 1+3 or better as per tender specification</i>	<i>EA</i>	<i>1</i>
6		<i>ITC of Breakout cable / adapter for VC camera as per tender specification</i>	<i>EA</i>	<i>1</i>
	Date			
	Place			



**Q&A TEMPLATE**

**(Question & Answers Schedule)**  
**(Appendix of AV Bid Package)**

<b>Item #</b>	<b>Date</b>	<b>Question</b>	<b>Reply / Direction</b>	<b>Status</b>
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

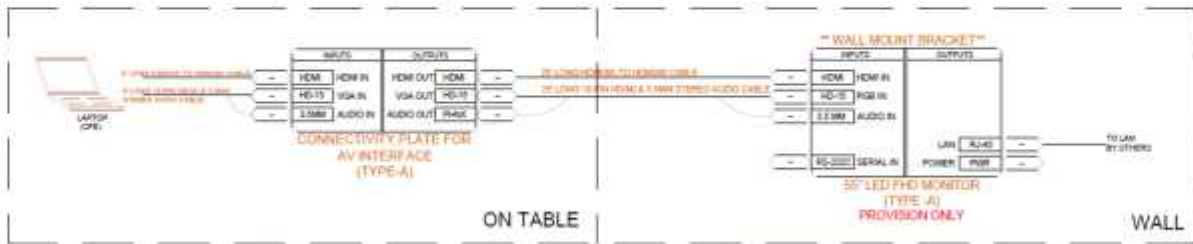


- **EQUIPMENT LAYOUT FOR AUDIO VISUAL WORKS**

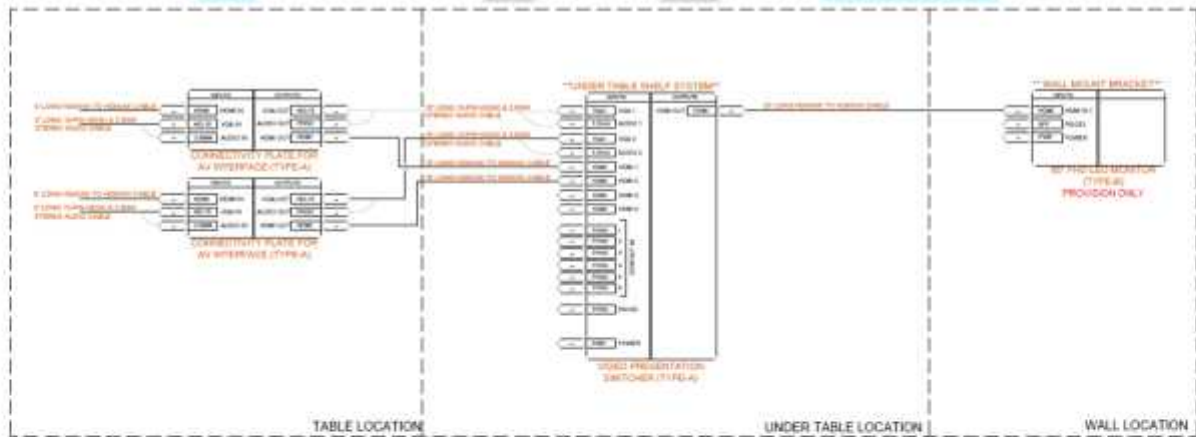


• **SIGNAL LINE DIAGRAM FOR AUDIO VISUAL DIAGRAM**

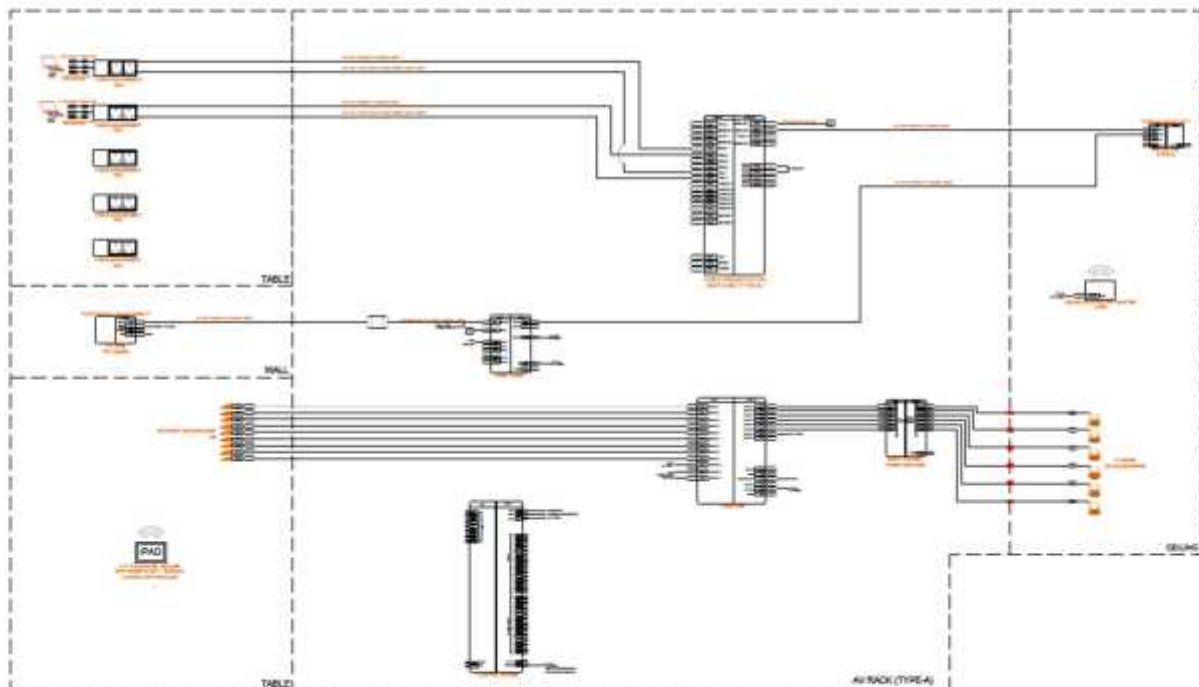
➤ **8 PAX Meeting Room**



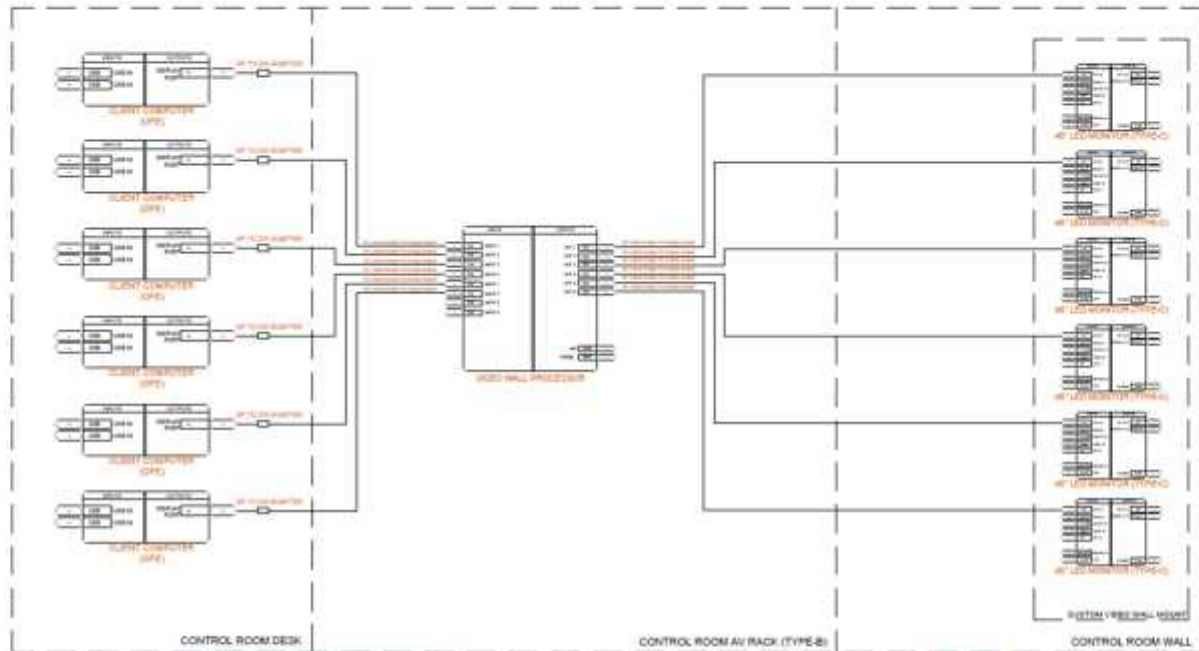
➤ **12 PAX Meeting Room**



➤ **Video Conference Room**



➤ **CNOC Room**



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END

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