TENDER ENQUIRY
ID: 2021_NISD_654960_1

CORRIGENDUM

SETTING UP OF BROADCAST STUDIO AT NISD

December, 2021

Reference File No. 44660 - NISD-66/2/2021-NISD
Subject: Setup of Audio Visual Media Center in NISD

KIND ATTENTION

Following the Pre-Bid Meeting, changes have been made in the following Tender Clauses. The same are tabulated below giving the Existing and the Revised clauses. The Annexures have also been revised accordingly.

The Revised Tender Document is also enclosed.

The Bidders are requested to use the Revised Annexures provided in the Revised Tender Document.

Sl. No.	Description	Pg. No.
1.	**Clauses Revised in the Tender Enquiry**	3
2.	**Revised Tender Enquiry along with updated Annexures**	9

Clauses Revised in the Tender Enquiry

Sl. No.	Existing Clause	Revised Clause
1.	10. Bidder would have to submit an Earnest money deposit of Rs. 5 lakhs (Rs. Five lakhs only). No interest will be paid on the Earnest money deposit. Bids without Earnest money deposit would be rejected. Submission of Earnest Money Deposit should be done through Bank transfer.	10. The Bidder should submit the Bid Security Declaration as per the Proforma given at Annexure -IX.
2	13 C. Certificate from the Original Equipment Manufacturer (OEM) for offering each of the equipment in the bid to NISD and for supporting the equipment for a period of not less than 5 years including two years warranty from the date of commissioning/acceptance of the equipment	13 C. Certificate from the Original Equipment Manufacturer (OEM) for offering key equipment in the bid to NISD and for supporting the equipment for a period of not less than 5 years including two years warranty from the date of commissioning/acceptance of the equipment OEM certificate to be given for the following key equipment – Cameras (items 1,2,3), Teleprompter (item 6), Video Switcher (item 8), Display panels (items 9,10,11), 3D virtual studio (item 13), Video recorded and player (item 16), Digital Signal Processor (item 19), Professional SSD based Digital video recorder (item 34) Studio lights and Dimmer control (items 35,36,37) Enterprise NAS with 48 TB storage (item 38).
3.	16. A security deposit at 10% of the value of purchase order shall be obtained from the successful bidder /supplier in the form of a Bank Guarantee for equivalent amount as a guarantee for satisfactory performance of contract. The security deposit shall be refundable on satisfactory completion of contract and on the expiry of stipulated warranty period of equipment which would be a minimum period of 24 months from the date of commissioning and acceptance of the equipment. If the tenderer is not able to	16. A security deposit at **3%** of the value of purchase order shall be obtained from the successful bidder /supplier in the form of a Bank Guarantee for equivalent amount as a guarantee for satisfactory performance of contract. The security deposit shall be refundable on satisfactory completion of contract and on the expiry of stipulated warranty period of equipment which would be a minimum period of 24 months from the date of commissioning and acceptance of the equipment. If the tenderer is not able to supply against

	supply against the purchase order, the security deposit will be forfeited.	the purchase order, the security deposit will be forfeited.
4.	28. The Studio should be installed, tested and commissioned within a period of 3 months from the deal of purchase order. Delivery and Commissioning of suppliers within time and date stipulated shall be essence of the contract. If the Supplier fails to do this with in the period specified in the award of contract, the Purchaser shall, without prejudice to its other remedies under the contract, deduct liquidated damages from the Contract Price not by way of penalty. Recovery from the supplier as agreed liquidated damages will be calculated @ 1 percent of the price of the total project delayed for each month of delay or part thereof, until actual successful commissioning of the network system up to a maximum deduction of 10 percent of the cost of contract price.	28. The Studio should be installed, tested and commissioned within a period of **4 months** from the deal of purchase order. Delivery and Commissioning of suppliers within time and date stipulated shall be essence of the contract. If the Supplier fails to do this with in the period specified in the award of contract, the Purchaser shall, without prejudice to its other remedies under the contract, deduct liquidated damages from the Contract Price not by way of penalty. Recovery from the supplier as agreed liquidated damages will be calculated @ 1 percent of the price of the total project delayed for each month of delay or part thereof, until actual successful commissioning of the network system up to a maximum deduction of 10 percent of the cost of contract price.
5.	**42.** 10% would be retained if the security deposit is not submitted	42 . **3%** would be retained if the security deposit is not submitted
6.	**Additional Clause No. 48**	48. The Bidder should have Office /Service Centre in Delhi /NCR . Address and contact details to be provided with documentary proof
7.	**Additional Clause No. 49**	49. The Bidder should provide complete workflow / Schematic Diagram of the Broadcast Studio Equipment.
	ANNEXURE-I & ANNEXURE-V	
	1. SITC OF BROADCAST QUALITY 1" 4K CAMCORDER FOR OUTDOOR AND INDOOR	
8.	**1. Camera** Image sensor- 1" MOS/ CMOS Single chip Image Sensor	**1. Camera** Image sensor- 1" MOS/ CMOS Single chip Image Sensor or ½ Three CMOS or better Sensors

9.	**8. SITC OF DIGITAL VIDEO PRODUCTION SWITCHER FOR TV STUDIO**	
	1. Inputs Minimum 10 X 3G/HD/SD-SDI inputs, or more which should have at least 1 HDMI Input	1. Inputs Minimum 10 or more inputs 3G/HD/SD-SDI, HDMI and NDI Inputs in combination. Compatible to the supplied cameras.
	6. Signal Processing Standards SD - 480i/59.94 - 4:3 and 16:9 | 576i/50 - 4:3 and 16:9, HD - 720p 50/59.94, 1080i 50/59.94 | 1080pSF, 23.98/25/29.97	6. Signal Processing Standards SD - 480i/59.94 - 4:3 and 16:9 | 576i/50 - 4:3 and 16:9, HD - 720p 50/59.94, 1080i 50/59.94 | 1080pSF, 23.98/25/29.97, 3G-1080P 50/59.94
	7. Hardware Control Panel All in one electronic & hardware control panel surface or hardware control panel with separate	7. Hardware Control Panel All in one electronic & hardware control panel surface or hardware control panel with separate main frame.
	16. Custom Macros	Deleted
	17. Talles	Deleted
	18. GPI/O	Deleted
	21. Additional Item	21. External I/O Bidder can quote external Input and Output converters, Expansion Cards etc. along with the system which should be compatible with camera and other source outputs/ controls and to complete workflow.
10.	**9. SITC OF 49" LED DISPLAY PANEL FOR PCR MULTIVIEW**	
	6. Inputs Min HDMI x 1 D SUB/VGA 15 Pinx1USB ×1 Or better	6. Inputs Min HDMI x 2 AV X 1 USB ×1 Or better
11.	**10. SITC OF 55" LED DISPLAY PANEL FOR STUDIO FOLDBACK**	
	6.Inputs Min HDMI x 1 D SUB/VGA 15 Pinx1USB ×1 Or better	6.Inputs Min HDMI x 2 AV X 1 USB ×1 Or better

12.	**11. SITC OF FULL HD INTERACTIVE DISPLAY PANEL**	
	15. Slots Should have slot to directly integrate PC in the Interactive Display Should be quoted with PC mountable on Interactive Display with Min i3 Processor, 4GB RAM, 250GB	15. Slots Should have slot to directly integrate PC in the Interactive Display Should be quoted with PC mountable on Interactive Display with Min i3 Processor, 4GB RAM, 250GB, HDD or Better
13.	**13. SITC OF TRACKLESS 3D VIRTUAL STUDIO SYSTEM**	
	Approved Makes: Monarch, Datavideo, Wasp 3D, BEIT	**Approved Makes: Monarch, Datavideo, Wasp 3D, BEIT, New Tek**
14.	**16. SITC OF VIDEO RECORDER AND PLAYER**	
	3. Inputs SDI, HDMI, Analog Audio (Balanced), AES	3. Inputs SDI, HDMI, Analog Audio (Balanced)
	4. Outputs SDI, HDMI, Analog Audio (Balanced), AES	4. Outputs SDI, HDMI, Analog Audio (Balanced)
15.	**19. SITC OF DIGITAL SIGNAL PROCESSOR**	
	7. Mic/Line Inputs Nominal gain 0dB, electronically switchable up to +48dB,in	7. Mic/Line Inputs Nominal gain 0dB, electronically switchable up to +48dB,in +6db steps
16.	**28. SITC OF PROFESSIONAL HEADPHONE**	
	6. Audio Interface Type Stereo plug: 3.5mm (1/8") with 6.3 mm (1/4″) screw-on	6. Audio Interface Type Stereo plug: 3.5mm (1/8") with 6.3 mm (1/4″) screw-on adaptor.
17.	**35. SITC OF 100 WATTS LED COOL LIGHTS FOR STUDIO**	
	1.Type 90W LED light 3200K, 5600K panel complete with 4 leaf barn door, 2 diffusers, normal operated yoke provided.	1.Type 100W LED bicolor light having temperature range 3000k to 6000k complete with 4 leaf barndoor, diffusers, normal operated yoke to be provided.
	2. Lamp power 90 W or better	2. Lamp power 100 W or better
	3. Color Temperature 3200K / 5600K	3. Color Temperature 3000K / 6000K
	4. Dimming 0-100% through manual and DMX	4. Dimming 0-100% dimming through manual and DMX
	6. Beam Angle 30°	6. Beam Angle 110°

18.	**36. SITC OF 200 WATTS LED FRESNEL SPOT LIGHT FOR STUDIO**	
	1. Type 200 W LED light with color temperature 3200K/5600K panel complete with 4 leaf barndoor, normal operated yoke, Ceiling mounted, integrated dimmer enabled instant dimming from 0 to 100%.	1. Type 200 W LED light with color temperature 3200K/5600K panel complete with 4 leaf barndoor, normal operated yoke, Ceiling mounted, integrated dimmer enabled instant dimming from 0 to 100%. Colour Converntion Filter from Day Light to Tungsten.
19.	**40. SITC OF WORKSTATION FOR VIDEO EDITING**	
	Approved Makes: APPLE	
	1. Size 27-inch (diagonal) Retina 5K display	1. Peripherals 27-inch 4K LED display, Key board and Mouse
	2. Processor 3.0GHz 10-core Intel Xeon W processor	2. Processor 3.5GHz 8-core Intel Xeon W processor Turbo Boost upto 4 GHz (Mac Pro)
	3. RAM 32GB 2666MHz ECC memory	3. RAM 32GB
	4. Storage 1TB SSD	4. Storage 1TB SSD, 2TB Internal or External Drive
	5. Graphics Card 8GB Radeon Pro	5. Graphics Card 8GB Radeon Pro or Better
	6. Ports 4x Thunderbolt Ports	6. Ports 4x Thunderbolt Ports
	7. I/O Card BMD Ultra Studio HD mini	7. I/O Card Deck-Link SDI 4K
	8. Software Final Cut Pro	8. Software Final Cut Pro (Latest Version) Adobe CCT Package (3 years Subscription)
20.	**44. SYSTEM INSTALLATION MATERIAL AND CHARGES**	
	3. System Completeness Completeness of the system will be responsibility of the bidder. Any hardware and/or software including passive and active devices required for completeness of the technical workflow shall be quoted.	3. System Completeness Completeness of the system will be responsibility of the bidder. Any hardware and/or software including passive and active devices required for completeness of the technical workflow shall be quoted. Bidder shall be responsible for technical and

		Bidder shall be responsible for technical and operational completeness of the entire system.	operational completeness of the entire system. Bidder can quote external Input and Output converters, Expansion Cards etc. along with the system which should be compatible with camera and other source outputs/ controls and to complete workflow.
21.		**ANNEXURE -II**	Please see the revised version
22.		**ANNEXURE -IV**	
		13. TRACKLESS 3D VIRTUAL STUDIO SYSTEM Monarch, Datavideo, Wasp 3D, BEIT	13. TRACKLESS 3D VIRTUAL STUDIO SYSTEM Monarch, Datavideo, Wasp 3D, BEIT, NewTek
23.		**ANNEXURE -V**	
		Additional Item: 6	6.The Bidder should have Office /Service Centre in Delhi /NCR . Address and contact details to be provided with documentary proof
		Additional Item: 7	7. The Bidder should provide complete workflow / Schematic Diagram of the Broadcast Studio Equipment.

REVISED TENDER ENQUIRY

SETTING UP OF BROADCAST STUDIO AT NISD

December, 2021

Reference File No. 44660- NISD-66/2/2021-NISD
Subject: Setup of Audio Visual Media Center in NISD

NATIONAL INSTITUTE OF SOCIAL DEFENCE (NISD), Ministry of Social Justice &
Empowerment
Plot No. G-2, Sector-10, Dwarka, New Delhi 110075

NATIONAL INSTITUTE OF SOCIAL DEFENCE (NISD)
Ministry of Social Justice & Empowerment
Plot No. G-2, Sector-10, Dwarka, New Delhi 110075

Tender for setting up of Broadcast studio at NISD

Table of Content

Notice Inviting Tender

Sealed tenders are invited from reputed manufacturers / their authorized Indian representatives for setting up of Broadcast studio on turnkey basis at NISD, including purchase of Audio/ Video equipment/ Acoustic work on supply, installation, testing and commissioning basis.

Critical Dates:

S.No.	Activity	Date & Time
1	Publishing Date	29.10.2021
2	Document Download Start Date	29.10.2021
3	Seek Clarification Start Date	29.10.2021
4	Seek Clarification End Date	08.11.2021
5	Pre Bid Meeting Date at NISD	11.11.2021(11:00 hrs.)
6	Bid Submission Start Date	03.12.2021(11:00 hrs.)
7	Bid Submission Closing Date	15.12.2021 (15:00 hrs.)
8	Technical Bid Opening date	16.12.2021 (15:00 hrs.)

The tenders received after the due date and time will not be accepted. NISD reserves the right to accept or reject any tender, fully or partially without assigning any reason whatsoever.

TENDER TERMS AND CONDITIONS

G E N E R A L

1. The tender is for setting up of a Broadcast studio at NISD on turnkey basis. It would include supply, installation, testing and commissioning of Studio equipment (audio and video) and the room acoustic works.

2. This Invitation is open only to the manufacturers (OEM) & their authorized representatives having experience in Broadcast Television System in Supply, Integration, Installation, Testing, and Commissioning of equipment mentioned in the list and providing after sales service/AMC for the equipment.

3. The list of the studio equipment along with the technical specifications and the quantity required is at Annexure –I

4. The details of the acoustic work for the studio is at Annexure II

ELIGIBILITY CONDITIONS

5. The bidder should be a company registered in India

6. The bidder should be either the manufacturer (OEM) and/or the authorized representative for supply and maintenance of all the studio equipment mentioned in Annexure-I

7. The bidder should have experience in setting up of Broadcast studios. This would include – (i) Supply, Integration, Installation, Testing, Commissioning of equipment mentioned in Annexure-I and providing after sales service/AMC for the equipment and (ii) Preparing the studio and control room including the acoustic work

8. The bidder should have setup/commissioned at least two broadcast studios in the last five financial years (2016-2021) anywhere in India, where the value of the purchase order should not be less than Rs. 1 Cr (Rs. One crore) each. Proof of the same including copies of purchase order, completion certificate and details of contact person to be provided.

9. The annual turnover of the bidder company should not be less than Rs. 2Cr   (Rs. Two Crore) per year for any three financial years during the previous five financial years (2016-2021). Proof of the same to be provided.

Earnest Money Deposit

10. The Bidder should submit the Bid Security Declaration as per the Proforma given at **Annexure -IX.**

Submission of Bids

11. The bid should be submitted in two parts. Part I – Technical bid and Part II – Commercial bid.

12. All the pages in the two parts of the bid should be separately numbered serially. A table of contents clearly indicating the page numbers should be there.

13. Part I- Technical bid should contain the following:

   a. Bidder details as per the format prescribed at Annexure III
   b. Make, model number, technical specifications, product features, detailed literature, brochures, etc. pertaining to the equipment quoted. Make and model No. of the equipment quoted should be provided in the format prescribed at Annexure – IV.
   c. Certificate from the Original Equipment Manufacturer (OEM) for offering key equipment in the bid to NISD and for supporting the equipment for a period of not less than 5 years including two years warranty from the date of commissioning/acceptance of the equipment.   OEM certificate to be given for the following key equipment – Cameras (items 1,2,3), Teleprompter (item 6), Video Switcher (item 8), Display panels (items 9,10,11), 3D virtual studio (item 13), Video recorded and player (item 16), Digital Signal Processor (item 19), Professional SSD based Digital video recorder (item 34) Studio lights and Dimmer control (items 35,36,37) Enterprise NAS with 48 TB storage (item 38).
   d. Compliance statement in the format prescribed at Annexure-V
   e. Check list as per the format prescribed at Annexure-VI
   f. Proof of depositing Earnest money deposit of Rs. 5 lakhs (Rs. Five lakhs only) Transaction receipt or screenshot.
   g. Declaration as per the format prescribed at Annexure-VII

14.   Part II – commercial bid should contain the price details of the equipment and services quoted in the format prescribed at Annexure-VIII. The price quoted should be in Indian Rupees (INR) and include all duties, levies and charges. The price should be quoted in both figures and words. In the case any discrepancy, the figures in words would be taken.

Other Terms and Conditions

15. The offer should be valid for a minimum period of Six months from the date of Opening of the tender.

16. A security deposit at 3% of the value of purchase order shall be obtained from the successful bidder /supplier in the form of a Bank Guarantee for equivalent amount as a guarantee for satisfactory performance of contract. The security deposit shall be refundable on satisfactory completion of contract and on the expiry of stipulated warranty period of equipment which would be a minimum period of 24 months from the date of commissioning and acceptance of the equipment. If the tenderer is not able to supply against the purchase order, the security deposit will be forfeited.

17. All essential items including cables, connectors, etc, needed for complete installation and for the smooth operation of the equipment shall be assumed to have been included in the quoted prices/items if these have not been quoted separately.

18. The tenderer should provide warranty/Guarantee for quoted product for a Period of two years from the date of commissioning and acceptance of the equipment. The tenderer should also give an undertaking that during warranty period, if any defect in the supplied equipment is noticed by the Purchaser, the supplier or his representative shall rectify the defect or replace the defective item free of cost at the Purchaser's site within a period of 30 days of his notification.

19. The tenderer should maintain all the equipment supplied for a period of three years after warranty. The charges for comprehensive Annual Maintenance Contract (AMC) for the same (including spares) should be quoted. However, it would be at the discretion of NISD to offer AMC.

20. Operation and maintenance manuals both Hard & Soft Copy and necessary extension boards should be supplied with the equipment

21. Charges on account of installation, commissioning and user training, if any, should be quoted separately.

22. In the list of equipment at Annexure-I, make and model number, if any, has been indicated for illustration/reference only. Any equivalent / better make/model with similar functions and operations would also be considered

23. NISD reserve the right to purchase varying quantity of material, less or more than the quantity specified in the tender

24. Original copy of the software associated with all the equipment should be supplied in DVD/Pen drive

25. Adequate training on the features and use of the equipment should be provided to the NISD staff at NISD

26. Only one Bid could be submitted by one Bidder.

27. NISD reserves to itself the right of accepting the whole or any part of the offer and the tenderer shall be bound to perform the same at his quoted rates.

28. The Studio should be installed, tested and commissioned within a period of **4 months** from the deal of purchase order. Delivery and Commissioning of suppliers within time and date stipulated shall be essence of the contract. If the Supplier fails to do this with in the period specified in the award of contract, the Purchaser shall, without prejudice to its other remedies under the contract, deduct liquidated damages from the Contract Price not by way of penalty. Recovery from the supplier as agreed liquidated damages will be calculated @ 1 percent of the price of the total project delayed for each month of delay or part thereof, until actual successful commissioning of the network system up to a maximum deduction of 10 percent of the cost of contract price.

29. The Contract shall be interpreted, construed and governed by the laws of India. In case of any disputes, the same will be under jurisdiction of courts in Delhi/New Delhi Only.

30. Any other guideline/ restrictions/ stipulations from Govt. of India regarding supply of equipment from non-trusted sources, if any, would be applicable.

31. If there is any discrepancy or ambiguity regarding the make/ model no. Mentioned in the technical bid **(Annexure-IV & V)** and the financial bid **(Annexure-VIII),** the bid is likely to be rejected.

32. All information as per the prescribed annexures should be mandatorily provided.

Evaluation of Bids

33. The technical bids of eligible bidders and the bidders who have fulfilled other terms and conditions like submission of EMD, would be evaluated by NISD

34. Mere fulfilling the technical requirements will not be sufficient for technical shortlisting/ qualification.

35. As a part of technical evaluation, the bidders may be asked to demonstrate the features of the equipment quoted, at NISD. No charges would be paid for the same.

36. The financial bids of the technically shortlisted/ qualified bidders would only be opened on the date and time that would be intimated to the technically shortlisted/ qualified bidders.

37. The financial bids of the bidders who do not qualify technically will not be opened.

38. The total cost of setting up and maintenance of the studio including cost of the equipment, installation, training, acoustic work, AMC for three years and any other

charges would be used for financial evaluation. However, while placing the order NISD reserves the right to vary the quantity of the equipment and also not order certain equipment.

39. NISD reserves the right to reject any bid without assigning any reason.

Payment Terms

40. 25% of the equipment cost would be paid after supply of the equipment
41. Remaining payment would be released after successful commissioning and acceptance of the equipment.
42. 3% would be retained if the security deposit is not submitted

Fraud and Corrupt Practices

43. The Bidders and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Selection Process. Notwithstanding anything to the contrary contained in this Tender, NISD shall reject a Proposal without being liable in any manner whatsoever to the Bidder, if it determines that the Bidder has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "Prohibited Practices") in the Selection Process. In such an event, NISD shall, without prejudice to its any other rights or remedies, forfeit and appropriate the EMD or PBG, as the case may be, as mutually agreed genuine pre-estimated compensation and damages payable to NISD for, inter alia, time, cost and effort of NISD, in regard to the RFP/ Tender, including consideration and evaluation of such Bidder's Proposal.

44. Without prejudice to the rights of NISD under Clause above and the rights and remedies which NISD may have under the LOI or the Agreement, if a Bidder is found by NISD to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Selection Process, or after the issue of the LOI or the execution of the Agreement, such Bidder shall not be eligible to participate in any tender or RFP issued by NISD during a period of 3 years from the date such Bidder is found by NISD to have directly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as the case may be. For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:

a. **"Corrupt Practice"** means the offering, giving, receiving, or soliciting, directly or Indirectly, of anything of value to influence the action of any person connected with the Selection Process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of NISD who is or has been associated in any manner, directly or indirectly with the Selection Process or the LOI or has dealt with matters concerning the Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of NISD, shall be deemed to constitute influencing the actions of a person connected with the Selection Process);

   i. or Save as provided herein, engaging in any manner whatsoever, whether during the Selection Process or after the issue of the LOA or after the execution of the Agreement, as the case may be, any person in respect of any matter relating to the Project or the Award or the Agreement, who at any time has been or is a legal, financial or technical consultant/adviser of NISD in relation to any matter concerning the Project;

b. **"Fraudulent Practice"** means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Selection Process.

c. **"Coercive Practice"** means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person's participation or action in the Selection Process;

d. **"Undesirable Practice"** means Establishing contact with any person connected with or employed or engaged by NISD with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Selection Process; or Having a Conflict of Interest; and

e. **"Restrictive Practice"** means forming a cartel or arriving at any understanding or arrangement among Bidders with the objective of restricting or manipulating a full and fair competition in the Selection Process.

Conflict of Interest

45. A Bidder shall not have a conflict of interest that may affect the Selection Process or the Solution delivery (the "Conflict of Interest"). Any Bidder found to have a Conflict of Interest shall be disqualified. In the event of disqualification,

NISD shall forfeit and appropriate the EMD, if available, as mutually agreed genuine pre-estimated compensation and damages payable to NISD for, inter alia, the time, cost and effort of NISD including consideration of such Bidder's Proposal, without prejudice to any other right or remedy that may be available to NISD hereunder or otherwise.

46. NISD requires that the bidder provides solutions which at all times hold NISD's interests paramount, avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The bidder shall not accept or engage in any assignment that would be in conflict with its prior or current obligations to other clients, or that may place it in a position of not being able to carry out the assignment in the best interests of NISD.

47. Without limiting the generality of the above, Bidder shall be deemed to have a Conflict of Interest affecting the Selection Process, if:

I. the Bidder, its consortium member (the "Member") or Associates (or any constituent thereof) and any other Bidder, its consortium member or Associate (or any constituent thereof) have common controlling shareholders or other ownership interest; provided that this disqualification shall not apply in cases where the direct or indirect shareholding or ownership interest of an Bidder, its Member or Associate (or any shareholder thereof having a shareholding of more than 5 per cent of the paid up and subscribed share capital of such Bidder, Member or Associate, as the case may be) in the other Bidder, its consortium member or Associate is less than 5% (five per cent) of the subscribed and paid up equity share capital thereof. For the purposes of this Clause, indirect shareholding held through one or more intermediate persons shall be computed as follows:

- where any intermediary controlled by a person through management control or otherwise, the entire shareholding held by such controlled intermediary in any other person (the "Subject Person") shall be taken into account for computing the shareholding of such controlling person in the Subject Person; where a person does not exercise control over an intermediary, which has shareholding in the Subject Person, the computation of indirect shareholding of such person in the Subject Person shall be undertaken on

- a proportionate basis; provided, however, that no such shareholding shall be reckoned under this Sub-clause if the shareholding of such person in the intermediary is less than 26% (twenty six per cent) of the subscribed and paid up equity shareholding of such intermediary; or

II.   A constituent of such Bidder is also a constituent of another Bidder; or

III.   Such Bidder or its Associate receives or has received any direct or indirect subsidy or grant from any other Bidder or its Associate; or

IV.   Such Bidder has the same legal representative for purposes of this Application as any other Bidder; or

V.   Such Bidder has a relationship with another Bidder, directly or through common third parties, that puts them in a position to have access to each other's' information about, or to influence the Application of either or each of the other Bidder; or

VI.   There is a conflict among this and other Systems Implementation/Turnkey solution assignments of the Bidder (including its personnel and other members, if any) and any subsidiaries or entities controlled by such Bidder or having common controlling shareholders. The duties of the bidder will depend on the circumstances of each case. While providing software implementation and related solutions to NISD for this particular assignment, the bidder shall not take up any assignment that by its nature will result in conflict with the present assignment; or

VII.   A firm hired to provide System Integration/Turnkey solutions for the implementation of a project, and its Members or Associates, will be disqualified from subsequently providing goods or works or services related to the same project;

48.   The Bidder should have Office /Service Centre in Delhi /NCR . Address and contact details to be provided with documentary proof .

49.   The Bidder should provide complete workflow / Schematic Diagram of the Broadcast Studio Equipment.

******End of Document*********

SPECIFICATION AND QUANTITY OF BROADCAST STUDIO EQUIPMENT FOR NISD

S.No.	FEATURES	SPECIFICATIONS	QTY
1.	SITC OF BROADCAST QUALITY 1" 4K CAMCORDER FOR OUTDOOR AND INDOOR SHOOT		1
	Approved Makes: Sony, Panasonic, Canon		
	Camera		
1	Image sensor	1" MOS/ CMOS Single chip Image Sensor or ½ Three CMOS or Better Sensors.	
2	Effective Pixels per Sensor	15 Megapixel or more	
3	Lens	The camcorder should have integrated Zoom Lens with Optical Zoom ratio of 17X or better with manual three rings for control of zoom, iris and focus and Min 10x Digital Zoom	
4	Optical System	F1.6 prism system	
5	Neutral Density filter	Clear, 1/4, 1/16, 1/64	
6	Optical Image stabilizer	Required	
7	Sensitivity	F12 or better on (2000 lx, 3200 K, 89.9 reflect	
8	Horizontal Resolution	2,000 TV lines or more (3840 x2160p mode) or better 1,000 TV lines or more (1920 x1080p mode) or better	
9	Shutter Speed:	1/25 sec to 1/10,000 sec or better	
10	Monitor/Viewfinder	3.5" type TFTLCD color monitor and 0.39 type OLED Viewfinder	
11	Essential Features	It should have slow and fast motion recording and reproduction facility.	
12	Essential Features	The camcorder should also have 3.5" or larger articulating LCD color monitor	
13	Video / Audio Output	The camcorder should have HD-SDI output, HDMI out and microphone/line input on XLR. Besides, it should also have USB port.	

14	Memory card Slots	The camcorder should be able to record on memory cards. It should have at least two memory card slots which should enable relay recording/ simultaneous or backup recording for enhanced reliability.	
15	Preferred Shutter Speed at 50i/ 50p mode (Sec.)	1/50 to 1/2000 or better	
16	Gain Selections	Variable from 0 dB to + 18 dB or better in steps	
17	White Balance	Auto I Preset /Variable	
18	Signal to Noise Ratio	60 dB or better	
	ZOOM LENS:		
24	Optical Zoom Ratio	17X or better	
25	Maximum Aperture	F2.8 or better	

26	Recording format	UHD (3840 x 2160) : HEVC Long GOP 150 Mbps (4:2:0) with MOV wrapper and MPEG-4 AVC/ H.264 Long GOP 150 Mbps (4:2:2) with MOV wrapper or XAVC - L QFHD MPEG-4 AVC / H.264 150 Mbps with MXF wrapper or MPEG-4 AVC / H.264 150 Mbps with QuickTime wrapper HD (1920 x 1080): MPEG-4 AVC / H.264 Long GOP 50 Mbps (4:2:2) with MOV wrapper or XAVC - L HD MPEG-4 AVC/ H.264 50 Mbps and MPEGHD422 50 Mbps with MXF wrapper or MPEG-4 AVC / H.264 50 Mbps and MPEG-2 Long GOP with QuickTime wrapper	

	Video/Audio Recording		
27	Recording Media	SXS/SDHC/SDXC/ Micro P2 Memory card	
28	Recording resolution	3840 ×2160 (UHD), 1920 ×1080 (FHD), 1280 ×720 (HD) 720 ×480 (SD), 720 ×576 (SD)	
29	Recording Formats	XAVC/MOV(AVC)/MOV(HAVC)/AVCHD	
30	Live Streaming	Network Protocol: RTSP/RTP/RTMP Video Compression Format: H.264/MPEG4 AVC Main Profile, High Profile Audio Compression Format: AAC LC	
	Interfaces		
31	Video Output:	BNCx1HD-SDI, SD-SDI	
32	HDMI Out:	HDMI:4:2:2/10 bit UHD / HD /SD format support	
33	Audio Input:	XLR-type 3-pin (female) (x1)	
34	Audio Output:	3.5 mm diameter stereo mini jack x 1,	
	Accessories	Battery, Battery charger, AC adaptor, AC cable, Microphone holder kit, Shoulder strap, Eye cup.	
35	Additional battery (with each Camcorder)	Qty 1x Additonal Batteries	
36	Memory Card (with each Camcorder)	Qty 2x 64GB Memory cards Compatible with camera for 4k recordings	
37	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	
2. SITC OF BROADCAST QUALITY PTZ CAMERA			4
Approved Makes: Sony, Panasonic, Data Video, Ross			
1	Type	4K PTZ Camera	
2	Image Sensor	1/2.3",1/2.8" Full HD(1920x1080) MOS/CMOS/EXMOR or better sensor	
3	Optical Zoom and Digital Zoom	20x or better optical 10X or better Digital	
4	Min. Illumination	0.5 Lux or better	
5	Focus	Auto / Manual	

6	Horizontal Resolution	4K : 1300 TV lines HD: 1000 TV lines	
7	White Balance	ATW, AWB A, AWB B, ATW, 3200K,5600K, VAR	
8	Pan Range	Pan: ±170°	
9	Tilting Range	Tilt: +90° to -30° or better	
10	Preset	upto 100 Positions	
11	Pan Tilt Speed	280°/s (Presets) and 90°/s in manual Mode or better	
12	ND Filter	Built in ND filter Auto 1/4, 1/16, 1/64	
13	Control	Serial / IP / IR	
14	Video Output	HDMI x 1, 3G/HD - SDI x 1, USB	
15	Video Output	Should be able to upgrade NDI|HX - With license	
16	Audio Input	3.5mm Line in	
17	Reference	Genlock input	
18	Video format	HDMI 2160/29.97p/ 25p 1080p 59.94/50/29.97/25 1080i 59.94/50 720p 59.94/50 SDI 1080p 59.94/50/29.97/25 1080i 59.94/50 720p 59.94/50	
19	Resolution	3840 x 2160, 1920 x 1080, 1280 x 720, 640 x 360	
20	HDR	Should Support HDR	
	Note	**One camera will be Mounted to Ceiling to be use Document Camera**	

3. SITC OF REMOTE CONTORL PANEL FOR PTZ CAMERA			1
Approved Makes: Sony, Panasonic, DataVideo, Puas			
1	PTZ Camera Control	PTZ camera remote controller compatible with above camera	
2	Control functions	Pan, Tilt, and Zoom, Iris, Focus,	
3	Joystick	2-Axis Joystick	
4	Control functions	Should be able to control 100 cameras on IP	
5	Display	LCD screen displays menus & key camera	
6	Feature	Easy management of up to 100 PTZ camera presets	

4. SITC OF TRIPODS WITH DOLLY FOR CAMERA LOAD			3
Approved Makes: Manfrotto, Libec, Sachtler, Cartoni			
1	Section	Two-Stage Aluminum Tripod System	
2	Payload	5 kg or better	
3	Ball diameter	75mm or better	
4	Section	2 STAGE	
5	Dolly	Compatible Dolly	
6	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

5. SITC OF TRIPOD WITH DOLLY FOR CAMERA AND TP LOAD			1
Approved Makes: Manfrotto, Libec, Sachtler, Cartoni			
1	Section	Two-Stage Aluminum Tripod System	
2	Payload	16 kg or better	
3	Ball diameter	100 mm or better	
4	Section	2 STAGE	
5	Dolly	Compatible Dolly	
6	Pan Bars	Dual Pan Bars	
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

6. SITC OF TELEPROMPTER SYSTEM			1
Approved Makes: Autoscript, Autocue, Cuescript			
1	Type	Teleprompter System for Mounting PTZ Camera. Should be mountable on tripod and/or support stand. Suitable Stand to bear the payload of TP mount and PTZ	
2	Mounting Hardware & Monitor	15" or better Professional Display along with Teleprompter mounting Hardware, Brightness : 350 Nits or better Screen Resolution :1024x768 or better Reverse/Rotation : 4 way picture orientation Video: Autosensing PAL/ NTSC/VGA Composite	
3	Controller	**Should be supplied with 8 Button desktop hand control** device that should support adjustment of the speed and direction of scrolling text on the prompter. Should support quick command buttons for navigation around the script and trigger configurable commands	
4	Feature Support	Teleprompter software with following features support Adjustable Font Size Date & Time Display Story editing on the fly Hold & Block Stories Import RTF, DOC, HTML User- friendly Interface **Should be supplied with suitable I/O interface to connect with Camera Mount Teleprompter Display**	
5	Feature Support	TP Should be able to Show the Presentation (PPT)	
6	Teleprompter Terminal	Teleprompter should be supplied with latest configuration PC/Laptop & peripherals with latest licensed windows OS and should have robust teleprompting software designed for professional shoots with ability to easily import MS word, .txt, and .rtf files.	
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

7.	LAPTOP COMPUTER/LAPTOP SYSTEMS FOR TELEPROMPTER		1
Approved Makes: Dell, Lenovo, HP			
1	Type	Laptop	
2	Processor	min. latest generation i5 Processor	
3	Ram	8GB or better	
4	Harddisk	1 TB or better	
5	Screen size	15" in case of laptop	
6	Interfaces	HDMI interface for extended display	
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

8.	SITC OF DIGITAL VIDEO PRODUCTION SWITCHER FOR TV STUDIO		1
Approved Makes: Sony, Ross Video, Panasonic, For-A, Newtek			
1	Inputs	Minimum 10 or more 3G/HD/SD-SDI, HDMI and NDI Inputs in combination. Compatible to the supplied cameras.	
2	Outputs	Minimum 5 outputs with 4 or more 3G/HD/SD SDI and 1 or more HDMI	
3	Video Input Interface	Video Input Interface: HD-SD SDI, BNC, 75 ohms, SMPTE 259M / 292M (1.5 Gbps or 270	
4	Video Output Interface	Video Output Interface: BNC, 75Ω, HD –SD SDI 1080/50i 1.5 Gbps or 576/50i 270 Mbps	
5	CG Software	CG Software: External / Inbuilt CG software to create still graphics and overlay on program	
6	Signal Processing Standards	SD - 480i/59.94 - 4:3 and 16:9 | 576i/50 - 4:3 and 16:9, HD - 720p 50/59.94, 1080i 50/59.94 | 1080pSF, 23.98/25/29.97, 3G-1080P 50/59.94	
7	Hardware Control Panel	All in one electronic & hardware control panel surface or hardware control panel with separate main frame.	
8	Software Control Panel	Should support Software Control Panel	
9	Mix Effect Buses	1 ME with 4 full function keyers plus transition keyer or better	
10	Chroma Key	Minimum 1 chroma keyer	
11	DVE	2 (2D) floating DVES to be utilized in any keyer in the system	
12	Wipe Generator	Built-in Wipe Generator for M/E	
13	Pattern Generator	Minimum 2 Pattern Generators	

14	Frame Syncs & Format Converters	6 or more freely-assignable Frame Syncs & Format Converters	
15	Multiviewer	1 Builtin MultiViewer with tally, source names, and clock. Configurable with up to 10 windows	
16	Media Store	2 Channels of Media Store	
17	Preview	Should provide preview all the sources and various effects created	
18	External I/O	Bidder can quote external Input and Output converters, Expansion Cards etc. along with the system which should be compatible with camera and other source outputs/ controls to complete workflow.	

9. SITC OF 49" LED DISPLAY PANEL FOR PCR MULTIVIEW			1
Approved Makes: Sony, Panasonic, LG			
1	Screen Size (Diagonal)	49"	
1	Aspect ratio	16:9	
2	Panel Type	IPS Panel / D-LED	
3	Resolution (H × V)	1920 × 1080 pixels	
4	Brightness	300 cd/SqM Or Better	
5	Viewing Angle (Horizontal/Vertical)	178° / 178°	
6	Inputs	Min HDMI x 2 AV X 1 USB ×1 Or better	
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

10. SITC OF 55" LED DISPLAY PANEL FOR STUDIO FOLDBACK			2
Approved Makes: Sony, Panasonic, LG			
1	Screen Size (Diagonal)	55"	
1	Aspect ratio	16:9	
2	Panel Type	IPS Panel / D-LED	
3	Resolution (H × V)	1920 × 1080 pixels	
4	Brightness	300 cd/SqM Or Better	

5	Viewing Angle (Horizontal/Vertical)	178° / 178°	
6	Inputs	Min HDMI x 2 USB ×1 AV X 1 Or better	
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

11.	SITC OF FULL HD INTERACTIVE DISPLAY PANEL		1
Approved Makes: Samsung, Panasonic, Sony, LG			
	DISPLAY		
1	Screen Size (Diagonal)	65 inch	
2	Panel Type / Backlight	IPS Panel	
3	Aspect Ratio	16:9	
4	Resolution	3,840 x 2,160 (UHD)	
5	Brightness	300 cd/m² or better	
6	Contrast Ratio	1200:1 or better	
7	Response Time	10 ms or better	
8	Viewing Angle (Horizontal / Vertical)	176 degrees / 176 degrees	
9	Panel Life	30000 hours or better	
	TOUCH PANEL		
10	Detection Method	Infrared	
11	Touch operation	Min 12 Touch points or better	
12	OS Support	Windows 7/8/10/WindowsXP/Linux/Mac/Android (WindowsXP/Linux/Mac Support one point touch)	
	CONNECTION TERMINAL		
13	Input	HDMI Type A x 2, Component/RGB x 1, USB : at least 3 USB ports	
14	Output	HDMI	
15	Slots	Should have slot to directly integrate PC in the Interactive Display Should be quoted with PC mountable on Interactive Display with Min i3 Processor, 4GB RAM, 250GB HDD or better	
	AUDIO		
16	Built in Speaker	15 Watt or better	
17	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

12.	SITC OF FIELD MONITOR		1
Approved Makes: Atomos or Equivalent			
1	Screen Size	7" or better touch screen Camera Mount Monitor	
2	Resolution	1920 x 1080 or better	
3	Brightness (cdm2 / nits)	1000 nits or better	
4	Video Input	HDMI, SDI	
5	Video Output	HDMI, SDI	

6	Feature	Should be use as Viewfinder for Camcorder and should also have Recording Facility	
7	Audio In/Out	HDMI, SDI and Analogue Audio in and out via XLR	
8	Timecode / Sync	GenLock in, LTC	
9	Recording Formats	ProRes, DNxHD	
10	Power	DC Power as well as Battery operated	
11	Accessories	2x SSD or 480GB or better should be supplied	
12	Accessories	1x SSD reader should be supplied	
12	Accessories	Suitable camera mount attachment should be supplied	

13.SITC OF TRACKLESS 3D VIRTUAL STUDIO SYSTEM			1
Approved Makes: Monarch, Datavideo, Wasp 3D, BEIT, New Tek			
1	Type and features	Integrated 3D Virtual Studio, Switcher, Character Generator, Recorder and Streaming system	
2	Type and features	2 live inputs and should support Trackless Virtual	
3	Type and features	2x DSK to add CG and animations to the scene	
4	Type and features	Chromakey facility	
5	Video Input	Two 3G/HD-SDI and one AUX	
6	Video Output	Two 3G/HD-SDI and one AUX	
7	Format	1080p 60/59.94/50/30/29.97/25 1080i 60/59.94/50	
8		720p 60/59.94/50	
9	Audio Input	SDI audio embedded x 2 HDMI audio embedded x 1 Mini Phone Jack x 2	
10	Keyer	Chromakey / Luminance key x 2	
11	Recording	H.264 / MPEG-2	
12	Live Streaming Protocols	TS HTTP TS RTP TS UDP TS RTSP FLV HTTP FLV RTMP	
13	Virtual Studio	Min. 25 standard Virtual sets along with the system	
14	Should Include	500GB or better Media Cartridge	
15	Hardware	Suitable Hardware with complete accessories to run 3D Trackless virtual system	
16	Display	Should be quoted with one 21" FHD Monitors	
16	Control Panel	Virtual System should be supplied with Hardware control Panel with atleast 10 functional keys, T-Bar, Program/Preset Rows with buttons	
17	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

14.	SITC OF AUDIO DELAY UNIT		1
Approved Makes: Sonifex, Datavideo, Rane			
1	Type	Audio Delay unit with 1 x mic input and 2x Line input	
2	Audio Input	1x XLR for Balanced Mic input and Min 2x XLR or RCA for Line- in	
3	Audio Output	2x XLR, 2x Unbalanced RCA	
4	Audio Delay	Upto 700ms	
5	Phantom Power	Mic Input should support Phantom Power for Mic	
6	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	
15.	SITC OF VIDEO STREAMING ENCODER		1
Appoved Makes: Matrox, Datavideo, AV Matirx, Aurastar			
1	Application	Video streaming server with Dual Streaming out	
2	Video Input	SD/HD SDI,HDMI	
3	Audio Input Analog	SDI & HDMI embedded audio, RCA L/R x1	
4	Video Bitrate	Record Only: Up to 16Mbps (1080p50/60) Stream Only: Up to 10Mbps (1080p50/60) Rec+Stream: 36Mbps	
5	Streaming Platforms	Should support simultaneous streaming to any two platforms like YouTube, Facebook or websites	
6	Recording	Simultaneous recording in H.264 MP4 format while streaming in RTMPS, RTMP, RTSP, TS, or SRT.	
8	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

16.	SITC OF VIDEO RECORDER AND PLAYER		1
Appoved Makes: AJA, BMD, Datavideo, Atomos			
1	Application	File Based Video Recorder / Player	
2	Slots	Should have Two slots for HDD/SSD	
3	Inputs	SDI, HDMI, Analog Audio (Balanced)	
4	Output	SDI, HDMI, Analog Audio (Balanced)	
5	Reference	Reference Input required	
6	Storage	2x 500GB HDD storage module with either built in USB 3.0 connection or to be Supplied with 1x External Dock to read HDD	
7	File Format support	Apple ProRes, DNxHD	

17.	SITC OF 16 CHANNEL ANALOG AUDIO MIXER CONSOLE		1
Approved Makes: Soundcraft, Yamaha, Behringher, Mackie, Tascam			
1	Mixing Channels	16 Channel or better Audio Mixer with Min. 12 Mic Pre amps on Balanced XLR	
2	AUX	4 x Pre/Post or better	
3	Subgroups	4 mono/2 stereo or better	
4	Mic inputs	MIC: 12	
5	Phantom Power	Phantom Power on all mic channels	
6	Fader	100mm	
7	USB Interface	2-in/2-out	
5	Bands	4-band	
6	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

18.	SITC OF AMPLIFIED/POWERED SPEAKERS		2
Approved Makes: KRK, Harman, Yamaha, Audix, Genelac, Tannoy			
1	Type	2 Way Active Studio Monitor	
2	Frequency Range	50 Hz-18 kHz or better	
3	Max Peak SPL	100 dB or better	
5	LF Driver Size	Min. 5" to Max. 6.6"	
6	HF Driver Size	1" or better	
7	Low-Frequency Amplifier Power	40 watts or Better	
8	High-Frequency Amplifier Power	40 watts or Better	
9	Total Power Output	80 Watt or Better	
10	Input Types	1 x XLR, 1 x TRS Balanced	
11	AC Input Voltage	100-240 VAC +/- 10% 50/60 Hz	
12	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

19.	SITC OF DIGITAL SIGNAL PROCESSOR		1
Approved Makes: Harman, Rane, Klark Teknik, Labgruppen, Yamaha			
1	Feature	Networked Digital Signal Processor	
2	Input	12 Analog Inputs (with 48v Phantom Power per	
3	Output	8 Analog Outputs	
4	GPIO	12 Control Inputs and 6 Logic Outputs for GPIO Integration or better	
5	Indicators	Front Panel LED Indication	
6	Analog Inputs	12 electronically balanced	
7	Mic/Line Inputs	Nominal gain 0dB, electronically switchable up to +48dB, in +6dB steps	
8	CMRR	75dB at 1KHz or better	
9	Phantom Power	48V nominal, selectable per input	
10	Analog Outputs	8 electronically balanced	
11	Frequency Response	20Hz-20KHz or Better	
12	Dynamic Range	108dB typical or better	
13	Control Ports	12 inputs and 6 outputs	
14	Control Network	RJ45 Ethernet connector	
15	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	
20.	SITC OF AUDIO AMPLIFIER		1
Approved Makes: Harman, Labgruppen, Yamaha, LD Systems			
1	Type	4 channel amplifier with Network control, DSP, Monitoring Class D or better	
2	Output Power	300W per output channel	
3	Frequency response	20Hz - 20kHz +/-0.5dB	
4	Input Impedance	20 kΩ balanced, 10 kΩ unbalanced	
5	Crosstalk	80dB or better	
6	Voltage Gain	4/8Ω, 70Vrms and 100Vrms Operation: 34dB	
7	Common Mode Rejection	70dB or better	
8	S/N ratio	104dB or better	
9	DSP	On-board Digital Signal Processor	
10	Other Features	Input Router • Input Delay – Up to 1000ms • Input Parametric EQ – 8 band • Crossover • Output Parametric EQ – 8 band • Output Delay – Up to 100ms	
11	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

21.	SITC OF TWO WAY LOUD SPEAKERS		4
Approved Makes: Harman, Bose, B&W, Tannoy, LD Systems			
1	Type	Two-way Min. 5" to Max 6.5" Wall Mount Speaker	
2	Frequency range	85 Hz – 18 kHz or Better	
3	Nominal coverage	120ºH x 120ºV	
4	Components	5.25 inch LF and 0.75 inch HF (+- 5%,)	
5	Power Capacity	60 Watts	
6	Nominal impedance	8 ohms	
7	Transformer Taps	10 W, 5 W (& 2.5W @ 70V)	
8	SPL	100 dB at 8 Ohm or Better	
9	Accessories	Wall-mounting system	
10	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

22.	SITC OF WIRELESS LAPEL MICROPHONE		3
Approved Makes: Sennheiser, AKG, Audio Technica, Shure			
	Receiver		
1	Switching bandwidth	30 MHz or better	
2	Sensitivity	6.3 dBµV / -100 dBm or better	
3	Diversity System	True Diversity / Microprocessor-controlled diversity	
4	Modulation	Wideband FM	
5	Audio bandwidth	40 – 18 000 Hz or better	
6	T.H.D.	0.3 % or better	
7	SNR	100 dB or better	
8	Audio outputs	1 x XLR sockets balanced, 1 x TS ¼" / 6.3 mm jack sockets Unbalanced	
	Transmitter (Battery Operated)		
9	Switching bandwidth	≤ 30 MHz	
10	RF output power	10 to 50 mW	
11	Modulation	Wideband FM	
12	Audio input	TB3M / 3-pin mini-XLR socket or Compatible with Transmitter	
13	Audio bandwidth	40 – 18 000 Hz or better	
14	T.H.D.	0.7 % or better	
15	SNR	100 dB or better	
	Lapel Mic		
16	Condenser lavalier	Cardioid Polar Pattern	
17	Audio frequency bandwidth	150 - 18000 Hz	
18	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

23.	**SITC OF LAPEL MICROPHONE**		3
Approved Makes: Sennheiser, AKG, Audio Technica, Shure			
1	Transducer Principle	Pre-polarized condenser	
2	Frequency Range	40–18,000 Hz or better	
3	Polar Pattern	Omni-directional	
4	Sensitivity	Sensitivity at 1,000 Hz: 7 mV/Pa	
5	Sound Pressure Level for 1% THD	110 dB or better	
6	S/N Ratio	60 dB or better	
7	Phantom Power	9–52 V phantom power	
8	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

24.	**SITC OF WIRELESS HANDHELD MICROPHONE**		2
Approved Makes: Sennheiser, AKG, Audio Technica, Shure			
	Receiver		
1	Switching bandwidth	≤30 MHz	
2	Sensitivity	6.3 dBμV / -100 dBm or better	
3	Diversity System	True Diversity / Microprocessor-controlled diversity	
4	Modulation	Wideband FM	
5	Audio bandwidth	40 – 18 000 Hz or better	
6	T.H.D.	0.3 % or better	
7	SNR	100 dB or better	
8	Audio outputs	1 x XLR sockets balanced, 1 x TS ¼" / 6.3 mm jack sockets Unbalanced	
	Transmitter (Battery Operated)		
9	Microphone capsules	Dynamic (super cardiod)	
10	Switching bandwidth	≤30 MHz	
11	RF output power	10 to 50 mW	
12	Audio bandwidth	40 – 18 000 Hz or better	
13	Modulation	Wideband FM	
14	Max. SPL	120 dB or better	
15	T.H.D.	0.7 % or better	
16	SNR	120 dB or better	
17	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

25.	SITC OF EAR PIECE FOR ANCHOR		3
Approved Makes: Telex, Voice Technologies			
1	Type	Anchor Ear Piece with acoustic Tube with 125Ω, 5' (1.5M) cord, and ¼" plug.	
2	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

26.	SITC OF WIRELESS LAPEL MICROPHONE FOR OUTDOOR WITH CAMERA MOUNTABLE RECIEVER		1
Approved Makes: Sennheiser, Azden, Saramonic, Audio Technica			
1	System Package	Camera Mount Receiver preferably to support two microphone simultaneously, XLR output Cable, Body pack Transmitter with Lavalier and Handheld Microphones	
	System		
2	Antenna	High-Gain Antenna	
3	Display	Digital LCD Display w/ Multifunction Readout	
4	Headphone Output	Headphone Output on Receiver	
	Receiver		
5	Frequency Response	50Hz – 15kHz or Better	
6	S/N Ratio	70 dB or better	
7	Output Impedance	1k Ohms	
8	Type of Reception	FM	
9	Oscillator	PLL Synthesized	
10	Power	Powered by 2 "AA" Batteries	
	Transmitter		
11	Frequency Response	50Hz – 15kHz	
12	RF Power	25mW or better	
13	Oscillator	PLL Synthesized	
14	Power	Powered by 2 "AA" Batteries	
15	Microphone	Omni-directional lapel microphone	
16	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

27.	**SITC OF SHOTGUN MICROPHONE**		1
Approved Makes: Sennheiser, AKG, Azden, Saramonics, Audio Technica			
1	System	Directional shotgun microphone	
2	Directional Pattern	Cardioid	
3	Maximum SPL	120 dB or more	
4	Sensitivity	-36dB or better	
5	Phantom Power	Yes Required	
6	Frequency Range	80Hz to 18kHz or Better	
7	Output Connection	3-pin XLR, balanced	

28.	**SITC OF PROFESSIONAL HEADPHONE**		2
Approved Makes: AKG, Sennheiser, Audio Technica, Bose			
1	Headphone type	Closed-back	
2	Wearing Style	On-ear	
3	Audio frequency bandwidth	20 - 20000 Hz or Better	
4	Sensitivity headphones	100 dB SPL or Better	
5	Rated Impedance	55 Ohms or Better	
6	Max Power	200mW or better	
6	Audio Interface	Type Stereo plug: 3.5mm (1/8") with 6.3 mm (1/4") screw-on Adapter	
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

29.	**SITC OF AUDIO EMBEDDER**		2
Approved Makes: AJA, Datavideo, Cobalt, Ross			
1	Type	SDI and 2-CH Audio Embedder	
2	Input	1x 3G-SDI BNC or better	
3	Output	1x 3G-SDI BNC or better	
4	Audio Inputs	RCA / Mini-XLR /XLR inputs	
5	Output	Two or more SDI outputs with embedded Audio	
6	Firmware Upgradation	Feature Required	
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

30.	SITC OF SDI DISTRIBUTON AMPLIFIER		2
Approved Makes: AJA, Datavideo, Cobalt, Ross			
1	Input	2 x 3G/HD/SD-SDI inputs	
2	Output	6 x 3G/HD/SD-SDI distribution outputs with re-clock	
3	Audio	Should support embedded Audio SDI	
4	Input Control	Two input video sources should be controlled by A/B switch or GPI remote (non-locked)	
	Supported video formats:		
5	3G-SDI	1080P 50/59.94/60	
6	HD-SDI	1080P 23.98/24/25/30	
7	SD-SDI	525i /625i	
8	Firmware Upgradation	Feature Required	
9	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

31.	SITC OF SDI TO HDMI CONVERTER		4
Approved Makes: AJA, Datavideo, Cobalt, Ross			
1	Input	1 x SDI, 1 x unbalanced audio	
2	Output	1 x HDMI, 1 x SDI (loop through)	
3	Output Resolutions	Video output format is the same as the input format	
4	Equalizer	Should be supported	
5	Reclock	Should be supported	
6	Firmware Upgradation	Feature Required	
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

32.	SITC OF SDI TO USB CONVERTER FOR ONLINE VC MEETING		1
Approved Makes: Datavideo, AJA, Osprey, Birddog			
1	Type	SDI-USB Capturing device	
2	Compatibility	Should be compatibe with various operating systems	
3	Compatibility	Amcap, Google Plus Hangouts, OBS (Open Broadcast Software), Skype, VLC, Xsplit Broadcaster, Zoom.us Linux: VLC, OBS Mac OS X: OBS, Quicktime player, VLC, Facetime	
4	Input	1x HD/3G-SDI Audio Input SDI Embedded Audio & 3.5 mm stereo in	
5	Output	1x USB 3.0 1x SDI Loop out	
6	Supported Input & Output Video Formats	1920X1080p 60/59.94/50/30/29.97/25/24/23.976 1920 x 1080i 60/59.94/50 (de-interlaced out) 1280 x 720p 60/59.94/50	
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

33.	SITC OF UP/DOWN/CROSS CONVERTER		3
Approved Makes: AJA, Datavideo, Cobalt, Ross			
1	Type	Up/Down/Cross Conversion	
2	Input	VGA x 1, HDMI x 1 , HD/SD-SDI x 1 or better	
3	Output	SDI x 2, HDMI x 1, SDI Loop thru BNC or better	
4	Supported video output formats:	1080p60/59.94/50, 1080p30/29.97/25/24/23.98, 1080i60/59.94/50, 720p60/59.94/50, 525i, 625i	
5	Audio Format (Input):	Analog Audio L/R : stereo audio SDI / HDMI embedded audio	
6	Audio Format (Output):	SDI embedded audio up to 8CH, 48KHz, PCM audio HDMI embedded audio up to 8CH, 48KHz, PCM audio	
7	Firmware Upgradation	Feature Required	
8	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

34.	PROFESSIONAL SSD BASED DIGITAL VIDEO RECORDER & PLAYER WITH INBUILT DISPLAY		1
	Approved Makes: AJA, Datavideo, Atomos, BMD		
1	Display Size	17" or better	
2	Resolution	1920 x 1080 or Better	
3	Bit depth	10-bit or better	
4	Brightness	1200nit or better	
5	Video Input	Selectable Dual 12G/6G/3G/1.5G SDIHDMI (2.0)	
6	Video Output	SDI 1x 4K-SDI 12G/6G/3G/1.5G, HDMI (2.0)	
7	Audio In/Out	8 Channel in HDMI and SDI embedded or better Line in / Mic in Headphone out	
8	Color Gamut	REC709	
9	Format Support	720p 50/60, 1080i 50/60 1080pSF 24/25/30 1080p 24/25/30/50/60/100/120 2160p 24/25/30/50/60	
10	Power	DC input direct or through adaptor and battery operable	
11	Recording Media	2 Qty - Min 500GB SSD with any required enclosure should be supplied	
12	Genlock	Required	
13	Docking Device	External docking device with USB 3.0 connector for connection of above SSD with Host computer Min 1x Per Recorder	
14	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	
35.	SITC OF 100 WATTS LED COOL LIGHTS FOR STUDIO		14
	Approved Makes: Aultra, Shenoy, Canare, Leksa		
1	Type	100W LED bicolor light having temperature range 3000k to 6000k complete with 4 leaf barndoor, diffusers, normal operated yoke to be provided.	
2	Lamp power	100W or better	
3	Color Temperature	3000K / 6000K	
4	Dimming	0-100% dimming through manual and DMX	
5	CRI	CRI:> 90 or better	
6	Beam Angle	110°	
7	Operating Temperature	-30°C to +55°C	
8	Protection Rating:	IP 20	
9	Mounting Accessory	Die cast aluminium "C" clamps and Safety bond 1.5Mtr long with lock clip	

| 10 | Supplied Accessories | All necessary cables and accessories should be supplied for completeness of the system | |

36.	SITC OF 200 WATTS LED FRESNEL SPOT LIGHT FOR STUDIO		4
Approved Makes: Aultra, Shenoy, Canare, Leksa			
1	Type	200 W LED light with color temperature 3200K/5600K panel complete with 4 leaf barndoor, normal operated yoke, Ceiling mounted, integrated dimmer enabled instant dimming from 0 to 100% color conversion filter from day light to tungsten.	
2	Lamp power	200W or better	
3	Color Temperature	3200K /5600K	
4	Dimming	0-100% through manual and DMX	
5	CRI	CRI:> 90 or better	
6	Beam Angle	10 -50 deg or 30- 60deg	
7	Operating Temperature	-30°C to +55°C	
8	Protection Rating:	IP 20	
9	Mounting Accessory	Die cast aluminum "C" clamps and Safety bond 1.5Mtr long with lock clip	
10	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

37.	SITC OF DIMMER CONTROL		1
Approved Makes: Semlessly Compatible with Offered Studio Lights			
1	Type	Professional 24-Channel or better DMX Lighting Console	
2	Feature Support	24 preset channels, assignable to 512 DMX channels	
3	Feature Support	Dimmer control via DMX or analog output	
4	Feature Support	Illuminated display/controls and Lamp socket for easy operation in dark stage environments	
5	Accessories	1x8 DMX Distribution unit	
6	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

SECTION B - PRODUCTION STORAGE & POST PRODUCTION

38.	SITC OF ENTERPRISE NAS WITH 48 TB STORAGE		1
Approved Makes: Infortrend, Promise, DDP, QSAN			
1	Form Factor	3U 16-bay	
2	Onboard Host Ports	4 x 1Gb/s iSCSI ports, 2 x10Gig ports	
3	Number of Drives	Initially populated with 8 x 6TB Drives. Provision to Expand with Additional Drives in remaining Vacant Hard disk slots	
4	Drive Interface	6Gb/s SATA	
5	Disk Support	3.5" SATA 6Gb/s HDD, 6TB, 7200RPM	
6	File Level Protocol Support	CIFS/ SMB, AFP, NFS, FTP, WebDAV	
7	Block Level Protocol Support	FC, FCoE, iSCSI, SAS	
8	Object Protocol Support	RESTful API	
9	Cloud Gateway	Amazon S3, Microsoft Azure, Alibaba Cloud, OpenStack	
10	Feature Support	Should Support Expansion Enclosures for Future Expansion	
11	RAID levels supported	RAID 0,1,(1+0), 3, 5, 6, 10, 30, 50, 60	
12	Feature Support	Online expansion by Adding new drives, Copying and replacing drives with drives of larger capacity	
13	Feature Support	RAID migration Configurable stripe size and write policy per system	
14	Network Configuration	IPv6 support, Fixed or dynamic IP address, Dual Gigabit Ethernet with Jumbo Frame, Port trunking/ NIC teaming/ Link aggregation (IEEE 802.3ad), DHCP client, MPIO, MC/S support	
15	Access Right Management	User account management, Group management, Folder management (Folder and subfolder access control	
16	Feature Support	Folder quota, Comprehensive access control action items (All Controls, Read, Read & Run, Write, Modify, List), Support Windows Active Directory Authentication (Domain Users Login via CIFS/ SMB, AFP, FTP & file explorer), LDAP on Linux	
17	OS Support	Windows Server 2008 / 2008 R2 / 2012 / 2012 R2 (including Hyper-V), Windows 7 SP1 / Windows 8.1, RedHat Enterprise Linux, SUSE Linux Enterprise, Sun Solaris, Mac OS X, VMware, Citrix XenServer	
18	Accessories	Should be supplied with 2 SFP+ Connectors to connect with Ethernet Switch on 10G network	

39.	SITC OF 24 PORT		1
Approved Makes: Dell, Cisco, Edgecore, HP			
1	Type	24 Port Ethernet Switch	
2	Layer	Layer 2 Switch	
3	Network Media	22 x 10/100/1000 Mbps, 2 x 10G SFP+	
4	No of Ports	24 Port	
5	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

40.	SITC OF WORKSTATION FOR VIDEO EDITING		1
Approved Makes: APPLE			
1	Peripherals	27-inch 4K LED display, Key board and Mouse	
2	Processor	3.5GHz 8-core Intel Xeon W processor Turbo Boost upto 4 GHz (Mac Pro)	
3	RAM	32GB	
4	Storage	1TB SSD, 2TB Internal or External Drive	
5	Graphics Card	8GB Radeon Pro or better	
6	Ports	4x Thunderbolt Ports	
7	I/O Card	Deck-Link SDI 4K	
8	Software	Final Cut Pro (Latest Version) Adobe CCT Package (3 years Subscription)	

41.	SITC OF AMPLIFIED/POWERED SPEAKERS (PAIR)		1
Approved Makes: Harman, Tannoy, Audix, LD Systems			
1	TRANSDUCERS	LF: 135 mm (5.25 in) low frequency loudspeaker or better HF: 19 mm (.75 in) Polycarbonate dome tweeter or better	
2	FREQUENCY RANGE	80 Hz - 20 kHz or better	
3	AMPLIFIER POWER	35 Watts per channel or better	
4	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

42.	SITC OF PROFESSIONAL HEADPHONE		1
Approved Makes: AKG, Sennheiser, Audio Technica, Bose			
1	Headphone type	Closed-back	
2	Wearing Style	On-ear	
3	Audio frequency bandwidth	20 - 20000 Hz or Better	
4	Sensitivity headphones	100 dB SPL or Better	
5	Rated Impedance	55 Ohms or Better	
6	Max Power	200mW or better	
6	Audio Interface	TypeStereo plug: 3.5mm (1/8") with 6.3 mm (1/4") screw-on adapter	
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

43.	SITC OF ONLINE UPS SYSTEM		1
Approved Makes: Eaton, APC, Emerson, Liebert, LDS			
1	UPS	10 KVA 1:1 (1 Phase In: 1 Phase Out) On-Line UPS System with 30 Minutes Backup	
2	Batteries and Accessories	Suitable rated batteries to provide backup for 30 Mins or more along with Battery Rack, interlink battery cables	
3	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system	

44.	SYSTEM INSTALLATION MATERIAL AND CHARGES		1
1	Cabling Approved Makes: Beldon, Canare, Neutrik, Amphenol	It is required to set-up the facility for HD/SD operations, therefore all the cabling should seemlessly support required operations.	
2	Installation Material	All installation materials including, power cables, interconnection cables, connectors and other accessories (required for installation of the complete system shall be quoted	
3	System Completeness	Completeness of the system will be responsibility of the bidder Any hardware and/or software including passive and active devices required for completeness of the technical workflow shall be quoted. Bidder shall be responsible for technical and operational completeness of the entire system. Bidder can quote external Input and Output converters, Expansion Cards etc. along with the system which should be compatible with camera and other source outputs/ controls and to complete workflow.	
4	Workflow Diagram	The bidder has to provide schematic diagram of the technical workflow to ensure the workability of the offered solution in all respects.	
5	Any Additional Items for Complete the workflow	Bidder must mention any additional items require to complete the workflow with proper justification.	

DETAILS OF ACOUSTICS WORK FOR NISD, STUDIO WITH MATERIAL AND LABOUR				
S.No.	**FEATURES**	**QTY**	**UOM**	**Suggested Brands**
1	**SITC OF STATE OF THE ART SEMI-CIVIL & ACOUSTICS WORKS/TREATMENT OF STUDIO** : The vendor may visit "Present assigned rooms at NISD Building to physically ascertain customized requirements at site before quoting quantities and rates for various items under this head **Studio Size Approx 27(L) x 21 (B) x 11 (H) Feet, Window Size Approx. 5 ft x 5.5 ft**			
	The bidder should ensure that the noise level within the studio room is within 30 dB level. Bidders need to quote Unit rates so that actual cost can be calculated based on measurements.			
	Studio Wall 1 = LXH Studio Wall 2 = BXH Studio Wall 3 =LXH Studio Wall 4 = BXH			
1	**Providing of Acoustic Treatment on the Studio Walls and Ceiling**			
1.01	Rock Wool of 32 kg density to be filled between wall and 12 mm thick ply which will be finished with Laminate (inside of the studio) Covered with Virgin polythene and chicken mesh) should be used up to 3 feet from floor and to be filled between wall and 12 mm thick ply which will be finished with 1 mm laminate.	288	Sqft	Acoustic walls with Gyptech or Equivalent **Ply** - Green/Century/ Ecotech **Laminate :-** Greenlam, Merino, Royal touch or equivalent"
1.02	Above 3 feet - Rockwool of 48 kg density to be filled between Wall and the perforated Gypsum. Rockwool should be covered with virgin polythene.	768	Sqft	Acoustic walls with Gyptech or Equivalent
1.03	Providing and Fixing of acoustics Grid Ceiling (600x600mm) with 15 mm grid system (NRC 0.7) and supports Ceiling shall also be acoustically treated with 50 mm thick layer of Rockwool of 40 kg density in a Grid of 2'x2' made up of wire mesh, which will be placed on the perforated Gypsum board, which will be further finished with the paint after jointing and taping	567	Sqft	Acoustic Grids of Gyptech or Equivalent

1.04	Providing and making Observation window in existing Brick wall. 4ft x 3ft Providing 8 mm thick Sandwich toughened Glass Observation Window minimum gap between two glasses will be 2" frame work between Studio and PCR.	12	Sqft	Standard
1.05	Providing and fixing of acoustics 55 mm thick single leaf Door of size 7 x 3.5 ft with vision panel (Peeping window) of 12 inch x 12inch approx. and the door hardware including door closer, handle, lock and a door stopper **Studio has 2 Entrance Doors**	49	Sqft	CUSTOMIZED with**Ply:-** Greenply , Ecotech, Century or Equivalent.**Laminate :-** Greenlam, Merino, Royal touch or equivalent"
1.06	**Studio Light Grid** Providing and Installation of MS (Tube size 50 mm Dia) Studio Lighting grid of 4'x4' spacing and properly painted with two coats of primer and enamel paint with Proper power arrangement for Studio Lights and Cable trenches where ever is required for Studio Dimmer lights.	567	SqFt	Standard
1.07	Providing and laying of 2mm thick PVC flooring in Studio area	567	SqFt	Standard
1.08	Providing and Fixing of designer Anchor / Teacher Table of size of 9 ft length x 3 ft width x 2.5 ft height or better as per the set requirement with slight curves with laminate finish and proper edge binding in suitable ply	27	SqFt	CUSTOMIZED with Ply:- Greenply , Ecotech, Century or Equivalent. Laminate:- Greenlam, Merino, Royal touch or equivalent
1.09	Studio Set with good quality and aesthetically good looking Back drop around the 65 " Interactive Screen. Interactive Screen shall be embedded in the Set. The set will be made of combination of commercial ply and MDF of suitable thickness for the set. The Set will also have a raised platform of 100 thickness in front of the set. Necessary arrangements will be made for colour changing LED light strips at various points of the set.	1	Lot	CUSTOMIZED with Ply:- Greenply , Ecotech, Century or Equivalent. Laminate:- Greenlam, Merino, Royal touch or equivalent
1.10	Green Chroma Set 12 Feet wide, 10 Feet on Wall and at least 6 Feet on Floor with curved edge from Wall to floor. With Proper green fabric to provide rich Chroma key effect made up of ply and a carpet of green colour to be pasted on it.	192	SqFt	Standard
1.11	Closing of all glass windows/partitions with 12 mm MDF painted black from one side and mounted in front of the glass with drywall partition channels	3	Lot	Standard

1.12	Wooden Cable Tray - For laying of Cable between PCR and Studio. (Across the periphery of Studio and PCR)			Standard
1.13	Dismantling of Existing False ceiling tiles and grid.			
2	**SITC OF STATE OF THE ART SEMI-CIVIL & acoustics WORKS/TREATMENT OF PCR**			
	PCR Size 13'(L)x 21' (B) x11' (H)			
	PCR Wall 1 = LXH PCR Wall 2 = BXH PCR Wall 3 = LXH PCR Wall 4 = BXH			
	Providing of acoustics Treatment on the Studio Walls and Ceiling			
2.01	Rock Wool of 32 kg density to be filled between wall and 12 mm thick ply which will be finished with Laminate (inside of the studio) Covered with Virgin polythene and chicken mesh) should be used up to 3 feet from floor and to be filled between wall and 12 mm thick ply which will be finished with 1 mm laminate.	204	SqFt	Acoustic walls with Gyptech or Equivalent **Ply** - Green/Century/Ecotech **Laminate :-** Greenlam, Merino, Royal touch or equivalent"
2.02	Above 3 feet - Rockwool of 48 kg density to be filled between Wall and the perforated Gypsum as being proposed for acoustics Rockwool should be covered with virgin polythene.	544	SqFt	Acoustic walls with Gyptech or Equivalent
2.03	**Providing and Fixing of acoustic Grid Ceiling (600x600) with 15 mm grid system (NRC 0.7) and supports** Ceiling shall also be acoustically treated with 50 mm thick layer of Rockwool of 40 kg density in a Grid of 2'x2' made up of wire mesh, which will be placed on the perforated Gypsum board, which will be further finished with the paint after jointing and taping	273	SqFt	Acoustic Grids of Gyptech or Equivalent
2.04	Providing and fixing of acoustics 55 mm thick single leaf Door of size 7 x 3.5 ft with vision panel (Peeping window) of 12 inch x 12inch approx and the door hardware including door closer, handle, lock and a door stopper	24.5	SqFt	CUSTOMIZED with **Ply:-** Greenply , Ecotech, Century or Equivalent. **Laminate :-** Greenlam, Merino, Royal touch or equivalent"
2.05	Providing and laying of 2mm thick PVC flooring	273	SqFt	Standard

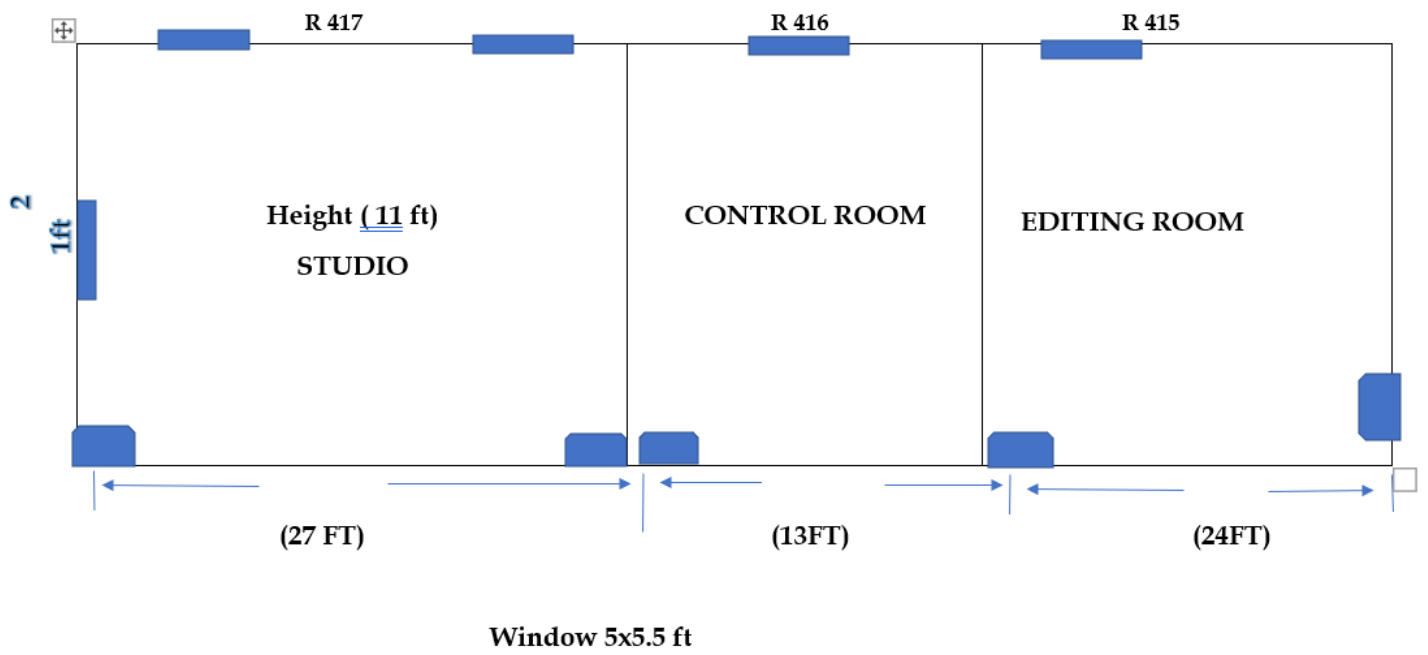|				
2.06	Providing and Fixing of Technical Table at PCR of size 15(L) X 3F(B) X 2.5(H) with Extended Slanted extention for Equipement placement above 2.5feet of approx 900mm with laminate finish and suitable suitable ply. It should also have a provision for cable laying trench, power distribution units for equipment to be placed on technical table.	45	SqFt	CUSTOMIZED with **Ply:-** Greenply , Ecotech, Century or Equivalent. **Laminate :-** Greenlam, Merino, Royal touch or equivalent"
2.07	Providing and Fixing of Cabinets 7ft x 3 ft & 450mm depth (approx), made up of commercial board with Shutters in Prelam MDF	21	SqFt	CUSTOMIZED with **Ply:-** Greenply , Ecotech, Century or Equivalent. **Laminate :-** Greenlam, Merino, Royal touch or equivalent"
2.08	Closing of all glass windows/partitions with 12 mm MDF painted black from one side and mounted in front of the glass with drywall partition channels	1	Job	Standard
2.09	Wooden Cable Tray - For laying of Cable between PCR and Studio.	1	Job	Standard
3	**EDIT ROOM**			
3.01	Providing and Fixing of Technical Table at EDIT area of size 15(L) X 2.5 F(B) X 2.5(H) with laminate finish and proper edge binding in suitable ply. It should also have a provision for cable laying trench, power distribution units for equipment to be placed on technical table.	37.5	SqFt	CUSTOMIZED with **Ply:-** Greenply , Ecotech, Century or Equivalent. **Laminate :-** Greenlam, Merino, Royal touch or equivalent"
4	**SOUNDLOCK AND PASSAGE WORKS** **Bidder has to make a sound lock area of approx size 4 ft x 5ft at the entrance of Studio**			
4.01	Sound lock area to be made inside the studio and should be treated with acoustics works. Partition wall to be made of size 4 ft x 5 ft			
4.02	Rock Wool of 32 kg density to be filled between wall and 12 mm thick ply which will be finished with Laminate (inside of the studio) Covered with Virgin polythene and chicken mesh) should be used Up to 3 feet from floor and to be filled between wall and 12 mm thick ply which will be finished with 1 mm laminate.	27	SqFt	Acoustic walls with Gyptech or Equivalent **Ply** - Green/Century/ Ecotech **Laminate :-** Greenlam, Merino, Royal touch or equivalent"
4.03	Above 3 feet - Rockwool of 48 kg density to be filled between Wall and the perforated Gypsum as being proposed for acoustics Rockwool should be covered with virgin polythene.	81	SqFt	Acoustic walls with Gyptech or Equivalent

4.04	**Providing and Fixing of acoustic Grid Ceiling (600x600) with 15 mm grid system (NRC 0.7) and supports** Ceiling shall also be acoustically treated with 50 mm thick layer of Rockwool of 40 kg density in a Grid of 2'x2' made up of wire mesh, which will be placed on the perforated Gypsum board, which will be further finished with the paint after jointing and taping	20	SqFt	Acoustic Grids of Gyptech or Equivalent
4.05	Providing and fixing of acoustics 55 mm thick single leaf Door of size 7 x 3.5 ft with vision panel (Peeping window) of 12 inch x 12inch approx and the door hardware including door closer, handle, lock and a door stopper	24.5	SqFt	CUSTOMIZED with **Ply:-** Greenply , Ecotech, Century or Equivalent. **Laminate :-** Greenlam, Merino, Royal touch or equivalent"
5	**ELECTRICAL WORK**			
5.01	The electrical points should be sufficient for lights and equipment and should be of standard makes modular switches and sockets, with short circuit and overload protection. Studio, Sound lock and PCR Should be equipped with 2x2 LED Panel Lights in Sufficient quantity to illuminate the operational area With separate switches. The bidder should use good quality copper wires and PVC tray etc to carry wires and cables etc.	1	Lot	Filolex/ POLYCAB/ RR CABLE or equivalent PVC Tray/conduit - Polycab/ BEC/ AKG Anchor/Legrand or Equivalent

NISD BROADCAST STUDIO LAYOUT

R 417   R 416   R 415

2
1ft

Height (11 ft)   CONTROL ROOM   EDITING ROOM
STUDIO

(27 FT)   (13FT)   (24FT)

Window 5x5.5 ft

Details of Bidder/Tenderer

1.	Name of Tenderer /Company Name	
2.	Registration Number	
3.	Registration Address	
4.	Name of Partners/ Directors	
5.	Bidder Type (Indian /Foreign)	
6.	City	
7.	State	
8.	Postal Code	
9.	Company's Establishment Year	
10.	Company's Nature of Business	
11.	Company Category (Micro unit as per MSME/ Small Unit as per MSME/Medium Unit as per MSME/ Ancillary Unit/ Project affected person at this Company /SSI/Other	
12.	Contact Details(Enter Company Contact Person Details)	
13.	Contact Name	
14.	Date of Birth(DD/MM/YY)	
15.	Correspondence Email (Correspondence Email ID can be same as your login ID if available on CPP Portal. All the mail correspondence will be sent only to the correspondence email ID).	
16.	Company Legal Status (Limited /Undertaking/ Joint Venture/ Partnership/Other).	
17.	Designation	
18.	Phone	
19.	Mobile	
20.	Registration Details	
	a) PAN No. / Tan No. (Attach Proof)	
	b) Service Tax Registration No.	
	c) Sale Tax Registration No.	
21.	Details OF Earned Money Deposit	
	a) Amount Rupees	
	b) Date of Transfer	
	c) Bank transferred from	
	d) Transaction ID	
22.	Turnover Of Five previous financial years	
	a) 2016-2017	
	b) 2017-2018	
	c) 2018-2019	
	d) 2019-2020	
	e) 2020-2021	

23.	The bidder should have setup/commissioned at least two broadcast studios in the last five financial years (2016-2021) anywhere in India, where the value of the purchase order should not be less than Rs. 1 Cr (Rs. One crore) each. Proof of the same including copies of purchase order, completion certificate and details of contact person to be provided.	Yes ☐ No ☐
24.	Whether Agency has been black listed by any of the Department/ Organization (Attach undertaking on the letter head of the Firm).	
25.	Firm must provide customer satisfaction letter from customers from Govt. Department / PSU / Autonomous Body, while submitting the technical bids.	

This is to certify that we have carefully read the contents at the tender document and fully understood all the terms and conditions therein and undertakes myself/ ourselves to abide by the same.

Place:

Signature of the Tenderer

Date:

Name of the Firm/Company

Make and model No. of the equipment quoted

Sl. No.	Item	Approved Makes	Quoted Make	Model No.
1.	BROADCAST QUALITY 1" 4K CAMCORDER FOR OUTDOOR AND INDOOR SHOOT	Sony, Panasonic, Canon		
2.	BROADCAST QUALITY PTZ CAMERA	Sony, Panasonic, Data Video, Ross		
3.	REMOTE CONTORL PANEL FOR PTZ CAMERA	Sony, Panasonic, DataVideo, Puas		
4.	TRIPODS WITH DOLLY FOR CAMERA LOAD	Manfrotto, Libec, Sachtler, Cartoni		
5.	TRIPOD WITH DOLLY FOR CAMERA AND TP LOAD	Manfrotto, Libec, Sachtler, Cartoni		
6.	TELEPROMPTER SYSTEM	Autoscript, Autocue, Cuescript		
7.	LAPTOP COMPUTER/LAPTOP SYSTEMS FOR TELEPROMPTER	Dell, Lenovo, HP		
8.	DIGITAL VIDEO PRODUCTION SWITCHER FOR TV STUDIO	Sony, Ross Video, Panasonic, For-A, Newtek		
9.	49" LED DISPLAY PANEL FOR PCR MULTIVIEW	Sony, Panasonic, LG		
10.	55" LED DISPLAY PANEL FOR STUDIO FOLDBACK	Sony, Panasonic, LG		
11.	FULL HD INTERACTIVE DISPLAY PANEL	Samsung, Panasonic, Sony, LG		
12.	FIELD MONITOR	Atomos or Equivalent		
13.	TRACKLESS 3D VIRTUAL STUDIO SYSTEM	Monarch, Datavideo, Wasp 3D, BEIT, New Tek		
14.	AUDIO DELAY UNIT	Sonifex, Datavideo, Rane		
15.	VIDEO STREAMING ENCODER	Matrox, Datavideo, AV Matirx, Aurastar		
16.	VIDEO RECORDER AND PLAYER	AJA, BMD, Datavideo, Atomos		
17.	16 CHANNEL ANALOG AUDIO MIXER CONSOLE	Soundcraft, Yamaha, Behringher, Mackie, Tascam		

18.	AMPLIFIED/POWERED SPEAKERS	KRK, Harman, Yamaha, Audix, Genelac, Tannoy		
19.	DIGITAL SIGNAL PROCESSOR	Harman, Rane, Klark Teknik, Labgruppen,Yamaha		
20.	AUDIO AMPLIFIER	Harman, Labgruppen, Yamaha, LD Systems		
21.	TWO WAY LOUD SPEAKERS	Harman, Bose, B&W, Tannoy, LD Systems		
22.	WIRELESS LAPEL MICROPHONE	Sennheiser, AKG, Audio Technica, Shure		
23.	LAPEL MICROPHONE	Sennheiser, AKG, Audio Technica, Shure		
24.	WIRELESS HANDHELD MICROPHONE	Sennheiser, AKG, Audio Technica, Shure		
25.	EAR PIECE FOR ANCHOR	Telex, Voice Technologies		
26.	WIRELESS LAPEL MICROPHONE FOR OUTDOOR WITH CAMERA MOUNTABLE	Sennheiser, Azden, Saramonic, Audio Technica		
27.	SHOTGUN MICROPHONE	Sennheiser, AKG, Azden, Saramonics, Audio Technica		
28.	PROFESSIONAL HEADPHONE	AKG, Sennheiser, Audio Technica, Bose		
29.	AUDIO EMBEDDER	AJA, Datavideo, Cobalt, Ross		
30.	SDI DISTRIBUTON AMPLIFIER	AJA, Datavideo, Cobalt, Ross		
31.	SDI TO HDMI CONVERTER	AJA, Datavideo, Cobalt, Ross		
32.	SDI TO USB CONVERTER FOR ONLINE VC MEETING	Datavideo, AJA, Osprey, Birddog		
33.	UP/DOWN/CROSS CONVERTER	AJA, Datavideo, Cobalt, Ross		
34.	PROFESSIONAL SSD BASED DIGITAL VIDEO RECORDER & PLAYER WITH INBUILT	AJA, Datavideo, Atomos, BMD		
35.	100 WATTS LED COOL LIGHTS FOR STUDIO	Aultra, Shenoy, Canare, Leksa		

36.	200 WATTS LED FRESNEL SPOT LIGHT FOR STUDIO	Aultra, Shenoy, Canare, Leksa		
37.	DIMMER CONTROL	Semlessly Compatible with Offered Studio Lights		
38.	ENTERPRISE NAS WITH 48 TB STORAGE	Infortrend, Promise, DDP, QSAN		
39.	24 PORT ETHERNET SWITCH	Dell, Cisco, Edgecore, HP		
40.	WORKSTATION FOR VIDEO EDITING	APPLE		
41.	AMPLIFIED/POWERED SPEAKERS (PAIR)	Harman, Tannoy, Audix, LD Systems		
42.	PROFESSIONAL HEADPHONE	AKG, Sennheiser, Audio Technica, Bose		
43.	ONLINE UPS SYSTEM	Eaton, APC, Emerson, Liebert, LDS		
44.	Cabling	Beldon, Canare, Neutrik, Amphenol		

COMPLIANCE STATEMENT

S.No.	Eligibility Criteria	Whether complied Yes/No	Page No. in Bid Document Where details are available
1.	The bidder should be a company registered in India		
2.	The bidder should be either the manufacturer (OEM) and/or the authorized representative for supply and maintenance of all the studio equipment mentioned in Annexure-I		
3.	The bidder should have experience in setting up of Broadcast studios. This would include – (i) Marketing, Integration, Installation, Testing, Commissioning of equipment mentioned in Annexure-I and providing after sales service/AMC for the equipment and (ii) Preparing the studio and control room including the acoustic work		
4.	The bidder should have setup/commissioned at least two broadcast studios in the last five financial years (2016-2021) anywhere in India, where the value of the purchase order should not be less than Rs. 1 Cr (Rs. One crore) each. Proof of the same including copies of purchase order, completion certificate and details of contact person to be provided.		
5.	The annual turnover of the bidder company should not be less than Rs. 2Cr (Rs. Two Crore) per year for any three financial years during the previous five financial years (2016-2021). Proof of the same to be provided.		
6.	The Bidder should have Office /Service Centre in Delhi /NCR . Address and contact details to be provided with documentary proof.		
7.	The Bidder should provide complete workflow / Schematic Diagram of the Broadcast Studio Equipment.		

SPECIFICATION FOR NISD BROADCAST STUDIO EQUIPMENT

S.No.	FEATURES	SPECIFICATIONS	Whether complied Yes/No	Page No. in Bid Document Where details are available
1. BROADCAST QUALITY 1" 4K CAMCORDER FOR OUTDOOR AND INDOOR SHOOT				
Make and Model No. of Equipment Quoted: **(Approved Makes: Sony, Panasonic, Canon)**				
	Camera			
1	Image sensor	1" MOS/ CMOS Single chip Image Sensor or ½ inch 3 CMOS or better Sensor		
2	Effective Pixels per Sensor	15 Megapixel or more		
3	Lens	The camcorder should have integrated Zoom Lens with Optical Zoom ratio of 17X or better with manual three rings for control of zoom, iris and focus and Min 10x Digital Zoom		
4	Optical System	F1.6 prism system		
5	Neutral Density filter	Clear, 1/4, 1/16, 1/64		
6	Optical Image stabilizer	Required		
7	Sensitivity	F12 or better on (2000 lx, 3200 K, 89.9 reflect		
8	Horizontal Resolution	2,000 TV lines or more (3840 x2160p mode) or better 1,000 TV lines or more (1920 x1080p mode) or better		
9	Shutter Speed:	1/25 sec to 1/10,000 sec or better		
10	Monitor/Viewfinder	3.5" type TFTLCD color monitor and 0.39 type OLED Viewfinder		
11	Essential Features	It should have slow and fast motion recording and reproduction facility.		
12	Essential Features	The camcorder should also have 3.5" or larger articulating LCD colour monitor		
13	Video / Audio Output	The camcorder should have HD-SDI output, HDMI out and microphone/line input on XLR. Besides, it should also have USB port.		
14	Memory card Slots	The camcorder should be able to record on memory cards. It should have at least two memory card slots which should enable relay recording/ simultaneous or backup recording for enhanced reliability.		

15	Preferred Shutter Speed at 50i/ 50p mode (Sec.)	1/50 to 1/2000 or better		
16	Gain Selections	Variable from 0 dB to + 18 dB or better in steps		
17	White Balance	Auto I Preset /Variable		
18	Signal to Noise Ratio	60 dB or better		
	ZOOM LENS:			
19	Optical Zoom Ratio	17X or better		
20	Maximum Aperture	F2.8 or better		
21	Recording format	UHD (3840 x 2160) : HEVC Long GOP 150 Mbps (4:2:0) with MOV wrapper and MPEG-4 AVC/ H.264 Long GOP 150 Mbps (4:2:2) with MOV wrapper or XAVC - L QFHD MPEG-4 AVC / H.264 150 Mbps with MXF wrapper or MPEG-4 AVC / H.264 150 Mbps with QuickTime wrapper HD (1920 x 1080): MPEG-4 AVC / H.264 Long GOP 50 Mbps (4:2:2) with MOV wrapper or XAVC - L HD MPEG-4 AVC/ H.264 50 Mbps and MPEGHD422 50 Mbps with MXF wrapper or MPEG-4 AVC / H.264 50 Mbps and MPEG-2 Long GOP with QuickTime wrapper		
	Video/Audio Recording			
22	Recording Media	SXS/SDHC/SDXC/ Micro P2 Memory card		
23	Recording resolution	3840 ×2160 (UHD), 1920 ×1080 (FHD), 1280 ×720 (HD) 720 ×480 (SD), 720 ×576 (SD)		
24	Recording Formats	XAVC/MOV(AVC)/MOV(HAVC)/AVCHD		
25	Live Streaming	Network Protocol: RTSP/RTP/RTMP Video Compression Format: H.264/MPEG4 AVC Main Profile, High Profile Audio Compression Format: AAC LC		
	Interfaces			
26	Video Output:	BNCx1HD-SDI, SD-SDI		
27	HDMI Out:	HDMI:4:2:2/10 bit UHD / HD /SD format support		
28	Audio Input:	XLR-type 3-pin (female) (x1)		
29	Audio Output:	3.5 mm diameter stereo mini jack x 1,		

	Accessories	Battery, Battery charger, AC adaptor, AC cable, Microphone holder kit, Shoulder strap, Eye cup.		
30	Additional battery (with each Camcorder)	Qty 1x Additonal Batteries		
31	Memory Card (with each Camcorder)	Qty 2x 64GB Memory cards Compatible with camera for 4k recordings		
32	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

	2. BROADCAST QUALITY PTZ CAMERA			
	Make and Model No. of Equipment Quoted:			
	(Approved Makes: Sony, Panasonic, Data Video, Ross)			
1	Type	4K PTZ Camera		
2	Image Sensor	1/2.3",1/2.8" Full HD(1920x1080) MOS/CMOS/EXMOR or better sensor		
3	Optical Zoom and	20x orbetter optical 10X or better Digital		
4	Min. Illumination	0.5 Lux or better		
5	Focus	Auto / Manual		
6	Horizontal Resolution	4K : 1300 TV lines HD: 1000 TV lines		
7	White Balance	ATW, AWB A, AWB B, ATW, 3200K,5600K, VAR		
8	Pan Range	Pan: ±170°		
9	Tilting Range	Tilt: +90° to -30° or better		
10	Preset	upto 100 Positions		
11	Pan Tilt Speed	280°/s (Presets) and 90°/s in manual Mode or better		
12	ND Filter	Built in ND filter Auto 1/4, 1/16, 1/64		
13	Control	Serial / IP / IR		
14	Video Output	HDMI x 1, 3G/HD - SDI x 1, USB		
15	Video Output	Should be able to upgrade NDI|HX - With license		
16	Audio Input	3.5mm Line in		
17	Reference	Genlock input		
18	Video format	HDMI 2160/29.97p/25p, 1080p 59.94/50/29.97/25 1080i 59.94/50, 720p 59.94/50 SDI, 1080p 59.94/50/29.97/25, 1080i 59.94/50, 720p 59.94/50		
19	Resolution	3840 x 2160, 1920 x 1080, 1280 x 720, 640 x 360		
20	HDR	Should Support HDR		
	Note	**One camera will be Mounted to Ceiling to be use Document Camera**		

	3. REMOTE CONTORL PANEL FOR PTZ CAMERA			
	Make and Model No. of Equipment Quoted:			
	(Approved Makes: Sony, Panasonic, Data Video, Puas)			
1	PTZ Camera Control	PTZ camera remote controller compatible with above camera		
2	Control functions	Pan, Tilt, and Zoom, Iris, Focus,		
3	Joystick	2-Axis Joystick		
4	Control functions	Should be able to control 100 cameras on IP		
5	Display	LCD screen displays menus & key camera		
6	Feature	Easy management of up to 100 PTZ camera presets		

4.	TRIPODS WITH DOLLY FOR CAMERA LOAD			
Make and Model No. of Equipment Quoted:				
(Approved Makes: Manfrotto, Libec, Sachtler, Cartoni)				
1	Section	Two-Stage Aluminum Tripod System		
2	Payload	5 kg or better		
3	Ball diameter	75mm or better		
4	Section	2 STAGE		
5	Dolly	Compatible Dolly		
6	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

5.	TRIPOD WITH DOLLY FOR CAMERA AND TP LOAD			
Make and Model No. of Equipment Quoted: **(Approved Makes: Manfrotto, Libec, Sachtler, Cartoni)**				
1	Section	Two-Stage Aluminum Tripod System		
2	Payload	16 kg or better		
3	Ball diameter	100 mm or better		
4	Section	2 STAGE		
5	Dolly	Compatible Dolly		
6	Pan Bars	Dual Pan Bars		
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

6.	TELEPROMPTER SYSTEM			
Make and Model No. of Equipment Quoted: **(Approved Makes: Autoscript, Autocue, Cuescript)**				
1	Type	Teleprompter System for Mounting PTZ Camera. Should be mountable on tripod and/or support stand. Suitable Stand to bear the payload of TP mount and PTZ		
2	Mounting Hardware & Monitor	15" or better Professional Display along with Teleprompter mounting Hardware, Brightness : 350 Nits or better Screen Resolution :1024x768 or better Reverse/Rotation : 4 way picture orientation Video: Autosensing PAL/ NTSC/VGA Composite		
3	Controller	**Should be supplied with 8 Button desktop hand control** device that should support adjustment of the speed and direction of scrolling text on the prompter. Should support quick command buttons for navigation around the script and trigger configurable commands		
4	Feature Support	Teleprompter software with following features support Adjustable Font Size Date & Time Display Story editing on the fly Hold & Block Stories Import RTF, DOC, HTML User- friendly Interface **Should be supplied with suitable I/O interface to connect with Camera Mount Teleprompter Display**		
5	Feature Support	TP Should be able to Show the Presentation (PPT)		

6	Teleprompter Terminal	Teleprompter should be supplied with latest configuration PC/Laptop & peripherals with latest licensed windows OS and should have robust teleprompting software designed for professional shoots with ability to easily import MS word, .txt, and .rtf files.		
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

7.	LAPTOP COMPUTER/LAPTOP SYSTEMS FOR TELEPROMPTER			
Make and Model No. of Equipment Quoted: (Approved Makes: Dell, Lenovo, HP)				
1	Type	Laptop		
2	Processor	min. latest generation i5 Processor		
3	Ram	8GB or better		
4	Hard disk	1 TB or better		
5	Screen size	15" in case of laptop		
6	Interfaces	HDMI interface for extended display		
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

8.	DIGITAL VIDEO PRODUCTION SWITCHER FOR TV STUDIO			
Make and Model No. of Equipment Quoted: **(Approved Makes: Sony, Ross Video, Panasonic, For-A, Newtek)**				
1	Inputs	Minimum 10 or more Inputs 3G/HD/SD SDI, HDMI and NDI Inputs in Combination. Compatible to the supplied cameras.		
2	Outputs	Minimum 5 outputs with 4 or more 3G/HD/SD SDI and 1 or more HDMI		
3	Video Input Interface	Video Input Interface: HD-SD SDI, BNC, 75 ohms, SMPTE 259M / 292M (1.5 Gbps or 270 Mbps)		
4	Video Output Interface	Video Output Interface: BNC, 75Ω, HD –SD SDI 1080/50i 1.5 Gbps or 576/50i 270 Mbps		
5	CG Software	CG Software: External / Inbuilt CG software to create still graphics and overlay on program Out		
6	Signal Processing Standards	SD - 480i/59.94 - 4:3 and 16:9 | 576i/50 - 4:3 and 16:9, HD -720p 50/59.94, 1080i 50/59.94 | 1080pSF, 23.98/25/29.97, 1080p 25/29.97, 3G - 1080p 50/59.94		
7	Hardware Control Panel	All in one electronic & hardware control panel surface or hardware control panel with separate main frame		
8	Software Control Panel	Should support Software Control Panel		
9	Mix Effect Buses	1 ME with 4 full function keyers plus transition keyer or better		
10	Chroma Key	Minimum 1 chroma keyer		
11	DVE	2 (2D) floating DVES to be utilized in any keyer in the system		
12	Wipe Generator	Built-in Wipe Generator for M/E		
13	Pattern Generator	Minimum 2 Pattern Generators		

14	Frame Syncs & Format Converters	6 or more freely-assignable Frame Syncs & Format Converters		
15	Multiviewer	1 Builtin MultiViewer with tally, source names, and clock. Configurable with up to 10 windows		
16	Media Store	2 Channels of Media Store		
17	Preview	Should provide preview all the sources and various effects created		
18.	External I/O	Bidder can quote external Input and Output converters , Expansion Cards etc. along with the system which should be compatible with camera and other source out puts/ controls and to complete workflow.		

9. 49" LED DISPLAY PANEL FOR PCR MULTIVIEW

Make and Model No. of Equipment Quoted: (Approved Makes: Sony, Panasonic, LG)

1	Screen Size (Diagonal)	49"		
1	Aspect ratio	16:9		
2	Panel Type	IPS Panel / D-LED		
3	Resolution (H × V)	1920 × 1080 pixels		
4	Brightness	300 cd/SqM Or Better		
5	Viewing Angle (Horizontal/Vertical)	178° / 178°		
6	Inputs	Min HDMI x 2 AV × 1 USB ×1 Or better		
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

10. 55" LED DISPLAY PANEL FOR STUDIO FOLDBACK

Make and Model No. of Equipment Quoted:
(Approved Makes: Sony, Panasonic, LG)

1	Screen Size (Diagonal)	55"		
1	Aspect ratio	16:9		
2	Panel Type	IPS Panel / D-LED		
3	Resolution (H × V)	1920 × 1080 pixels		
4	Brightness	300 cd/SqM Or Better		
5	Viewing Angle (Horizontal/Vertical)	178° / 178°		
6	Inputs	Min HDMI x 2 AV × 1 USB ×1 Or better		
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

11.FULL HD INTERACTIVE DISPLAY PANEL				
Make and Model No. of Equipment Quoted:				
(Approved Makes: Samsung, Panasonic, Sony, LG)				
	DISPLAY			
1	Screen Size (Diagonal)	65 inch		
2	Panel Type / Backlight	IPS Panel		
3	Aspect Ratio	16:9		
4	Resolution	3,840 x 2,160 (UHD)		
5	Brightness	300 cd/m² or better		
6	Contrast Ratio	1200:1 or better		
7	Response Time	10 ms or better		
8	Viewing Angle (Horizontal /	176 degrees / 176 degrees		
9	Panel Life	30000 hours or better		
	TOUCH PANEL			
10	Detection Method	Infrared		
11	Touch operation	Min 12 Touch points or better		
12	OS Support	Windows 7/8/10/WindowsXP/Linux/Mac/Android (WindowsXP/Linux/Mac Support one point touch)		
	CONNECTION TERMINAL			
13	Input	HDMI Type A x 2, Component/RGB x 1, USB : at least 3 USB ports		
14	Output	HDMI		
15	Slots	Should have slot to directly integate PC in the Interactive Display Should be quoted with PC mountable on Interactive Display with Min i3 Processor, 4GB RAM, 250GB HDD or better		
	AUDIO			
16	Built in Speaker	15 Watt or better		
17	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

12. FIELD MONITOR				
Make and Model No. of Equipment Quoted:				
(Approved Makes: Atomos or Equivalent)				
1	Screen Size	7" or better touch screen Camera Mount Monitor		
2	Resolution	1920 x 1080 or better		
3	Brightness (cdm2 / nits)	1000 nits or better		
4	Video Input	HDMI, SDI		
5	Video Output	HDMI, SDI		
6	Feature	Should be use as Viewfinder for Camcorder and should also have Recording Facility		
7	Audio In/Out	HDMI, SDI and Analogue Audio in and out via XLR		
8	Timecode / Sync	GenLock in, LTC		
9	Recording Formats	ProRes, DNxHD		
10	Power	DC Power as well as Battery operated		
11	Accessories	2x SSD or 480GB or better should be supplied		

12	Accessories	1x SSD reader should be supplied		
13	Accessories	Suitable camera mount attachment should be supplied		

13.	TRACKLESS 3D VIRTUAL STUDIO SYSTEM			
Make and Model No. of Equipment Quoted: **(Approved Makes: Monarch, Data video, Wasp 3D, BEIT, New Tek)**				
1	Type and features	Integrated 3D Virtual Studio, Switcher, Character Generator, Recorder and Streaming system		
2	Type and features	2 live inputs and should support Trackless Virtual		
3	Type and features	2x DSK to add CG and animations to the scene		
4	Type and features	Chromakey facility		
5	Video Input	Two 3G/HD-SDI and one AUX		
6	Video Output	Two 3G/HD-SDI and one AUX		
7	Format	1080p 60/59.94/50/30/29.97/25 1080i 60/59.94/50		
8		720p 60/59.94/50		
9	Audio Input	SDI audio embedded x 2 HDMI audio embedded x 1 Mini Phone Jack x 2		
10	Keyer	Chromakey / Luminance key x 2		
11	Recording	H.264 / MPEG-2		
12	Live Streaming Protocols	TS HTTP TS RTP TS UDP TS RTSP FLV HTTP FLV RTMP		
13	Virtual Studio	Min. 25 standard Virtual sets along with the system		
14	Should Include	500GB or better Media Cartridge		
15	Hardware	Suitable Hardware with complete accessories to run 3D Trackless virtual system		
16	Display	Should be quoted with one 21" FHD Monitors		
16	Control Panel	Virtual System should be supplied with Hardware control Panel with atleast 10 functional keys, T- Bar, Program/Preset Rows with buttons		
17	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

14.	AUDIO DELAY UNIT			
Make and Model No. of Equipment Quoted: **(Approved Makes: Sonifex, Datavideo, Rane)**				
1	Type	Audio Delay unit with 1 x mic input and 2x Line input		
2	Audio Input	1x XLR for Balanced Mic input and Min 2x XLR or RCA for Line- in		
3	Audio Output	2x XLR, 2x Unbalanced RCA		
4	Audio Delay	Upto 700ms		
5	Phantom Power	Mic Input should support Phantom Power for Mic		
6	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

15.	VIDEO STREAMING ENCODER			
Make and Model No. of Equipment Quoted: **(Appoved Makes: Matrox, Datavideo, AV Matirx, Aurastar)**				
1	Application	Video streaming server with Dual Streaming out		
2	Video Input	SD/HD SDI,HDMI		
3	Audio Input Analog	SDI & HDMI embedded audio, RCA L/R x1		
4	Video Bitrate	Record Only: Up to 16Mbps (1080p50/60) Stream Only: Up to 10Mbps (1080p50/60) Rec+Stream: 36Mbps (1080p50/60)		
5	Streaming Platforms	Should support simultaneous streaming to any two platforms like YouTube, Facebook or websites		
6	Recording	Simultaneous recording in H.264 MP4 format while streaming in RTMPS, RTMP, RTSP, TS, or		
8	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

16.	VIDEO RECORDER AND PLAYER			
Make and Model No. of Equipment Quoted: **(Appoved Makes: AJA, BMD, Datavideo, Atomos)**				
1	Application	File Based Video Recorder / Player		
2	Slots	Should have Two slots for HDD/SSD		
3	Inputs	SDI, HDMI, Analog Audio (Balanced)		
4	Output	SDI, HDMI, Analog Audio (Balanced)		
5	Reference	Refrence Input required		
6	Storage	2x 500GB HDD storage module with either built in USB 3.0 connection or to be Supplied with 1x External Dock to read HDD		
7	File Format support	Apple ProRes, DNxHD		

17.	16 CHANNEL ANALOG AUDIO MIXER CONSOLE			
Make and Model No. of Equipment Quoted: **(Approved Makes: Soundcraft, Yamaha, Behringher, Mackie, Tascam)**				
1	Mixing Channels	16 Channel or better Audio Mixer with Min. 12 Mic Pre amps on Balanced XLR		
2	AUX	4 x Pre/Post or better		
3	Subgroups	4 mono/2 stereo or better		
4	Mic inputs	MIC: 12		
5	Phantom Power	Phantom Power on all mic channels		
6	Fader	100mm		
7	USB Interface	2-in/2-out		
5	Bands	4-band		
6	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

18.	AMPLIFIED/POWERED SPEAKERS			
Make and Model No. of Equipment Quoted:				
(Approved Makes: KRK, Harman, Yamaha, Audix, Genelac, Tannoy)				
1	Type	2 Way Active Studio Monitor		
2	Frequency Range	50 Hz-18 kHz or better		
3	Max Peak SPL	100 dB or better		
5	LF Driver Size	Min. 5" to Max. 6.6"		
6	HF Driver Size	1" or better		
7	Low-Frequency Amplifier	40 watts or Better		
8	High-Frequency Amplifier	40 watts or Better		
9	Total Power Output	80 Watt or Better		
10	Input Types	1 x XLR, 1 x TRS Balanced		
11	AC Input Voltage	100-240 VAC +/- 10% 50/60 Hz		
12	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

19. DIGITAL SIGNAL PROCESSOR				
Make and Model No. of Equipment Quoted:				
(Approved Makes: Harman, Rane, Klark Teknik, Labgruppen,Yamaha)				
1	Feature	Networked Digital Signal Processor		
2	Input	12 Analog Inputs (with 48v Phantom Power per		
3	Output	8 Analog Outputs		
4	GPIO	12 Control Inputs and 6 Logic Outputs for GPIO Integration or better		
5	Indicators	Front Panel LED Indication		
6	Analog Inputs	12 electronically balanced		
7	Mic/Line Inputs	Nominal gain 0dB, electronically switchable up to +48dB, in+6dB steps		
8	CMRR	75dB at 1KHz or better		
9	Phantom Power	48V nominal, selectable per input		
10	Analog Outputs	8 electronically balanced		
11	Frequency Response	20Hz-20KHz or Better		
12	Dynamic Range	108dB typical or better		
13	Control Ports	12 inputs and 6 outputs		
14	Control Network	RJ45 Ethernet connector		
15	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

20. AUDIO AMPLIFIER				
Make and Model No. of Equipment Quoted: **(Approved Makes: Harman, Labgruppen, Yamaha, LD Systems)**				
1	Type	4 channel amplifier with Network control, DSP, Monitoring Class D or better		
2	Output Power	300W per output channel		
3	Frequency response	20Hz - 20kHz +/-0.5dB		
4	Input Impedance	20 kΩ balanced, 10 kΩ unblanced		
5	Crosstalk	80dB or better		
6	Voltage Gain	4/8Ω, 70Vrms and 100Vrms Operation : 34dB		
7	Common Mode Rejection	70dB or better		
8	S/N ratio	104dB or better		
9	DSP	On-board Digital Signal Processor		
10	Other Features	Input Router • Input Delay – Up to 1000ms • Input Parametric EQ – 8 band • Crossover • Output Parametric EQ – 8 band • Output Delay – Up to 100ms		
11	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

21. TWO WAY LOUD SPEAKERS				
Make and Model No. of Equipment Quoted: **(Approved Makes: Harman, Bose, B&W, Tannoy, LD Systems)**				
1	Type	Two-way Min. 5" to Max 6.5" Wall Mount Speaker		
2	Frequency range	85 Hz – 18 kHz or Better		
3	Nominal coverage	120ºH x 120ºV		
4	Components	5.25 inch LF and 0.75 inch HF (+- 5%,)		
5	Power Capacity	60 Watts		
6	Nominal impedance	8 ohms		
7	Transformer Taps	10 W, 5 W (& 2.5W @ 70V)		
8	SPL	100 dB at 8 Ohm or Better		
9	Accessories	Wall-mounting system		
10	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

	22. WIRELESS LAPEL MICROPHONE			
Make and Model No. of Equipment Quoted: **(Approved Makes: Sennheiser, AKG, Audio Technica, Shure)**		
	Receiver			
1	Switching bandwidth	30 MHz or better		
2	Sensitivity	6.3 dBμV / -100 dBm or better		
3	Diversity System	True Diversity / Microprocessor-controlled		
4	Modulation	Wideband FM		
5	Audio bandwidth	40 – 18 000 Hz or better		
6	T.H.D.	0.3 % or better		
7	SNR	100 dB or better		
8	Audio outputs	1 x XLR sockets balanced, 1 x TS ¼" / 6.3 mm jack sockets unbalanced		
	Transmitter (Battery Operated)			
9	Switching bandwidth	≤ 30 MHz		
10	RF output power	10 to 50 mW		
11	Modulation	Wideband FM		
12	Audio input	TB3M / 3-pin mini-XLR socket or Compatible with Transmitter		
13	Audio bandwidth	40 – 18 000 Hz or better		
14	T.H.D.	0.7 % or better		
15	SNR	100 dB or better		
	Lapel Mic			
16	Condenser lavalier microphon	Cardioid Polar Pattern		
17	Audio frequency bandwidth	150 - 18000 Hz		
18	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

	23. LAPEL MICROPHONE			
Make and Model No. of Equipment Quoted: **(Approved Makes: Sennheiser, AKG, Audio Technica, Shure)**		
1	Transducer Principle	Pre-polarized condenser		
2	Frequency Range	40–18,000 Hz or better		
3	Polar Pattern	Omni-directional		
4	Sensitivity	Sensitivity at 1,000 Hz: 7 mV/Pa		
5	Sound Pressure Level for 1% THD	110 dB or better		
6	S/N Ratio	60 dB or better		
7	Phantom Power	9–52 V phantom power		
8	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

24. WIRELESS HANDHELD MICROPHONE				
Make and Model No. of Equipment Quoted: **(Approved Makes: Sennheiser, AKG, Audio Technica, Shure)**				
	Receiver			
1	Switching bandwidth	≤30 MHz		
2	Sensitivity	6.3 dBµV / -100 dBm or better		
3	Diversity System	True Diversity / Microprocessor-controlled		
4	Modulation	Wideband FM		
5	Audio bandwidth	40 – 18 000 Hz or better		
6	T.H.D.	0.3 % or better		
7	SNR	100 dB or better		
8	Audio outputs	1 x XLR sockets balanced, 1 x TS ¼" / 6.3 mm jack sockets unbalanced		
	Transmitter (Battery Operated)			
9	Microphone capsules	Dynamic (super cardiod)		
10	Switching bandwidth	≤30 MHz		
11	RF output power	10 to 50 mW		
12	Audio bandwidth	40 – 18 000 Hz or better		
13	Modulation	Wideband FM		
14	Max. SPL	120 dB or better		
15	T.H.D.	0.7 % or better		
16	SNR	120 dB or better		
17	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

25. EAR PIECE FOR ANCHOR				
Make and Model No. of Equipment Quoted: **(Approved Makes: Telex, Voice Technologies)**				
1	Type	Anchor Ear Piece with acoustic Tube with 125Ω, 5' (1.5M) cord, and ¼" plug.		
2	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

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26.	**WIRELESS LAPEL MICROPHONE FOR OUTDOOR WITH CAMERA**			
Make and Model No. of Equipment Quoted:				
(Approved Makes: Sennheiser, Azden, Saramonic, Audio Technica)				
1	System Package	Camera Mount Receiver preferably to support two microphone simultaneously, XLR output Cable, Body pack Transmitter with Lavalier and Handheld Microphones		
	System			
2	Antenna	High-Gain Antenna		
3	Display	Digital LCD Display w/ Multifunction Readout		
4	Headphone Output	Headphone Output on Receiver		
	Receiver			
5	Frequency Response	50Hz – 15kHz or Better		
6	S/N Ratio	70 dB or better		
7	Output Impedance	1k Ohms		
8	Type of Reception	FM		
9	Oscillator	PLL Synthesized		
10	Power	Powered by 2 "AA" Batteries		
	Transmitter			
11	Frequency Response	50Hz – 15kHz		
12	RF Power	25mW or better		
13	Oscillator	PLL Synthesized		
14	Power	Powered by 2 "AA" Batteries		
15	Microphone	Omni-directional lapel microphone		
16	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

27. **SHOTGUN MICROPHONE**				
Make and Model No. of Equipment Quoted:				
(Approved Makes: Sennheiser, AKG, Azden, Saramonics, Audio Technica)				
1	System	Directional shotgun microphone		
2	Directional Pattern	Cardioid		
3	Maximum SPL	120 dB or more		
4	Sensitivity	-36dB or better		
5	Phantom Power	Yes Required		
6	Frequency Range	80Hz to 18kHz or Better		
7	Output Connection	3-pin XLR, balanced		

28.PROFESSIONAL HEADPHONE

Make and Model No. of Equipment Quoted:
(Approved Makes: AKG, Sennheiser, Audio Technica, Bose)

1	Headphone type	Closed-back		
2	Wearing Style	On-ear		
3	Audio frequency bandwidth	20 - 20000 Hz or Better		
4	Sensitivity headphones	100 dB SPL or Better		
5	Rated Impedance	55 Ohms or Better		
6	Max Power	200mW or better		
7	Audio Interface	Type Stereo plug: 3.5mm (1/8") with 6.3 mm (1/4") screw-on adapter		
8	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

29.AUDIO EMBEDDER

Make and Model No. of Equipment Quoted:
(Approved Makes: AJA, Data video, Cobalt, Ross)

1	Type	SDI and 2-CH Audio Embedder		
2	Input	1x 3G-SDI BNC or better		
3	Output	1x 3G-SDI BNC or better		
4	Audio Inputs	RCA / Mini-XLR /XLR inputs		
5	Output	Two or more SDI outputs with embedded Audio		
6	Firmware Upgradation	Feature Required		
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

30.SDI DISTRIBUTON AMPLIFIER

Make and Model No. of Equipment Quoted:
(Approved Makes: AJA, Data video, Cobalt, Ross)

1	Input	2 x 3G/HD/SD-SDI inputs		
2	Output	6 x 3G/HD/SD-SDI distribution outputs with re-		
3	Audio	Should support embedded Audio SDI		
4	Input Control	Two input video sources should be controlled by A/B switch or GPI remote (non-locked)		
	Supported video formats:			
5	3G-SDI	1080P 50/59.94/60		
6	HD-SDI	1080P 23.98/24/25/30 1080i 50/59.4/60 720P 50/59.94/60		
7	SD-SDI	525i /625i		
8	Firmware Upgradation	Feature Required		
9	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

31. SDI TO HDMI CONVERTER

Make and Model No. of Equipment Quoted:
(Approved Makes: AJA, Data video, Cobalt, Ross)

1	Input	1 x SDI, 1 x unbalanced audio		
2	Output	1 x HDMI, 1 x SDI (loop through)		
3	Output Resolutions	Video output format is the same as the input format		
4	Equalizer	Should be supported		
5	Reclock	Should be supported		
6	Firmware Upgradation	Feature Required		
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

32. SDI TO USB CONVERTER FOR ONLINE VC MEETING

Make and Model No. of Equipment Quoted:
(Approved Makes: Datavideo, AJA, Osprey, Birddog)

1	Type	SDI-USB Capturing device		
2	Compatibility	Should be compatible with various operating		
3	Compatibility	Amcap, Google Plus Hangouts, OBS (Open Broadcast Software), Skype, VLC, Xsplit Broadcaster, Zoom.us Linux: VLC, OBS Mac OS X: OBS, Quicktime player, VLC, Facetime		
4	Input	1x HD/3G-SDI, Audio Input SDI Embedded Audio & 3.5 mm stereo in		
5	Output	1x USB 3.0, 1x SDI Loop out		
6	Supported Input & Output Video Formats	1920 x 1080p 60/59.94/50/30/29.97/25/24/23.976 1920 x 1080i 60/59.94/50 (de-interlaced out) 1280 x 720p 60/59.94/50		
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

33. UP/DOWN/CROSS CONVERTER

Make and Model No. of Equipment Quoted:
(Approved Makes: AJA, Datavideo, Cobalt, Ross)

1	Type	Up/Down/Cross Conversion		
2	Input	VGA x 1, HDMI x 1 , HD/SD-SDI x 1 or better		
3	Output	SDI x 2, HDMI x 1, SDI Loop thru BNC or better		
4	Supported video output formats:	1080p60/59.94/50, 1080p30/29.97/25/24/23.98, 1080i60/59.94/50, 720p60/59.94/50, 525i, 625i		
5	Audio Format (Input):	Analog Audio L/R : stereo audio SDI / HDMI embedded audio		
6	Audio Format (Output):	SDI embedded audio up to 8CH, 48KHz, PCM audio HDMI embedded audio up to 8CH, 48KHz, PCM audio		
7	Firmware Upgradation	Feature Required		
8	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

34.	**PROFESSIONAL SSD BASED DIGITAL VIDEO RECORDER & PLAYER WITH**			
Make and Model No. of Equipment Quoted: **(Approved Makes: AJA, Datavideo, Atomos, BMD)**				
1	Display Size	17" or better		
2	Resolution	1920 x 1080 or Better		
3	Bit depth	10-bit or better		
4	Brightness	1200nit or better		
5	Video Input	Selectable Dual 12G/6G/3G/1.5G SDIHDMI (2.0)		
6	Video Output	SDI 1x 4K-SDI 12G/6G/3G/1.5G, HDMI (2.0)		
7	Audio In/Out	8 Channel in HDMI and SDI embedded or better Line in / Mic in Headphone		
8	Color Gamut	REC709		
9	Format Support	720p 50/60, 1080i 50/60 1080pSF 24/25/30 1080p 24/25/30/50/60/100/120 2160p 24/25/30/50/60		
10	Power	DC input direct or through adaptor and battery operable		
11	Recording Media	2 Qty - Min 500GB SSD with any required enclosure should be supplied		
12	Genlock	Required		
13	Docking Device	External docking device with USB 3.0 connector for connection of above SSD with Host computer		
14	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

35.	**100 WATTS LED COOL LIGHTS FOR STUDIO**			
Make and Model No. of Equipment Quoted: **(Approved Makes: Aultra, Shenoy, Canare, Leksa)**				
1	Type	100W LED bi-color light having temperature range 3000K to 6000K complete with 4 leaf barn door, diffusers, normal operated yoke provided.		
2	Lamp power	100W or better		
3	Color Temperature	3000K /6000K		
4	Dimming	0-100% dimming through manual and DMX		
5	CRI	CRI:> 90 or better		
6	Beam Angle	110°		
7	Operating Temperature	-30°C to +55°C		
8	Protection Rating:	IP 20		
9	Mounting Accessory	Die cast aluminium "C" clamps and Safety bond 1.5Mtr long with lock clip		
10	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

36. 200 WATTS LED FRESNEL SPOT LIGHT FOR STUDIO				
Make and Model No. of Equipment Quoted: **(Approved Makes: Aultra, Shenoy, Canare, Leksa)**				
1	Type	200 W LED light with color temperature 3200K/5600K panel complete with 4 leaf barndoor, normal operated yoke, Ceiling mounted, integrated dimmer enabled instant dimming from 0 to 100%. Color conversion filter from day light to tungsten.		
2	Lamp power	200W or better		
3	Color Temperature	3200K /5600K		
4	Dimming	0-100% through manual and DMX		
5	CRI	CRI:> 90 or better		
6	Beam Angle	10 -50 deg or 30- 60deg		
7	Operating Temperature	-30°C to +55°C		
8	Protection Rating:	IP 20		
9	Mounting Accessory	Die cast aluminium "C" clamps and Safety bond 1.5Mtr long with lock clip		
10	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

37. DIMMER CONTROL				
Make and Model No. of Equipment Quoted: **(Approved Makes: Semlessly Compatible with Offered Studio Lights)**				
1	Type	Professional 24-Channel or better DMX Lighting Console		
2	Feature Support	24 preset channels, assignable to 512 DMX channels		
3	Feature Support	Dimmer control via DMX or analog output		
4	Feature Support	Illuminated display/controls and Lamp socket for easy operation in dark stage environments		
5	Accessories	1x8 DMX Distribution unit		
6	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

SECTION B - PRODUCTION STORAGE & POST PRODUCTION

38.	ENTERPRISE NAS WITH 48 TB STORAGE			
Make and Model No. of Equipment Quoted: **(Approved Makes: Info trend, Promise, DDP, QSAN)**				
1	Form Factor	3U 16-bay		
2	Onboard Host Ports	4 x 1Gb/s iSCSI ports, 2 x10Gig ports		
3	Number of Drives	Initially populated with 8 x 6TB Drives. Provision to Expand with Additional Drives in remaining Vacant Hard disk slots		
4	Drive Interface	6Gb/s SATA		
5	Disk Support	3.5" SATA 6Gb/s HDD, 6TB, 7200RPM		
6	File Level Protocol Support	CIFS/ SMB, AFP, NFS, FTP, WebDAV		
7	Block Level Protocol Support	FC, FCoE, iSCSI, SAS		
8	Object Protocol Support	RESTful API		
9	Cloud Gateway	Amazon S3, Microsoft Azure, Alibaba Cloud, OpenStack		
10	Feature Support	Should Support Expansion Enclosures for Future Expansion		
11	RAID levels supported	RAID 0,1,(1+0), 3, 5, 6, 10, 30, 50, 60		
12	Feature Support	Online expansion by Adding new drives, Copying and replacing drives with drives of larger capacity		
13	Feature Support	RAID migration Configurable stripe size and write policy per system		
14	Network Configuration	IPv6 support, Fixed or dynamic IP address, Dual Gigabit Ethernet with Jumbo Frame, Port trunking/ NIC teaming/ Link aggregation (IEEE 802.3ad), DHCP client, MPIO, MC/S support		
15	Access Right Management	User account management, Group management, Folder management (Folder and subfolder access control		
16	Feature Support	Folder quota, Comprehensive access control action items (All Controls, Read, Read & Run, Write, Modify, List), Support Windows Active Directory Authentication (Domain Users Login via CIFS/ SMB, AFP, FTP & file explorer), LDAP on Linux		
17	OS Support	Windows Server 2008 / 2008 R2 / 2012 / 2012 R2 (including Hyper-V), Windows 7 SP1 / Windows 8.1, RedHat Enterprise Linux, SUSE Linux Enterprise, Sun Solaris, Mac OS X, VMware, Citrix XenServer		
18	Accessories	Should be supplied with 2 SFP+ Connectors to connect with Ethernet Switch on 10G network		

39. 24 PORT ETHERNET SWITCH				
Make and Model No. of Equipment Quoted: **(Approved Makes: Dell, Cisco, Edgecore, HP)**				
1	Type	24 Port Ethernet Switch		
2	Layer	Layer 2 Switch		
3	Network Media	22 x 10/100/1000 Mbps, 2 x 10G SFP+		
4	No of Ports	24 Port		
5	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

40. WORKSTATION FOR VIDEO EDITING				
Make and Model No. of Equipment Quoted: **(Approved Makes: APPLE)**				
1	Peripherals	27-inch 4K display, key board & mouse		
2	Processor	3.5GHz 08-core Intel Xeon W processor turbo boost upto 4 Ghz (Mac Pro)		
3	RAM	32GB		
4	Storage	1TB SSD, 2TB internal or External Drive		
5	Graphics Card	8GB Radeon Pro or better		
6	Ports	4x Thunderbolt Ports		
7	I/O Card	Deck-Link SDI 4K		
8	Software	Final Cut Pro (latest version) Adobe CCT Package (3 years subscription)		

41. AMPLIFIED/POWERED SPEAKERS (PAIR)				
Make and Model No. of Equipment Quoted: **(Approved Makes: Harman, Tannoy, Audix, LD Systems)**				
1	TRANSDUCERS	LF: 135 mm (5.25 in) low frequency loudspeaker or better HF: 19 mm (.75 in) Polycarbonate dome tweeter or better		
2	FREQUENCY RANGE	80 Hz - 20 kHz or better		
3	AMPLIFIER POWER	35 Watts per channel or better		
4	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

42.	PROFESSIONAL HEADPHONE			
Make and Model No. of Equipment Quoted:				
(Approved Makes: AKG, Sennheiser, Audio Technica, Bose)				
1	Headphone type	Closed-back		
2	Wearing Style	On-ear		
3	Audio frequency bandwidth	20 - 20000 Hz or Better		
4	Sensitivity headphones	100 dB SPL or Better		
5	Rated Impedance	55 Ohms or Better		
6	Max Power	200mW or better		
6	Audio Interface	TypeStereo plug: 3.5mm (1/8") with 6.3 mm (1/4") screw-on adapter		
7	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

43.	ONLINE UPS SYSTEM			
Make and Model No. of Equipment Quoted:				
(Approved Makes: Eaton, APC, Emerson, Liebert, LDS)				
1	UPS	10 KVA 1:1 (1 Phase In: 1 Phase Out) On-Line UPS System with 30 Minutes Backup		
2	Batteries and Accessories	Suitable rated batteries to provide backup for 30 Mins or more along with Battery Rack, interlink battery cables		
3	Supplied Accessories	All necessary cables and accessories should be supplied for completeness of the system		

44. SYSTEM INSTALLATION MATERIAL AND CHARGES				
1	Cabling Approved Makes: Beldon, Canare, New Tek, Amphenol	It is required to set-up the facility for HD/SD operations, therefore all the cabling should seemlessly support required operations.		
2	Installation Material	All installation materials including, power cables, interconnection cables, connectors and other accessories (required for installation of the complete system shall be quoted).		
3	System Completeness	Completeness of the system will be responsibility of the bidder. Any hardware and/or software including passive and active devices required for completeness of the technical workflow shall be quoted. Bidder shall be responsible for technical and operational completeness of the entire system. Bidder can quote external Input and Out put converters, Expansion cards etc. along with the system which should be compatible with camera and other sources out puts / controls and to complete the work flow.		

4	Workflow Diagram	The bidder has to provide schematic diagram of the technical workflow to ensure the workability of the offered solution in all respects.		
5	Any Additional Items for Complete the workflow	Bidder must mention any additional items require to complete the workflow with proper justification.		

CHECK LIST

S No.	ITEM	COMPLIED (YES/NO)	PAGE NO IN THE BID DOCUMENT
1	Have you enclosed the company particulars in the prescribed format as per Annexure -III		
2	Have you prepared the bid in two separate parts – technical and commercial		
3	Have you enclosed Bid Security Declaration as per Annexure IX.		
4	Have you clearly specified the make and model no. of the equipment quoted and enclosed the technical specification and product features		
5	Have you enclosed certificate from the Original Equipment Manufacturer (OEM) for offering key equipment in the bid to NISD and for supporting the equipment for a period of not less than 5 years including two years warranty from the date of commissioning/acceptance of the equipment.		
6	Have you enclosed the make and model No. of the equipment quoted as per Annexure-IV		
7	Have you enclosed Compliance Statement as per Annexure-V		
8	Have you enclosed declaration as per Annexure-VII		
9	The offer should be valid for a minimum period of 6 months from the date of opening of the tender		

DECLARATION

1. I, ……………………………………………. Son / Daughter of Shri ………………………….. Proprietor / Partner / Director / Authorised Signatory of …………………………………………………………………… is / am competent to sign this declaration and execute this tender document.

2. I have carefully read and understood all the terms and conditions of the tender and hereby convey my acceptance of the same.

3. The information / documents furnished in the above application alongwith technical bid (technical specification / Bill of Material) are true and authentic to the best of my knowledge and belief. I / we, am / are well aware of the fact that furnishing of any false information / fabricated document would lead to rejection of my tender at any stage besides liabilities towards prosecution under appropriate law.

4. I declare that my company / firm / agency is OEM authorized service Agency. {Authorized channel service agency must enclose valid authorization certificate from OEM for back-end arrangement of SITC for supply of equipment}.

Signature of Authorized Person

Date:

Full Name:

Place: Company's Seal:

Note: The above declaration, duly signed and sealed by the authorized signatory of the company, should be enclosed with Technical Bid.

Financial Bid Format

A. Equipment

Sl. No.	Item	Unit Cost	Taxes	Total unit Cost	Qty.	Total Cost
1.	BROADCAST QUALITY 1" 4K CAMCORDER FOR OUTDOOR AND INDOOR SHOOT				1	
2.	BROADCAST QUALITY PTZ CAMERA				4	
3.	REMOTE CONTORL PANEL FOR PTZ CAMERA				1	
4.	TRIPODS WITH DOLLY FOR CAMERA LOAD				3	
5.	TRIPOD WITH DOLLY FOR CAMERA AND TP LOAD				1	
6.	TELEPROMPTER SYSTEM				1	
7.	LAPTOP COMPUTER/LAPTOP SYSTEMS FOR TELEPROMPTER				1	
8.	DIGITAL VIDEO PRODUCTION SWITCHER FOR TV STUDIO				1	
9.	49" LED DISPLAY PANEL FOR PCR MULTIVIEW				1	
10.	55" LED DISPLAY PANEL FOR STUDIO FOLDBACK				2	
11.	FULL HD INTERACTIVE DISPLAY PANEL				1	
12.	FIELD MONITOR				1	
13.	TRACKLESS 3D VIRTUAL STUDIO SYSTEM				1	
14.	AUDIO DELAY UNIT				1	
15.	VIDEO STREAMING ENCODER				1	
16.	VIDEO RECORDER AND PLAYER				1	
17.	16 CHANNEL ANALOG AUDIO MIXER CONSOLE				1	
18.	AMPLIFIED/POWERED SPEAKERS				2	
19.	DIGITAL SIGNAL PROCESSOR				1	
20.	AUDIO AMPLIFIER				1	
21.	TWO WAY LOUD SPEAKERS				4	
22.	WIRELESS LAPEL MICROPHONE				3	
23.	LAPEL MICROPHONE				3	
24.	WIRELESS HANDHELD MICROPHONE				2	

25.	EAR PIECE FOR ANCHOR				3	
26.	WIRELESS LAPEL MICROPHONE FOR OUTDOOR WITH CAMERA MOUNTABLE RECEIVER				1	
27.	SHOTGUN MICROPHONE				1	
28.	PROFESSIONAL HEADPHONE				2	
29.	AUDIO EMBEDDER				2	
30.	SDI DISTRIBUTON AMPLIFIER				2	
31.	SDI TO HDMI CONVERTER				4	
32.	SDI TO USB CONVERTER FOR ONLINE VC MEETING				1	
33.	UP/DOWN/CROSS CONVERTER				3	
34.	PROFESSIONAL SSD BASED DIGITAL VIDEO RECORDER & PLAYER WITH INBUILT DISPLAY				1	
35.	90 WATTS LED COOL LIGHTS FOR STUDIO				14	
36.	200 WATTS LED FRESNEL SPOT LIGHT FOR STUDIO				4	
37.	DIMMER CONTROL				1	
38.	ENTERPRISE NAS WITH 48 TB STORAGE				1	
39.	24 PORT ETHERNET SWITCH				1	
40.	WORKSTATION FOR VIDEO EDITING				1	
41	AMPLIFIED/POWERED SPEAKERS (PAIR)				1	
42.	PROFESSIONAL HEADPHONE				1	
43.	ONLINE UPS SYSTEM				1	
44.	SYSTEM INSTALLATION MATERIAL AND CHARGES				1	
	TOTAL					

B. ACOUSTICS WORK FOR NISD, STUDIO WITH MATERIAL AND LABOUR

	SITC OF STATE OF THE ART SEMI-CIVIL & ACOUSTICS WORKS/TREATMENT OF STUDIO : The vendor may visit "Present assigned rooms at NISD Building to physically ascertain customized requirements at site before quoting quantities and rates for various items under this head **Studio Size Approx 27(L) x 21 (B) x 11 (H) Feet, Window Size Approx. 5 ft x 5.5 ft**					
	The bidder should ensure that the noise level within the studio room is within 30 dB level. Bidders need to quote Unit rates so that actual cost can be calculated based on measurements.					
	Studio Wall 1 = LXH Studio Wall 2 = BXH Studio Wall 3 =LXH Studio Wall 4 = BXH					
S.No.	**ITEM**	**Cost per sq feet/ unit**	**Taxes**	**Total cost per sq feet/ unit**	**Area/ no of units**	**Total cost**
1	**Providing of Acoustic Treatment on the Studio Walls and Ceiling**					
1.01	Rock Wool of 32 kg density to be filled between wall and 12 mm thick ply which will be finished with Laminate (inside of the studio) Covered with Virgin polythene and chicken mesh) should be used up to 3 feet from floor and to be filled between wall and 12 mm thick ply which will be finished with 1 mm laminate.				288 Sqft	
1.02	Above 3 feet - Rockwool of 48 kg density to be filled between Wall and the perforated Gypsum. Rockwool should be covered with virgin polythene.				768 Sqft	
1.03	Providing and Fixing of acoustics Grid Ceiling (600x600mm) with 15 mm grid system (NRC 0.7) and supports Ceiling shall also be acoustically treated with 50 mm thick layer of Rockwool of 40 kg density in a Grid of 2'x2' made up of wire mesh, which will be placed on the				567 Sqft	

	perforated Gypsum board, which will be further finished with the paint after jointing and taping					
1.04	Providing and making Observation window in existing Brick wall. 4ft x 3ft Providing 8 mm thick Sandwich toughened Glass Observation Window minimum gap between two glasses will be 2" frame work between Studio and PCR.				12 Sqft	
1.05	Providing and fixing of acoustics 55 mm thick single leaf Door of size 7 x 3.5 ft with vision panel (Peeping window) of 12 inch x 12inch approx. and the door hardware including door closer, handle, lock and a door stopper **Studio has 2 Entrance Doors**				49 Sqft	
1.06	**Studio Light Grid** Providing and Installation of MS (Tube size 50 mm Dia) Studio Lighting grid of 4'x4' spacing and properly painted with two coats of primer and enamel paint with Proper power arrangement for Studio Lights and Cable trenches where ever is required for Studio Dimmer lights.				567 SqFt	
1.07	Providing and laying of 2mm thick PVC flooring in Studio area				567 SqFt	
1.08	Providing and Fixing of designer Anchor / Teacher Table of size of 9 ft length x 3 ft width x 2.5 ft height or better as per the set requirement with slight curves with laminate finish and proper edge binding in suitable ply				27 SqFt	
1.09	Studio Set with good quality and aesthetically good looking Back drop around the 65 " Interactive Screen. Interactive Screen shall be embedded in the Set. The set will be made of combination of commercial ply and MDF of suitable thickness for the set. The Set will also have a raised platform of 100 thickness in front of the set.				1	

	Necessary arrangements will be made for colour changing LED light strips at various points of the set.					
1.10	Green Chroma Set 12 Feet wide, 10 Feet on Wall and at least 6 Feet on Floor with curved edge from Wall to floor. With Proper green fabric to provide rich Chroma key effect made up of ply and a carpet of green colour to be pasted on it.				192 SqFt	
1.11	Closing of all glass windows/partitions with 12 mm MDF painted black from one side and mounted in front of the glass with drywall partition channels				3	
1.12	Wooden Cable Tray - For laying of Cable between PCR and Studio. (Across the periphery of Studio and PCR)					
1.13	Dismantling of Existing False ceiling tiles and grid.					
2	**SITC OF STATE OF THE ART SEMI-CIVIL & acoustics WORKS/TREATMENT OF PCR**					
	PCR Size 13′(L)x 21′ (B) x11′ (H)					
	PCR Wall 1 = LXH PCR Wall 2 = BXH PCR Wall 3 = LXH PCR Wall 4 = BXH					
	Providing of acoustics Treatment on the Studio Walls and Ceiling					
2.01	Rock Wool of 32 kg density to be filled between wall and 12 mm thick ply which will be finished with Laminate (inside of the studio) Covered with Virgin polythene and chicken mesh) should be used up to 3 feet from floor and to be filled between wall and 12 mm thick ply which will be finished with 1 mm laminate.				204 SqFt	

2.02	Above 3 feet - Rockwool of 48 kg density to be filled between Wall and the perforated Gypsum as being proposed for acoustics Rockwool should be covered with virgin polythene.				544 SqFt	
2.03	**Providing and Fixing of acoustic Grid Ceiling (600x600) with 15 mm grid system (NRC 0.7) and supports** Ceiling shall also be acoustically treated with 50 mm thick layer of Rockwool of 40 kg density in a Grid of 2'x2' made up of wire mesh, which will be placed on the perforated Gypsum board, which will be further finished with the paint after jointing and taping				273 SqFt	
2.04	Providing and fixing of acoustics 55 mm thick single leaf Door of size 7 x 3.5 ft with vision panel (Peeping window) of 12 inch x 12inch approx and the door hardware including door closer, handle, lock and a door stopper				24.5 SqFt	
2.05	Providing and laying of 2mm thick PVC flooring				273 SqFt	
2.06	Providing and Fixing of Technical Table at PCR of size 15(L) X 3F(B) X 2.5(H) with Extended Slanted extention for Equipement placement above 2.5feet of approx 900mm with laminate finish and suitable suitable ply. It should also have a provision for cable laying trench, power distribution units for equipment to be placed on technical table.				45 SqFt	
2.07	Providing and Fixing of Cabinets 7ft x 3 ft & 450mm depth (approx), made up of commercial board with Shutters in Prelam MDF				21 SqFt	
2.08	Closing of all glass windows/partitions with 12 mm MDF painted black from one side and mounted in front of the glass with drywall partition channels				1	
2.09	Wooden Cable Tray - For laying of Cable between PCR and Studio.				1	

3	**EDIT ROOM**					
3.01	Providing and Fixing of Technical Table at EDIT area of size 15(L) X 2.5 F(B) X 2.5(H) with laminate finish and proper edge binding in suitable ply. It should also have a provision for cable laying trench, power distribution units for equipment to be placed on technical table.				37.5 SqFt	
4	**SOUNDLOCK AND PASSAGE WORKS** **Bidder has to make a sound lock area of approx size 4 ft x 5ft at the entrance of Studio**					
4.01	Sound lock area to be made inside the studio and should be treated with acoustics works. Partition wall to be made of size 4 ft x 5 ft					
4.02	Rock Wool of 32 kg density to be filled between wall and 12 mm thick ply which will be finished with Laminate (inside of the studio) Covered with Virgin polythene and chicken mesh) should be used Up to 3 feet from floor and to be filled between wall and 12 mm thick ply which will be finished with 1 mm laminate.				27 SqFt	
4.03	Above 3 feet - Rockwool of 48 kg density to be filled between Wall and the perforated Gypsum as being proposed for acoustics Rockwool should be covered with virgin polythene.				81 SqFt	
4.04	**Providing and Fixing of acoustic Grid Ceiling (600x600) with 15 mm grid system (NRC 0.7) and supports** Ceiling shall also be acoustically treated with 50 mm thick layer of Rockwool of 40 kg density in a Grid of 2'x2' made up of wire mesh, which will be placed on the perforated Gypsum board, which will be further finished with the paint after jointing and taping				20 SqFt	

4.05	Providing and fixing of acoustics 55 mm thick single leaf Door of size 7 x 3.5 ft with vision panel (Peeping window) of 12 inch x 12inch approx and the door hardware including door closer, handle, lock and a door stopper				24.5 SqFt	
5	**ELECTRICAL WORK**					
5.01	The electrical points should be sufficient for lights and equipment and should be of standard makes modular switches and sockets, with short circuit and overload protection. Studio, Sound lock and PCR Should be equipped with 2x2 LED Panel Lights in Sufficient quantity to illuminate the operational area With separate switches. The bidder should use good quality copper wires and PVC tray etc to carry wires and cables etc.				1	
	TOTAL					

A. **Installation Charges**
B. **Training Charges**
C. **AMC charges as % of equipment cost (Please specify the % as well as the charges)**
D. **Any other Item/charges**

Total Cost

Sl. No.	Item	Cost
A.	**Equipment cost**	
B.	**Acoustic work**	
C.	**Installation Charges**	
D.	**Training Charges**	
E.	**Annual Maintenance charges for three years**	
F.	**Any other charges**	
	Grand Total	

(Please specify the cost in words and figures)

PROFORMA FOR BID SECURITY DECLARATION

(To be submitted by bidder on its Company Letterhead)

It is here submitted that if I/We ---------------------------- (Name of bidder/firm/company) withdraw or modify the bids during period of validity, or if I/We ---------------------------- (Name of bidder/firm/company) are awarded the contract and I/We -- (Name of bidder/firm/company) fail to sign the contract or to submit a performance security before the deadline defined in the tender document, I/We -- (Name of bidder/firm/company) will be suspended to take part in NISD's tendering process for a period of two years from the date of occurrence of the of the above mentioned default.

Authorized Signatory

Name &Seal

Date: