REQUEST FOR PROPOSAL (RFP)

FOR SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF TV STUDIO SETUP AT SATYAJIT RAY FILM & TELEVISION STUDIO. KOLKATA.

Ref No. BECIL/SRFTI-KOLKATA/2017

Dated: 16.10.2017

Broadcast Engineering Consultants India Ltd

(A Government of India Enterprise)

(A Mini Ratna Company)

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SECTION I - GENERAL

1.1   RFP SCHEDULE AND CRITICAL DATES

The RFP tentative schedule and critical dates are shown below:

	Event	Date
	Event	**Date**
1)	**RFP Issue to Prospective Bidders**	16.10.2017
2)	**Bidder Queries & Response (via mail)**	23.10.2012
3)	**Pre Bid Meeting**	27.10.2012
4)	**Submission of Proposals/bids**	06.11.2017 up to 1200 hours
5)	**Technical opening of Bids**	06.11.2017 at 1530 hours
6)	**Technical evaluation of proposal**	06.11.2017 to 12.11.2017
7)	**Opening of Financial Bid**	To be intimated
8)	**Commercial Bid evaluation**	To be intimated
9)	**Award of Purchase Order**	To be intimated

BECIL reserves the right to amend the RFP tentative schedule and critical dates. Original tender document against a fee of **Rs.4000/-** can be purchased from

Corporate Office: C-56, A/17, Sector-62, Noida-201301, U.P. **till 20/10/2017 up to 1200 hours**

The tender document can also be downloaded from our website **www.becil.com** and a Demand draft of Rs.4000/- must be submitted along with the bid otherwise the bid will be rejected.

No tender document will be issued after the said date.

1.2   INTENT OF THE REQUEST FOR PROPOSAL

General Information

SRFTI Named after the legendary film maestro Satyajit Ray, the Institute has emerged as a national centre of excellence which offers post-graduate program in Cinematic studies.

The intent of this RFP is Supply, Installation, Testing, Commissioning and Maintenance of Broadcast equipment's and Media facilities in SRFTI as under:-

1. Well-equipped multi-cam studio, PCR, Server Room, Newsroom, Virtual Studio, Editing and allied facilities for SRFTI
2. Well-equipped Electronic News Gathering and Portable outdoor recording facilities for SRFTI

Since these equipment's are for an Educational & Research Institute, tenderers are requested to quote their best possible prices with special discount for Educational Institute. Training is also to be imparted to the technical Staff at SRFTI for operation of the equipment's.

1.3 PROCEDURE TERMS AND CONDITIONS

1.3.1   The proposal is to be submitted in **two-bid basis** with **separate Technical and Financial bid** under separated sealed covers.

1.3.2   Bid Responses must be addressed to and submitted at the following address:

> **The Chairman & Managing Director**
> **Broadcast Engineering Consultants India Ltd,**
> **C-56-A/17, Sec-62, Noida-201 301**
> **Tel: 120 417 7850 Fax: +95120-4332979**

The envelope should be superscripted at the top

Proposal for **"SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF TV STUDIO SETUP AT   SATYAJIT RAY FILM & TELEVISION STUDIO (SRFTI), KOLKATA** with due dates"

1.3.3 The Bids, both technical and the financial, should reach the office of BECIL, on the above address, not later than 1200 hours on 06.11.2017. Bids received beyond the specified date will be rejected. It is the responsibility of the Bidder to confirm that the bids have been received on time & to the proper place within the specified dates. Facsimile and electronic replies are not acceptable.

1.3.4 All bids are to remain valid for **six months** from the date of opening of financial bid.

1.3.5 BECIL reserves the right to solicit additional information from Bidders to evaluate which bid best meets the needs of the Project. Additional information may include, but is not limited to, past performance records, lists of available items of work will be done simultaneously with the project, on-site visit and evaluations by BECIL personnel, or any other pertinent information. It will be vendor's responsibility to check for updated information on BECIL's web site **www.becil.com.**

1.3.6 Additional questions should be submitted in writing to the RFP Coordinator addressed to

Mr. Sitaram, Senior Consultant **Broadcast Engineering Consultants India Ltd,** **C-56-A/17, Sec-62, Noida-201 301** **Mobile No. 9866466624** **Landline No: 0120 417 7850** **E-Mail**: **ynr.services@gmail.com**	**Mr. Ankit Vyas, Project Engineer** **Broadcast Engineering Consultants India Ltd,** **C-56-A/17, Sec-62, Noida-201 301** **Mobile No. 9450001416** **Landline No: 0120 417 7850** **E-Mail**: **ankitvyas@becil.com**

1.3.7 BECIL will make its decision based on the ability of the Bidder(s) to meet our specific needs, technical expertise of the Bidder(s), delivery capabilities, customer references, past satisfactory performance experience, system completeness is must besides cost.

1.3.8 BECIL reserves the right to waive off any deviations; accept the whole, or part thereof or reject any or all bids; and to select the Bidder(s) which, in the sole opinion of the Project in charge, best meets the project's interest. BECIL also reserves the right to negotiate with potential Bidders so that its best interests to fulfil the need of project are served.

1.3.9 BECIL reserves the right to reject any and all proposals, to negotiate all terms of any agreement resulting from this request for proposal, and to request additional information from vendors.

1.3.10 All information contained in this RFP, or provided in subsequent discussions or disclosures, is proprietary and confidential. No information may be shared with any other organization, including potential sub-contractors, without prior written consent of the RFP Coordinator.

1.3.11 Any Company is not allowed to participate in the RFP who has direct or indirect relationship with the employee of BECIL/SRFTI/consultant/architect in any form, during designing or planning or execution of project.

1.3.12 In case work order has been awarded to any company/Firm and later it is found by BECIL, that agency has furnished wrong information/declaration or not disclosed any material information to BECIL while submitting Bid. BECIL reserve right to cancel the work order awarded to Company/Firm. Further BECIL reserve right to forfeit EMD ant Bank guarantee of the agency. The work will be done on the cost & risk of the agency.

1.3.13 In case there is any material change in the financial status of Bidder/Business of Bidder, it should be disclosed while submitting Bid.

1.4 ELIGIBILITY CRITERIA

1.4.1 The bidder should have successfully executed works related to installation & commissioning of TV/Media facilities in last three years and should submit the documentary proof such as work order/completion certificate etc.

1.4.2 The bidder should be registered. A copy of registration should be submitted.

1.4.3 Letter of Authorization from OEM to quote in the tender. Original copy of Authorization letter should be submitted.

1.4.4 The bidder should submit the compliance statement duly signed by OEM/OEM Authorized representative.

1.4.5 A separate point by point compliance statement duly signed by bidder in respect to all points laid down in the specifications for all the equipment/item(s) must be submitted.

1.4.6 The bidder should have successfully carried out work at least one or similar project i.e. SITC of Broadcast equipment in last 3 financial year i.e. 2014-15, 2015-16 and 2016-17 **(Documentary proof such as copy of work order/completion certificate to be submitted)**

1.4.7 The bidder should have a Minimum Turnover of INR-2 crore and should have earned net profit in each of the last Three Financial Years i.e. In F.Y 2014-15, 2015-16 and 2016-17. Copy of Audited Financial Statement (Annual Account) should be submitted for the mentioned Three Years and the Bidder should be financially sound company.

1.4.8 The Bidder is required to submit the following documents:

    a) Company Registration under companies' act 1956.
    b) Copy of Pan No.
    c) Copy of GST Registration Certificate.
    d) Copy of EPF & ESI Registration Certificate

1.4.9 The Bidder should not have been barred or Black listed by any of the central govt. departments/organizations, central/state PSUs. An undertaking with self-declaration certificate on a non-judicial stamp paper of Rs 100/- certified by notary should be submitted along with the technical Bid.

1.4.10 Bidder should Submit Self-declaration Certificate for Total responsibility undertaking regarding project.

1.4.11 The Compliance statement including Bill of Material duly signed and stamped by OEM/Bidder on their letter head should be submitted by Bidder.

1.5 COMMERCIAL CONDITIONS

Terms & Conditions:

Each bidder is required to accept the following terms and conditions:-

1.5.1	**Earnest Money**	:	Each bidder is required to submit Earnest Money Deposit of Value **Rs. 10 lakhs.** EMD should be in the form of Demand draft or Bankers cheque from scheduled bank in favour of "Broadcast Engineering Consultant India Limited payable at New Delhi". Bid without EMD will not be accepted.
1.5.2	**Prices**	:	FOR Destination basis
1.5.3	**Payment Terms for INR**	:	70% after 10 days against delivery of material at site and acceptance by ultimate users. 20% after 15 days against installation and testing of material at site. 10% after testing and commissioning of equipment on the submission of 5% of the total price and quoted as Performance Bank Guarantee for a period of 12 months from the date of commissioning.
1.5.4	**Freight and Insurance**	:	The Freight and insurance for the consignment from place of origin to Project site (SRFTI, Kolkata) will borne by Supplier/S.I/OEM.
1.5.5	**Consignee**	:	The equipment should be consigned to C/o Project Manager (SRFTI/BECIL), designated at site.
1.5.6	**Delivery schedule and Commissioning**	:	Delivery 6 weeks from Date of Purchase order. Installation, testing and Commissioning has to be completed within 3 weeks of the delivery of the equipment subject to readiness of the site.
1.5.7	**Packing**	:	The equipment should be securely packed with proper insurance to withstand transit hazards during different modes of transportation.
1.5.8	**Guarantee/Warranty**	:	1. The equipment shall be under warranty for period of 12 months from the date of commissioning 2. The equipment shall also be under AMC for a period of 48 months from the date the above

				mentioned warranty ends. The AMC amount, year wise from second year to be quoted separately. The quoted amount should include all costs including transportation of equipment to and fro service center(s) / OEMs. Other terms, if any, of AMC should also be attached to the tender.
1.5.9	Authorization	:		Original copy of Authorization letter from OEM should be submitted.
1.5.10	Performance Bank Guarantee	:		The successful bidder shall have to furnish a Performance bank guarantee (PBG) within 2 weeks of release of PO in favour of Broadcast Engineering Consultants India Ltd, 14-B, Ring Road IP Estate, New Delhi – 110002 for an amount equal to 5% of order value and valid for the period of warranty (@ 1.5.8(1)).
1.5.11	Technical Manual	:		Two print copies of Technical Manual / Operation Manual / one CD version of the same has to be supplied with the equipment. One set of test certificate of each equipment has to be enclosed with shipment and one copy sent to BECIL. All software in original with perpetual license certificate has to be provided wherever possible.
1.5.12	Penalty Clause	:		In case of late delivery of equipment, the supplier shall be liable to pay penalty @ 0.5% of the order value per week of delay or a part thereof, up to a maximum amount of 5% of order value, after which the order is liable to be cancelled.
1.5.13	Invoicing and Tax	:		Invoicing will be done on M/s Broadcast Engineering Consultant India Limited (BECIL). 14-B Indraprastha estate, ring Road, New Delhi-

			110002, GST NO: 07AAACB2575L1ZK
1.5.14	**Compliance Statement**	**:**	A point by point full compliance statement in respect to all parameters related to the concerned equipment's/items from the respective principle manufacturers should be submitted in the prescribed format given below at Table 1.

Table 1
Compliance Statement Performa

Sr. No.	Sr. No. of Specification	Description of Specification	Page number of Specs in RFP	Compliance (Yes/No)	Deviation ,if any, to the specification	Optional Items ,if any, required for the completeness of system	Features in the offered product in addition to BECIL specs

1.6 VENDORS REQUIREMENT

Bidders are required to complete the vendor Information forms provided at Appendix C.

1.6.1 Warranty / Guarantee

Apart from the standard product guarantee / warrantee offered for individual pieces or sets of equipment (e.g. replacements for defective supplies, conformance to specifications provided in documentation etc.) vendors must provide details of the nature of guarantee for deliverables of the complete system that they are willing to commit. Guarantee with respect to the installation defects will also be applicable.

1.6.2 Additional information

Vendors should provide the following additional information.

1. A copy of the latest / last annual report of the company.
2. List with details (including name of client) of similar work executed in India and abroad, products / services used in chronological order.

1.7 PROPOSAL RESPONSE FORMAT

All the bidders are requested to use the same or similar format as given below while submitting the commercial bids. The proposal must be submitted strictly in the following fashion as in Table 2.

a) The proposal shall be submitted in the same envelope at the same time, in two distinct parts: a Technical Proposal and a commercial Proposal.

b) Proposals are to be prepared on standard 8-1/2" x 11" A4 size paper. Foldouts containing charts, spreadsheets, and oversize exhibits are permissible. The pages should be placed in a binder with tabs separating the sections of the proposal. Manuals and other reference documentation may be bound separately. All responses, as well as any reference materials presented must be written in English.

c) Proposals must respond to the RFP requirements by restating the number and text of the requirement in sequence and writing the response immediately after the requirement statement.

d) Figures and tables must be numbered and referenced in the text by that number. They should be placed as close to possible to the referencing text. Pages must be numbered consecutively within each section of the proposal showing proposal section and page number.

e) Proposals shall be based only on the items contained in this RFP and its standard required accessories. The RFP includes official response to pre-proposal conference questions, addenda, and any other material published by the BECIL pursuant the RFP. The bidder is to disregard any previous draft materials and any oral representations it may have received. All responses to the requirements in Sections (list appropriate section) of this RFP must clearly state whether the proposal will satisfy the referenced requirements, and the manner in which the requirement will be satisfied.

f) A point by point compliance statement duly signed by bidder in respect to all points laid down in the specifications for all the equipment/item(s) must be submitted.

TABLE-2

Sl. No	Description	Qty.	Make	Model	Unit Price	Total Price
Grand Total						

1.8   METHOD OF EVALUATION AND AWARD

1.8.1   **Evaluation Criterion**   :   The proposals will be evaluated for meeting technical requirements and system completeness based on which commercial analysis will be carried out. Final selection of the proposal / equipment will be based on the merits of the techno-commercial proposal submitted and will be decided by the evaluation committee. Factors which will be considered as a part of evaluation amongst others will include the following.

1.8.2   **Product Quality**   :   Only reputed industry tested equipment and solutions with reliability will be accepted, non-

standard make/model of equipment will disqualify the proposal technically.

1.8.3	**Compatibility**	:	System is envisaged to be compatible with the other quoted equipment.
1.8.4	**Up-gradation/ Modular design**	:	System/equipment be future looking and open to Technology up-gradations besides capable of add on facility and features in phased manner.
1.8.5	**Assurance of supply**	:	Vendor's technical capability, Organizational stability, reliability of equipment and ability to meet timelines.
1.8.6	**Quality**	:	Equipment stability, guaranteed uptime parameters, life of equipment.
1.8.7	**Service**	:	After sales service, availability of spare parts/technical support, warrantee offered.
1.8.8	**Cost**	:	Cost of the system as proposed and the apparent future financial implications, AMC and Total cost of Ownership.
1.8.9	**Integration Experience**	:	Expertise and experience of the bidder in system / sub system of Integration of similar nature.
1.8.10	**Delivery Schedule**	:	Delivery time line will be critical parameter for evaluation and final decision.
1.8.11	**Regulatory**	:	Should meet the Regulatory compliance, Safety requirements; Environmental objectives.

SECTION II
TECHNICAL SYSTEM REQUIREMENT

2.1   Generic Conditions

This RFP is for a system that will meet the following basic requirements: -

- A reliable system providing a high level of up time.
- Efficient and Economical System; Upgradeable & Scalable in nature.
- Use of industry standard hardware and interfaces.
- Local (at least at Kolkata) post-sales support services are required.
- Interoperate with other equipment and technology in future.
- All the glues/peripheral equipment should be included in the proposal.
- Equipment and models should have support of OEM for a period of at least 7 years from the date of supply (not nearing obsoleteness).
- All software applications should be of latest version at the time of PO and upgrades to be provided without any financial implication during the period of warranty.

2.2   Technical Conditions

- Proposed Bill of Material of the system configuration is listed in the appendix 'A' and single line diagram (SLD) is shown in appendix 'D'.
- Proposal should be for a complete system / sub system. Incomplete systems will not be considered.
- Proposal should not offer alternatives for any item, unless specified in the RFP.
- A copy of certificate from OEM authorizing the bidder to quote the product ensuing installation / configuration and after sales support is an essential requirement. The bid submitted without the certificate is liable to be rejected.

- Appendix B contains the technical specification of all the major/ important equipment and systems.
- Each equipment must be accompanied with operational and technical manual.
- The electrical load of each equipment is to be specified.
- Evaluation will be done for each equipment and final configuration of the BOM to be determined subsequently.

BILL OF MATERIAL & TECHNICAL SPECIFICATIONS

<u>APPENDIX – 'A</u>

Sr.no	Item	Units	Qty	Suggested Make	Suggested Models
1	**Studio Cameras (ENG Type)**				
1.01	3 x 1/3" or 3 x 1/2" MOS sensor HD ENG Camera	No	5	Panasonic / Sony / other	AJ-PX270 / PMW320 or equivalent
1.02	Remote Control Unit with 25 mt cable	No	5	Panasonic / Sony / other	HRP-200G / RM-B170 or equivalent
1.03	Charger cum AC Adopter	No	5	Panasonic / Sony / other	
1.04	Tripod for Camera 8Kg Capacity	No	3	Libec / Shotoku / Cartoni / other	LX-7 or equivalent
1.05	Tripod for Camera 16Kg Capacity (for Teleprompter Camera)	No	2	Libec / Shotoku / Cartoni / other	LX-10 studio or equivalent
1.06	Remote zoom/ focus (for studio)	No	5	Libec / other	ZFC-5HD or equivalent
1.07	Dolly for Tripod	No	5	Libec / Shotoku / Cartoni / other	DL-2RB or equivalent
1.08	25 Mtr Video Cable with Connectors (HD SDI Out, Ref In, Prompter)	No	15	Canare / Belden	
1.09	Power cable 25 Mtrs with connectors	No	5	Polycab / Finolex	
1.10	25 Mtr Intercom Cable (5 core) with connectors (suitable for the Intercom provided in the PCR)	No	5		
1.11	Suitable wall boxes for the above	No	2		
1.12	32" LCD Floor Monitor with stand	No	1	Samsung / LG /Sony	LED TV with HDMI input
2	**Production Switcher 1ME with 16 input**				
2.01	1ME Switcher Frame with minimum 16 inputs and 10 outputs	No	1	Ross Video / For-A / GVG or other	Carbonite-1 or equivalent

2.02	1 ME Control Panel with at least 16 direct access input buttons	No	1		
2.03	Redundant PSU for Frame	No	1		
2.04	Redundant PSU for Panel	No	1		
3	**Teleprompter with the following**	No	1	Comcon or other	Samvad Prime or equivalent
3.01	15" on camera high brightness LCD monitor kit (mounting bracket, hood etc.,); Monitor to take PAL input	No	2		
3.02	Prompter Software with Bengali, Hindi and English fonts. Should handle Hindi and Bengali trijunction letters	No	1		
3.03	NRCS Integration	No	1		
3.04	Serial Hand Control	No	2		
3.05	PC of appropriate configuration for the above; including VGA Mon, KB and Mouse; VGA to PAL converter to be part of the offer	No	1		
4	**Portable Memory card HD Recorder / Player**				
4.01	Memory card Recorder Player with two slots of memory card; with HD-SDI I/O, Analog Audio I/O and Genlock	No	1	Panasonic / Sony / other	AJ-PD50 / PMW-RX50 or equivalent
4.02	Memory Card 32GB	No	4	Panasonic / Sony / other	Compatible with the Recorder/player
5	**Trackless virtual studio HW & SW**				
5.01	Trackless Virtual Studio with 2 HD-SDI inputs	No	1	Monarch or other	Virticast 3DE 2200 Touch System ; or equivalent
5.02	HW: Rack Unit with HD-SDI I/O card	No	1		
5.03	Training at site for operations and creation of Virtual sets (about 1 week).	No	1		
6	**CG**				
6.01	Character Generator ; SW	No	1	Magic soft / other	CG

6.02	HW Min Configuration : Workstation with 6GB RAM, Graphic card with 4GB DDR and Deck link HD dual I/O Card	No	1	HP	Z420 or equivalent
6.03	Deck link HD dual I/O Card	No	1	Black magic	Deck link Dual Pro HD
7	**Monitoring**				
7.01	50" LCD Monitor	No	4	Samsung	
7.02	22" LCD Monitors	No	2	Samsung	
7.03	Cost-effective WFM / Vector scope		1	Blackmagic-smartscope	
7.04	HD-SDI to HDMI Conv	No	6	Black magic/AJA/data video	Mini Converter
8	**Audio Equipment**				
8.01	Analog Audio Console 24 channel	No	1	Sound craft / Yamaha	GB2-24 or equivalent
8.02	Telephone Hybrid	No	1	Telos / JK Audio	HX-2 / Inkeeper-2
8.03	RF Lapel Mic for Studio	No	3	Sennheiser / other	EW-100-G3 or equivalent
8.04	Corded Lapel Mic	No	3	Sennheiser / other	MKE2PC or equivalent
8.05	Handheld Mic	No	2	Sennheiser / other	MD-46 or equivalent
8.06	Active Speakers- Near Field Active Monitors 80/100W (single)	No	3	KRK / Genlec / other	Rokit-8 or equivalent
8.07	Head phone	No	3	Sennheiser / other	HD180 or equivalent
8.08	Intercom - 8 port with 8 headsets	No	1	Data video	ITC100
9	**Glue**				
9.01	Frame, 2RU, no back, all blanks with fan	No	1	Imagine / Ross / GVG / other	FR6822+QXFE or equivalent
9.02	Redundant PSU	No	1	Imagine / Ross / GVG / other	6822+AC or equivalent
9.03	HD/SD-SDI Multiplexer and Frame Synchronizer with AES/EBU and Analog Audio Inputs	No	1	Imagine / Ross / GVG / other	HMX6803+AI+T or equivalent
9.04	HD/SD-SDI De-Multiplexer and Frame Synchronizer with AES/EBU and Analog Audio Inputs	No	2	Imagine / Ross / GVG / other	HDX6803+AO+T or equivalent

9.05	Dual Channel HD/SD-SDI Distribution Amplifier	No	6	Imagine / Ross / GVG / other	DA-DHR6804+D or equivalent
9.06	Analog Video Distribution Amplifier with Rollcall Control	No	2	Imagine / Ross / GVG / other	VDA6800+D or equivalent
9.07	Single/Dual Channel Analog Audio Distribution Amplifier	No	2	Imagine / Ross / GVG / other	ARG6800+D or equivalent
9.08	Analog Audio to HD-SDI Mux	No	2	Black magic / AJA	Mini Converter
9.09	HD-SDI to Analog Audio Demux	No	2	Black magic / AJA	Mini Converter
9.10	PAL to HD-SDI	No	2	Black magic / AJA	Mini Converter
9.11	PAL DA	No	1	Black magic / AJA	Mini Converter
9.12	Cost effective Sync Generator	No	2	AJA / Black magic	GEN10 or equivalent
10	**SDI Router**				
10.01	HD SDI Router 16x16	No	1	Imagine / Ross / Black magic / other	PV-16X16-FR-1 or equivalent
10.02	XY Control Panel	No	2	Imagine / Ross / Black magic / other	Imagine: RCP-16PB or equivalent
11	**Video Servers, Automation, MAM and Archiving**				
11.01	2 HD Ingest System Mode - Scalable to 4HD from the same chassis - VTR Control - Should Support Edit while ingest(Growing file) and direct ingest to storage	No	2	Kartavya / other	Quickedge / Metus or equivalent
11.02	2 HD Playout Video Server & Software - 8 TB Raid Based storage - VTR Control - As run Log - Mirrored Playout capability	No	2	Kartavya / other	Quickedge or equivalent
11.03	Playout MOS Gateway		1	Kartavya / other	Quickedge or equivalent

11.04	Enterprise NAS with 40TB Usable storage after Raid 6 Dual Xeon 6 Core Processors 32 GB Ram 2 X 10G Ports 2 x 1G Ports 1Gb Battery backed Cache Windows Server 2016 OS/Linux Dual Power Supply Support for CIFS, NFS, FTP, SMB3.0, SMB Direct (RDMA) Support editing on storage for 5 Adobe Premiere Pro machines	No	1	DELL / other	
11.05	Enterprise class MAM and HSM Software - Unlimited user license - Unlimited data Management License - Cross Platform client and web access - Adobe Premiere Pro Plugin	No	1	Kartavya / other	Quickedge or equivalent
11.06	MAM & HSM Application Server Intel Xeon Processor 2 X 120GB SSD for OS 16GB Ram 2 X 1G Ports Dual hot plug power supply Linux/ Windows Server 2016	No	1	DELL / other	
11.07	HSM Gateway Server Intel Xeon Processor 16GB Ram 2 X 120GB SSD for OS 2 X 1G Ports Dual hot plug power supply Linux/ Windows Server 2016	No	1	DELL / other	
11.08	LTO7 Tape Drive with 5 X LTO7 Media Sas Cable Cleaning Cartridge	No	1	HP / DELL / other	
11.09	12 Port 10G Managed Switch	No	1	Cisco / HP / other	
11.10	24 Port 1G Layer 2 Switch	No	1	Cisco / HP / other	
11.11	Client W/S (HW) of suitable config for Ingest / Playout /	No	As req	HP / DELL	

	Archiving / MAM				
12	**News Room Computer System (NRCS)**				
12.01	Enterprise web Based NRCS Cross Platform access Perpetual license	No	1	Kartavya or similar	Blaze or equivalent
12.02	NRCS Application ServerIntel Xeon Processor16GB Ram2 X 120GB SSD for OS2 X 1G PortsDual hot plug power supplyLinux/ Windows Server 2016	No	1	DELL / other	
12.03	Client W/S (HW) of suitable config for NRCS clients	No	12	HP / DELL	
12.04	Enterprise grade Firewall	No	1		
13	**Edits and graphics (First Floor)**				
13.01	Adobe Premier suite CC 2017 (latest edition)	No	5	Adobe	CC 2017 (Edu)
13.02	MacPro of suitable Configuration for above including monitor, KB, Mouse etc.	No	5	Apple	MacPro
	Option (Also to be quoted)				
13.02	Windows W/S of suitable configuration for above including monitor, KB, Mouse etc.	No	5	HP / DELL	Z420 or similar
13.03	3D Max GFX	No	1	Autodesk	3D Max
13.04	HW for above	No	1	HP / DELL	
13.05	Active speakers (single)	No	11	KRK / Genlec / other	Rokit-5 or equivalent
14	**Field Equipment**				
14.01	3 x 1/3" MOS sensor HD ENG Camera	No	3	Panasonic / Sony	AJ-PX270 / PXW180 or equivalent
14.02	Lithium Battery	No	6	Panasonic / Sony / other	Compatible with the Camera
14.03	Charger cum AC Adopter	No	3	Panasonic / Sony / other	Compatible with the Camera
14.04	Memory Card 32GB	No	6	Panasonic / Sony / other	Compatible with the Recorder/player

14.05	Memory Card Reader	No	2	Panasonic / Sony / other	Compatible with the Memory card
14.06	Tripod for Camera 8Kg Capacity	No	3	Libec / Shotoku / Cartoni / other	LX-7 or equivalent
14.07	Remote zoom/ focus (for studio)	No	3	Libec / other	ZFC-5HD or equivalent
14.08	Dolly for Tripod	No	3	Libec / Shotoku / Cartoni / other	DL-2RB or equivalent
14.09	Cordless lapel	No	3	Sennheiser / other	EW-112-G3 or equivalent
14.10	Shotgun mic with windshield and grip	No	3	Sennheiser / other	K6/ME64 or equivalent
14.11	On Camera LED lights	No	3	Panasonic / Sony / other	
14.12	Headphones	No	3	Sennheiser / other	HD180 or equivalent
14.13	Handheld audio recorders	No	2	Tascam / other	DR-100 or equivalent
15	**Portable Production**				
15.01	HD/SD Portable Production system - 8 inputs - with built in Monitoring, Intercom etc.,	No	1	Data Video	HS-2800-8
15.02	Battery Operated Portable Audio Mixer - 10 inputs	No	2	Behringer / other	1002B or equivalent
15.03	Memory Card Portable Video Recorder	No	1	Panasonic / Sony / other	AJ-PD500 / PMW-RX50 or equivalent
16	**Installation Material**	Lot	1	Canare / Belden / Nuetrik	
16.01	19" Aluminum profile Equipment racks 42U, 1000mm depth with following Accessories	No	3	Valack / other	
16.02	Top lid with four ventilation fans fitted	No	3		
16.03	Back door	No	3		
16.04	Side covers	No	2		
16.05	42U 100mm vertical cable trays	No	8		
16.06	Heavy-duty L-angle equipt supports (pair)	No	As req		
16.07	Heavy-duty fixed trays	No	As req		

16.08	Blank Panels 4U	No	As req		
16.09	Blank Panels 2U	No	As req		
16.10	Blank Panels 1U	No	As req		
16.11	Hardware (equipt nits and bolts)	No	As req		
16.12	MDUs with 10 numbers of 6 Amp IEC sockets with individual fuse and indicators per socket (no main switch) (Quantity Includes requirement for Control desks / Tables)	No	14		
16.13	Video Cables Mini RG59U (Rack wiring) - 1855A or equivalent - Red or green	No	As req	Canara / Belden	
16.14	Video Connectors-BNC Crimp type with cable boot (red / green) suitable for 1855A	No	As req	Canara / Belden	
16.15	BNC Crimping Tool with die set	No	1	Canara / Belden	
16.16	Coaxial Cable Stripping Tool	No	1	Canara / Belden	
16.17	BNC Extracting Tool	No	1	Canara / Belden	
16.18	Microphone Cable two core shielded- 200 Mtr bundles Belden 1813A or similar	No	As req	Canara / Belden	
16.19	Audio Rack Wire (Line Cable) - Grey - 200 Mtr Bundles Belden 8451 or similar	No	As req	Canara / Belden	
16.20	Video Patch Panels 2x24	No	2	Canara / ADC	
16.21	Video Patch Cords 30"	No	8	Canara / ADC	
16.22	Audio Bantom Patch Panels 2x48	No	2	Canara / ADC	
16.23	Audio Patch Cords 30"	No	12	Canara / ADC	
16.24	Audio Stereo Plugs	No	As req	Canon / Neutrik	
16.25	Audio Connectors XLR Female Cable Type	No	As req	Canon / Neutrik	
16.26	Audio Connectors XLR Male Cable Type	No	As req	Canon / Neutrik	
16.27	Audio Connectors XLR Female Panel Type	No	As req	Canon / Neutrik	
16.28	Audio Connectors XLR Male Panel Type	No	As req	Canon / Neutrik	

16.29	Other misc. connectors and material (cable ties, cable markers etc.,) as required	No	As req		
16.30	Power cables-3 core 6A PVC Orange for Equipment power cords- 100Mtr Rolls	No	As req	Polycab / Finolex	
16.31	Power cables-3 core 20A PVC Orange for Equipment Racks- 100Mtr Rolls	No	As req	Polycab / Finolex	
16.32	Power connectors Female IEC type for Equipment	No	As req	Elcom or equivalent	
16.33	Power connectors- male IEC type for Equipment	No	As req	Elcom or equivalent	
16.34	Customized modular Prod Control Desk with metal frame, 25mm moulded MDF top with pre-cut slots for mounting control panels etc., accessories like Desktop mounting for equipment, cable managers,: Approx. Size 16x3.5 Ft	No	1		
17	**Installation Services**	No	1		

SPECIFICATIONS

	Specifications of SRFTI Equipment	
1	**General Specifications for all Equipment:**	
1.1	**Signal formats:**	
	1.1.1	HDTV 1920x1080i confirming to SMPTE 292M and ITU-R BT 709 (HD-SDI @ 1.484Gbps)
	1.1.2	SDTV 625/50i confirming to SMPTE 259M and ITU-R BT 601 (SD-SDI @ 270Mbps), SECAM-C
	1.1.3	Embedded Audio in both HD and SD SDI.
	1.1.4	Digital Video: 0.8V-pp nominal (across 75 Ohms)
	1.1.5	Reference: 1080i/50 Hz, HDTV Tri-level sync, SECAM Black Burst
	1.1.6	Audio: AES/EBU, Embedded
	1.1.7	Time code: VITC in BB, LTC
1.2	**Digital Processing:**	
	1.2.1	HDTV: Sampling 4:2:2; 10-bit quantization
	1.2.2	SDTV: Sampling 4:2:2; 10-bit quantization

	1.2.3	Power Supply: 230V 50Hz
	1.2.4	Operating Temp: 5 to 40 Deg. C
	1.2.5	Mounting standard: 19" rack mount where ever applicable
1.3	**Interface (connectors)**	
	1.3.1	Video: BNC / HD-BNC / DIN 1.0
	1.3.2	Audio: 3 Pin XLR / Stereo Phono
	Specifications of Major Equipment:	
2	**Studio Camera (ENG Type)**	
2.1	**Portable ENG Camera**	
	2.1.1	Imaging Device : 3-chip 1/3" or 3-chip 1/2"-type MOS 2.2 mega pixels
	2.1.2	Resolution : 1920 x 1080
	2.1.3	Horizontal Resolution : 1,000 TV lines or more (1920 x 1080i mode)
	2.1.4	Minimum Illumination : 0.12 Lux (F1.6, Gain 18dB) or better
	2.1.5	S/N Ratio : 60 dB (Y) (typical)
	2.1.6	Optical System : prism system
	2.1.7	Zoom System : 14x or better motorized Optical Zoom Lens
	2.1.8	Focus: AF / MF selectable.
	2.1.9	Iris : Auto/manual switchable
	2.1.10	Optical Filters : Clear; 1/4 ND, 1/16 ND; 1/64 ND
	2.1.11	Shutter speed ; 1/32 to 1/2000 sec
	2.1.12	Gain settings -3 dB to 16 dB
	2.1.13	White balance ; AWB, MemA, MemB, Preset (3200 deg K)
	2.1.14	Built-in LCD Monitor : 3.5"-type color LCD; 16:9
	2.1.15	Audio Input : Mic / Line selectable - XLR
	2.1.16	Video Output : HD-SDI: 1 x BNC
	2.1.17	Genlock : 1 x BNC
	2.1.18	Memory Card Slots : 2
	2.1.19	Recording Format: MPEG4 (AVC Intra or XAVC)
	2.1.20	RCP interface connector
	2.1.21	Built in microphone
	2.1.22	Standard Accessories; Lens, Lens hood with cap, 3.5" LCD Monitor, Battery pack, Charger, AC Adopter.
2.2	**Remote Control Panel**	
	2.2.1	Should be compatible with the Camcorder supplied
	2.2.2	Control Cable Length - 25m
		Standard Functions / Controls
	2.2.3	MasterBalck control
	2.2.4	Iris Control Joystick / Knob
	2.2.5	Iris / pedestal Lock button
	2.2.6	Auto, Mem-A, Mem-B and Pre-set buttons / control for White Balance
	2.2.7	Auto Black Bal button

	2.2.8	Auto Knee button
	2.2.9	Auto iris button
	2.2.10	Manual White and Black balance controls
	2.2.11	Tally Indicator
	2.2.12	Menu button & selector
	2.2.13	Display (of settings / menu)
2.3	**Tripod with dolly (for Camera without Teleprompter)**	
	2.3.1	Two stage tripod
	2.3.2	75 mm or 100 mm ball base
	2.3.3	Fluid Drag; Continuous
	2.3.4	Counter balance; Continuous
	2.3.5	Pan Range; 0 to 360 Deg
	2.3.6	Tilt range: + or - 90 deg.
	2.3.7	Pay load ; 8Kg or better
	2.3.8	Dolly Load Capacity >=25 Kg
2.4	**Tripod with dolly (for Camera with Teleprompter)**	
	2.4.1	Two stage tripod
	2.4.2	100 mm ball base
	2.4.3	Fluid Drag; Continuous
	2.4.4	Counter balance; Continuous
	2.4.5	Pan Range; 0 to 360 Deg
	2.4.6	Tilt range: + or - 90 deg.
	2.4.7	Pay load ; 16 Kg or better
	2.4.8	Dolly Load Capacity >=25 Kg
2.5	**Trackless Virtual Studio**	
		Essential Features
	2.5.1	Seamlessly integrate live talents with 3D virtual set in real-time
	2.5.2	Multiple virtual camera display & switching
	2.5.3	Variable motion speed of virtual cameras
	2.5.4	No pre-rendering of 3D virtual sets
	2.5.5	Render complex 3D scenes in real-time
	2.5.6	Live camera inputs in HD format
	2.5.7	Pre-recorded media source input
	2.5.8	Dynamically update input source
	2.5.9	On-screen media gallery for organizing graphic and movie clips
	2.5.10	Real-time shader application to 3D objects
	2.5.11	Shadows on the background to be removed very efficiently
	2.5.12	No colour spills or spatial effect
	2.5.13	Pre and post Chroma key colour correction
	2.5.14	Overlay images, AVI & text instantly
	2.5.15	Create and display text crawls in multilingual fonts
	2.5.16	Update graphics on-line through the client-server solution
	2.5.17	Mouse-over preview of virtual camera positions and movements

	2.5.18	Preview of live & pre-recorded input sources
	2.5.19	Simple drag and drop operation
	2.5.20	Library of ready-to-use sets
		Hardware
	2.5.21	Video Inputs :2 X HD-SDI - SMPTE 292M – (BNC) or 2 X SD-SDI - SMPTE 259M – (BNC)
	2.5.22	Video Outputs :2 X HD-SDI - SMPTE 292M – (BNC) or 2 X SD-SDI - SMPTE 259M – (BNC) 1 X CVBS (SD output resolution only)
	2.5.23	Audio Inputs :2 X Balanced XLR Stereo inputs (Per input channel)
	2.5.24	Genlock : PAL Reference In and Loop out
	2.5.25	Audio Outputs :1 X Balanced XLR Stereo output
	2.5.26	Video Bypass :SDI Input-1 will be routed to SDI output 1 in case of power failure
	2.5.27	Deck controls :9 Pin RS 422 Device Control
	2.5.28	Tally Controls :15 Pin Tally out for live video inputs
	2.5.29	GPI/O :25 Pin D-Sub connector for GPI inputs
2.6	**Production Switcher**	
	2.6.1	Number of MEs : 1
	2.6.2	16 SDI Multi-def Video Inputs
	2.6.3	1PGM
	2.6.4	9 Assignable Outputs
	2.6.5	4 Keyers Per MLE
	2.6.6	4 Channels Media-Store
	2.6.7	4 Channels 2D DVE
	2.6.8	1 Reference input : Black or tri-level
	2.6.9	Input Frame synchronizers: 6
	2.6.10	Internal reference generator
	2.6.11	GPI I/O : Min 30
	2.6.12	Tally out
	2.6.13	TC input
	2.6.14	RS422 port (Editor)
	2.6.15	Control Panel with 16 direct access Input buttons
	2.6.16	Redundant PSU for frame and Panel
2.7	**Portable Video Recorder / Player**	
	2.7.1	Recording Media: Express Card or P2 / Micro P2 card
	2.7.2	Recording Format: AVC Formats : XAVC or AVC Intra & MPEG2 HD422/HD420 or DVC Pro HD
	2.7.3	Memory card slot : 2
	2.7.4	SDI Input; SMPTE 292M/259M standards : 1 x HD/SD-SDI, BNC
	2.7.5	SDI Output; SMPTE 292M/259M standards: 1 x HD/SD-SDI, BNC
	2.7.6	HDMI Output; 1xHDMI

	2.7.7	Analog Audio Output; XLR / Stereo jack
	2.7.8	Headphone Output; 1 x stereo mini jack
	2.7.9	USB; 1 x USB, type A (for external hard drive)
	2.7.10	Power Requirements: 12 V DC (power Adopter to be supplied)
	2.7.11	Operating Temperature; 0 to 40 Deg C
2.8	**Teleprompter**	
		Software features
	2.8.1	Should be Unicode compliant to support any language that Windows works with
	2.8.2	Should handle Hindi and Bengali trijunction fonts
	2.8.3	Should be compliant with popular NRCS systems
	2.8.4	Remote support for assistance
	2.8.5	Features to support efficient News production
	2.8.6	Reader Management
	2.8.7	Anchor Messages
	2.8.8	Date Time Show
	2.8.9	Import word text files
	2.8.10	In-built text editor
	2.8.11	Story preview
	2.8.12	Font size selection
	2.8.13	Adjustable scrolling speed
	2.8.14	Font colour selection & Background colour selection
		Prompter Monitor
	2.8.15	60/40 teleprompting Glass
	2.8.16	Compatible with all professional Tripods
	2.8.17	Compatible with all professional Cameras and ENG combined
	2.8.18	Weights less than 8.5 Kg
	2.8.19	Screen size 15"
	2.8.20	Slide weight balancing mechanism
3	**Servers and Automation**	
3.1	**General features of Playout and Ingest**	
	3.1.1	Scalable Playout Server System with 2 HD Playout ports and at least 8TB Internal raid Based Storage.
	3.1.2	Scalable Ingest System with 2 HD Encoders
	3.1.3	Provision to add more Ingest/Playout ports in future if needed
	3.1.4	Required client stations for ingest and play back.
	3.1.5	The playout & Ingest system should be based on a standard operating system like Window or Linux
	3.1.6	The Video Server should support standard protocols like FTP for file transfer
	3.1.7	The system should be capable of working both in HDTV and SDTV standards. The SDTV standard is 625 line (4:3 aspect ratio) conforming to SMPTE 259M and ITU-R BT 601 (amended up-to date) (SD-SDI 270Mbps). While the HDTV standard is

		1920x1080/50i conforming to SMPTE 292M and ITU-R BT. 709 (CIF) (amended up-to date) (HD-SDI: 1.485 GB/s).
	3.1.8	The envisaged system should support HD Video @ 50 mbps for HD 4:2:2 formats.
	3.1.9	The offered Automation software should support Switcher/router control and the necessary hardware/software for the same should be part of the quote
	3.1.10	The offered system should be modular and expandable for future requirement.
	3.1.11	The offered server should be having Dual Power Supplies
3.2	**Ingest**	
	3.2.1	Base band signal HD/SD SDI with embedded audio from Studio, VTRs (with VTR transportation control), will be ingested to the system.
	3.2.2	Two simultaneous ingests for baseband signal and Four file ingests are required at this stage, There should be provision of add on additional ingest ports in case required in future.
	3.2.3	System should have intuitive user interface for easy ingest operation with easy controls available in the hand of operators for resolving any eventuality.
	3.2.4	System should have preview of the content being ingested
	3.2.5	The ingest system should support VTR control for batch capture, the ingest system should also support Scheduled Ingest
	3.2.6	System should provide current status of ingestion process to operator with an option to abort any time.
	3.2.7	It should be possible for operator to define source and destination for ingest. Edit while ingest should be possible.
	3.2.8	It should also provide high bandwidth networking capabilities so that video/audio sources can be directly recorded on External storage.
	3.2.9	Operator may also preview & browse the content without disrupting the recording process. It should have comprehensive graphical over view/GUI with video overlays.
	3.2.10	Built in provision for simultaneous PVW of Video along with Audio/Audio bars should be present
	3.2.11	Provision for file based ingest is also required, it should be possible to ingest full resolution AFP/FTP directly to the server without any additional gateway.
	3.2.12	The proposed system should support Edit while ingest with Adobe Premiere Pro
3.3	**Playout:**	

	3.3.1	Automated Play-out system with manual rider is required to meet the requirements for Studio production.
	3.3.2	The system should support scaling for up to 6 HD ports in future.
	3.3.3	System ports should be easy to configure and with good manageability.
	3.3.4	The playback of scheduled clips from the play list should be instantaneous without any delay.
	3.3.5	It should resume the playout from the last known position in case of interruption and it should also allow the user to jump from one line in a playlist to another during production, regardless of whether or not the current event has finished. In that case remaining playlist should be automatically modified accordingly. The system should also have facility to pause and play the playlist manually
	3.3.6	System should provide current status of play-back process to operator with an option to abort any time.
	3.3.7	Client Server architecture with a cross platform client is preferred for Playout system
	3.3.8	System should support classification of clips based on file names and other criteria's for easier search
	3.3.9	GUI / window should show the play out progress with time code /visual bar etc.
	3.3.10	The automation system should be capable of moving old clips automatically to the shared storage after a preset duration for archival
	3.3.11	Offered playout system should support third party integration by using interfaces such MOS
	3.3.12	Offered playout system should generate detailed as run log and the log should be exportable to standard data exchange formats such as XML and CSV
	3.3.13	Offered playout system should support frame accurate mirrored Playout capability
3.4	**Baseband signals**	
	3.4.1	The video is in HDTV 1920x1080/50i (16:9 aspect ratio) conforming to SMPTE 292M and ITU 709 (CIF) HD-SDI: 1.485 Gb/s and SDTV 625/50i (4:3 aspect ratio) conforming to SMPTE 259M and ITU 601 SDI: 270 Mb/s. Both the signals have 4:2:2 sampling and 10 bit quantization and minimum 4 discreet embedded audio channels.
		Reference:
	3.4.2	Tri-level sync/ PAL Black burst.
		Time code:
	3.4.3	LTC,VITC
		Video Compression:

	3.4.4	SD: DVC PR050 & 25 , DV MPEG-2 @ML4:2:2, I-Frame 30/40/50 HD: XDCAM HD 4:2:2 (50 Mb/s), XAVC (50/100), AVC Intra 50/100, DVC Pro HD
		Input/Output:
	3.4.5	HD/SD with embedded audio minimum 4 discrete channels.
3.5	**Archiving**	
	3.5.1	The archival system should be an enterprise class system with HSM capabilities
	3.5.2	Media Management software should be accessible over Mac as well as on Windows operating system using desktop client
	3.5.3	Media Management software should directly manage the Tape Drive without any additional HSM software
	3.5.4	No data and user license restrictions should be imposed by the software and should offer an unlimited user/data software license.
	3.5.5	Media Management software should provide low res proxy file for all the archived media along with thumbnail and story board view
	3.5.6	All-important actions should be privilege based
	3.5.7	Audit trail should be included for all user actions
	3.5.8	Catalogue based tape classification should be possible
	3.5.9	Dual copy of a media should be possible across NAS and LTO
	3.5.10	Frame based meta data tagging
	3.5.11	Automated Water mark insertion should be possible
	3.5.12	Unlimited metadata fields should be possible
	3.5.13	The servers should be the MAM OEM recommended machines with Dual power supply and Raid based HDD
3.6	**LTO 7 Tape Drive**	
	3.6.1	The tape drive should be from a reputed manufacturer preferably from DELL/HP/IBM
	3.6.2	5 X LTO7 Tapes should be part of the proposal
	3.6.3	Necessary SAS/FC kit should be part of the proposal
3.7	**Storage**	
	3.7.1	An enterprise grade NAS STORAGE with 40TB usable Storage after Raid 6
	3.7.2	Storage should be equipped with Dual Xeon processors with minimum 32GB or RAM
	3.7.3	Storage should be SAS or NL-SAS Based and hot swappable
	3.7.4	Operating system should be on a separate raid 1 Array with high performance SAS 10K hard disks
	3.7.5	System should run on a very stable operating system like Linux or Windows Server 2012
	3.7.6	The NAS should be from a reputed make and preferably be

		from DELL/HP/IBM
	3.7.7	System should come with 4 X 1 G Ethernet ports and support port aggregation/Bonding
	3.7.8	The storage should be capable of scaling up-to to 100TB in near future.
	3.7.9	The storage should support active directory based authentication
	3.7.10	The storage should support the following file transfer protocols: CIFS, NFS, FTP, SMB3.0, SMB Direct (RDMA)
	3.7.11	Storage should come with Dual redundant hot plug power supplies
	3.7.12	Storage should be rack mountable
	3.7.13	Storage should support editing on storage for 4 Adobe Premiere Pro machines
	3.7.14	Storage should have 1GB battery backed cache for raid
3.8	**NRCS (News Room Computer System)**	
	3.8.1	An enterprise grade purely web based NRCS
	3.8.2	The server and client application should be have cross platform support and should run on windows Linux and Mac
	3.8.3	The system must support standard protocol with latest version for broadcast device integration such as Media Object Server (MOS) as well as other XML based protocols for nonstandard device integration.
	3.8.4	The system should be based on a graphical user interface (GUI) and it should be intuitively designed for modern day TV journalists.
	3.8.5	The offered system should be totally scalable in future to facilitate future expandability. The firm should clearly provide the complete details of the scalability, which are possible in the offered system.
	3.8.6	The system should provide an RSS, District feed and Wire parser engine without any restriction on the number of feeds
	3.8.7	The system should accessable on tablets and mobiles
	3.8.8	The NRCS should support Unicode character set
	3.8.9	The NRCS should support publishing to social media sites such as twitter and Facebook
	3.8.10	NRCS should have text editing tools of word counting time management features base on news anchors reading rate.
	3.8.11	NRCS should provide instant chat and messaging system
	3.8.12	The NRCS should be accessable on a standard web browser without any plugin/application installation
	3.8.13	The NRCS should support text search in all scripts
	3.8.14	The System should have a unlimited user perpetual license
	3.8.15	NRCS should provide mobile application for access through

		mobile phones
	3.8.16	The NRCS should be accessible on a standard web browser without any plugin/application installation
	3.8.17	The NRCS should support text search in archived clips
3.9	**Networking**	
	3.9.1	1 X 24 Port 1G layer 2 network switches should be part of the quote
	3.9.2	1 X 12 Port 10G SFP+ layer 2 network switches should be part of the quote
	3.9.3	The Switch should be from a reputed make and preferably be from HP/DELL
	3.9.4	Patch cables and all cabling work necessary for the items proposed in the proposal should be quoted
3.10	**Firewall**	
	3.10.1	3 x10/100/1000 Ethernet ports
	3.10.2	750 Mbps Firewall Throughput
	3.10.3	80 Mbps UTM Throughput
4	**SW & HW for Non-Linear Editing:**	
	4.1	Adobe CC 2017 SW (with 5 year bundled subscription for Educational institute)
	4.2	System for Edit suite with HD-SDI I/O card
	4.3	Mac Pro 6 Core Xeon E5 3.5GHz/8GB/Dual FirePro D500 3GB each, Keyboard, Mouse 27 or 34" thunderbolt Monitor, 2 Mtr Thunderbolt Cable, Additional 2TB thunderbolt storage, HD-SDI I/O
		Option (also to be quoted)
	4.4	Equivalent and CC 2017 Compatible Configuration for a Windows Work station (Z420)
5	**Cost effective SD/HD/AES sync generator**	
	5.1	HD Sync : Tri-Level : 2-3 outputs : BNC
	5.2	SD Sync : SD: colour black, 75% colour bars : 2-3 outputs : BNC
	5.3	Audio Ref Output: AES-11: 48 KHz, silent or 1 KHz tone : 1 out : BNC
	5.4	Formats to support
		525i, 625i
		720p23.98/24/25/29.97/30/50/59.94/60
		1080i50/59.94/60
		1080psF23.98/24/25/29.97/30
		1080p23.98/24/25/29.97/30
	5.6	Accuracy : 2-3 ppm
	5.7	Power : 7-17 V DC : Nominal 12 V DC (AC power adopter to be supplied)
6	**HD/SD/PAL/Audio Glue**	
6.1	**2U Frame with redundant PSU**	

	6.1.1	2RU frame houses up to 20 cards
	6.1.2	Supports any mix of analog, digital, video and audio modules in the same frame
	6.1.3	Modular I/O panels for connector flexibility
	6.1.4	Removable front door for easy fan servicing
	6.1.5	Frames come standard with cooling
	6.1.6	Front LCD display for name, IP and fault identification
	6.1.7	2 independent looping references with connection to each card slot
	6.1.8	Redundant power supply, hot-swappable for 24/7 operation
6.2	**Analog Audio Embedder**	
	6.2.1	4 ch Analog audio embedding for all popular HD / SD SDI formats
	6.2.2	Analog gain processed entirely in the analog domain
	6.2.3	Audio proc amp controls; gain, invert, delay and sum
	6.2.4	Full control over channel assignments, primary and backup sources
	6.2.5	Programmable silence detection and timeout thresholds
	6.2.6	Hot-swappable
6.3	**Analog Audio De-Embedder**	
	6.3.1	4 ch Analog audio de-embedding for all popular HD / SD SDI formats
	6.3.2	Audio proc amp controls; gain, invert, and delay
	6.3.3	Analog gain processed entirely in the analog domain
	6.3.4	Assign any embedded channel to any discrete audio output
	6.3.5	Ability to re-map channels in embedded video stream
	6.3.6	Programmable video output on SDI input loss
	6.3.7	Silence output on loss of audio input
	6.3.8	Hot-swappable
6.4	**HD DA : 2 in 4 outputs**	
	6.4.1	Dual 1x4 configurable as 1x8
	6.4.2	Automatic cable equalization on inputs
	6.4.3	Automatic or forced rate detection
	6.4.4	Hot-swappable
6.5	**Analog Video PAL DA :1 in 6 out**	
	6.5.1	One differential input
	6.5.2	6 to 8 outputs with double-back module
	6.5.3	Looping and internal terminating selectable with dual-slot back module; internal terminating with single-slot back module
	6.5.4	±3 dB gain adjustable range
	6.5.5	>50 MHz bandwidth
	6.5.6	Hot-swappable
6.6	**Analog Audio Stereo DA : 1 in 4 out**	
	6.6.1	Balanced inputs and outputs

	6.6.2	Remote and local control for independent channel gain adjustment
	6.6.3	Local control for selecting output configuration
	6.6.4	Configurable outputs to one of the following options:
	6.6.5	Eight outputs designated to one channel (1x8)
	6.6.6	Four outputs designated to channel A, four outputs designated to channel B (dual 1x4)
	6.6.7	Hot-swappable
7	**Audio Equipment**	
7.1	**24 Channel Analog Audio Console**	
	7.1.1	Total number Of Inputs : 24 Total
	7.1.2	Mic/Line Inputs ; 24 Line: 1/4" TRS Phone ; 24 Microphone: 3-pin XLR
	7.1.3	Stereo Line Inputs : 2 Stereo: L/R Paired 1/4" Phone Line & 3-pin XLR Microphone
	7.1.4	In-Line Inputs/Returns : No
	7.1.5	AUX Sends : 4 Aux Sends
	7.1.6	AUX Returns : 4 Stereo Returns
	7.1.7	Inserts : 1/4" TRS Phone - Mono Inputs, Main Output and Subgroup Outputs
	7.1.8	BUS (Group) Outputs : 2 Subgroups: Balanced 3-pin XLR
	7.1.9	2 Trk Master I/O : Mix L/R: Stereo Paired 3-pin XLR Balanced and 1/4" Phone
	7.1.10	ALT I/O : ALT Stereo: L/R Stereo Paired 1/4" Output
	7.1.11	Monitor Outputs : Monitor: L/R Stereo Paired 1/4" TRS Phone
	7.1.12	EQ Section
		High Filter: 13kHz, +/- 15dB
		Hi-Mid: 550Hz - 13khz, +/- 15dB, Q=1.5
		Lo-Mid: 80Hz - 1.9kHz, +/- 15dB, Q=1.5
		Low Filter: 80Hz, +/- 15dB
	7.1.13	Solo/Mute : All Input Channels
	7.1.14	Channel Level Control : 100mm Faders
	7.1.15	Trim/Gain Control : Rotary Potentiometers
	7.1.16	Phantom Power : +48V Phantom individually switched
	7.1.17	Metering : 12-segment LED bar graphs
	7.1.18	Frequency Response : 20Hz to 20kHz <1dB
	7.1.19	Dynamic Range : Not Specified by Manufacturer
	7.1.20	Signal-to-Noise Ratio : Measured RMS, 22Hz to 22kHz Bandwidth
	7.1.21	-128dBu Mic E.I.N. @ unity gain, 150 ohms source impedance
	7.1.22	Total Harmonic Distortion (THD); <0.006%Mic sens. -30dBu, +20dBu at all outputs @ 1kHz
7.2	**Active Studio Monitor-1**	
	7.2.1	Configuration : 2-Way

	7.2.2	Low-Frequency : 8" woofer
	7.2.3	High-Frequency : 1" soft dome tweeter
	7.2.4	Frequency Response : 35Hz - 35kHz
	7.2.5	Max Peak SPL : 109 dB
	7.2.6	Amplifier Class : Class A-B
	7.2.7	Power Output : 100W
7.3	**Active Studio Monitor-2**	
	7.3.1	Configuration : 2-Way
	7.3.2	Low-Frequency : 4" woofer
	7.3.3	High-Frequency : 1" soft dome tweeter
	7.3.4	Frequency Response : 50Hz - 35kHz
	7.3.5	Amplifier Class : Class A-B
	7.3.6	Power Output : 30W
7.4	**Telephone Hybrid (2 Channel)**	
	7.4.1	Separate Send level and Receive level meters for each hybrid.
	7.4.2	Place caller on-hold via front panel button.
	7.4.3	Auto-Answer with selectable ring count.
	7.4.4	Wide-range AGC and Dynamic EQ by Omnia, with adjustable gain settings.
	7.4.5	Adjustable caller override improves performance and allows you to individualize the degree to which the announcer ducks the caller audio.
	7.4.6	Digital Dynamic EQ and adjustable smart leveller keeps audio spectrally consistent from call to call.
	7.4.7	New EQ High and EQ Low display meters for each hybrid.
	7.4.8	Incoming Line Capacity - (1) POTS Analog for Hx1, (2) POTS Analog for Hx2
	7.4.9	Audio Interfaces- Analog
	7.4.10	Ringing and On-Air status for each hybrid.
	7.4.11	Input Range : Select between MIC and LINE levels
	7.4.12	Input Level : Adjustable from -10 to +4 dBu (nominal)
	7.4.13	Impedance : Bridging, > 50K Ohms
	7.4.14	Analog Clip Point : +21 dBu
	7.4.15	Analog-to-Digital Converter Resolution : 20 bits
	7.4.16	Analog Outputs Connector : XLR Male, Pin 3 High
	7.4.17	Output Level : Nominal at +4 dBu
	7.4.18	Impedance : <50 ohms
	7.4.19	Digital-to-Analog Converter Resolution : 24 bits
	7.4.20	Headroom Before Clipping : 20 dB headroom from 4dBU nominal levels
	7.4.21	Frequency Response : 200 to 3400 Hz, +/- 1 dB
	7.4.22	THD+N/Input : < 0.5% THD+N using 1 KHz sinewave
	7.4.23	Signal to Noise : >90 dB

	7.4.24	General purpose Input/output : Single 9 pin D-Sub connector with 2 status outputs (Ringing and ON-AIR) and 2 control inputs (ON and OFF) per hybrid
	7.4.25	Trans-hybrid Loss : > 55 dB
8	**Other Equipment**	
8.1	**Compact Intercom**	
	8.1.1	Standard 19"/1U rack design
	8.1.2	Supports 8-Way talkback
	8.1.3	8 sets of ITC-100SL with belt-pack accessories
	8.1.4	Additional external earphone and microphone interface
	8.1.5	Dual colour tally light indicator
	8.1.6	Selectable channel talk, broadcast to all or mute
	8.1.7	Enables clean and clear communication between the camera crew and the director.
	8.1.8	Communication distance up to 200m
8.2	**Portable ENG Camera**	
	2.2.1	Imaging Device : 3-chip 1/3" -type MOS 2.2 megapixels
	2.2.2	Resolution : 1920 x 1080
	2.2.3	Horizontal Resolution : 1,000 TV lines or more (1920 x 1080i mode)
	2.2.4	Minimum Illumination : 0.12 Lux (F1.6, Gain 18dB) or better
	2.2.5	S/N Ratio : 60 dB (Y) (typical)
	2.2.6	Optical System : prism system
	2.2.7	Zoom System : 14x or better motorized Optical Zoom Lens
	2.2.8	Focus: AF / MF selectable.
	2.2.9	Iris : Auto/manual switchable
	2.2.10	Optical Filters : Clear; 1/4 ND, 1/16 ND; 1/64 ND
	2.2.11	Shutter speed ; 1/32 to 1/2000 sec
	2.2.12	Gain settings -3 dB to 16 dB
	2.2.13	White balance ; AWB, MemA, MemB, Preset (3200 deg K)
	2.2.14	Built-in LCD Monitor : 3.5"-type color LCD; 16:9
	2.2.15	Audio Input : Mic / Line selectable - XLR
	2.2.16	Video Output : HD-SDI: 1 x BNC
	2.2.17	Genlock : 1 x BNC
	2.2.18	Memory Card Slots : 2
	2.2.19	Recording Format: MPEG4 (AVC Intra or XAVC)
	2.2.20	RCP interface connector
	2.2.21	Built in microphone
	2.2.22	Standard Accessories; Lens, Lens hood with cap, 3.5" LCD Monitor, Battery pack, Charger, AC Adopter.
8.2	**HD/SD 12-Channel Portable Video Studio**	
	8.3.1	Support for 12 HD or SD inputs in a variety of configurations:
	8.3.2	HD Mode: 12 HD-SDI / 9 HD-SDI + 3 HDMI
	8.3.3	SD Mode: 12 SD-SDI / 9 SDI + 3 HDMI

	8.3.4	2 SDI Outputs, which can be assigned to AUX, Program (PGM), Preview (PVW) or PGM clean
	8.3.5	1 HDMI output for multi-view monitoring
	8.3.6	Audio I/O
	8.3.7	Audio Inputs: 4 analogue balanced XLR
	8.3.8	Audio Outputs: 2 analogue balanced XLR. Supports embedded audio SDI output
	8.3.9	Two DSK, supports Key and Fill
	8.3.10	Cut, Mix and Wipe with borders
	8.3.11	Embedded Audio Support
	8.3.12	Built-in Monitor Display ; 17.3" HD TFT LED backlit, 1600x900 pix
	8.3.13	Clock on screen
	8.3.14	Countdown counter on multiscreen
	8.3.15	Built-in Intercom and Tally unit ; 8 channels
	8.3.16	Two PIP displays with user-defined borders
	8.3.17	Audio Delay up to 16 fields, or 8 frames
	8.3.18	Tally, GPI interface and RJ45 for firmware upgrade
	8.3.19	AC Adopter (DC 12V)
8.4	**10 channel Portable Audio Console (With optional battery operation)**	
	8.4.1	Total number of Inputs; 10
	8.4.2	2 state-of-the-art Mic Preamps
	8.4.3	3-band EQs for warm and musical sound
		Mic/Line Inputs
	8.4.4	Gain Range: +14 dB to +60 dB
	8.4.5	Max Input Level: +12 dBu @ +10 dB gain
	8.4.6	Line: 1/4" TS Phone1/4" TRS jack, electronically balanced
	8.4.7	Impedance: 20 kOhms balanced, 10 kOhms unbalanced
	8.4.8	Gain Range: -10 dB to +40 dB
	8.4.9	Max Input Level: +22 dBu @ 0 dB gain
		Stereo Line Inputs
	8.4.10	2xXLR or 2x ¼" TRS jack, balanced
	8.4.11	Impedance: 20 kOhms balanced, 10 kOhms unbalanced
	8.4.12	Gain Range: -20 dB to +20 dBMax
	8.4.13	Input Level: +22 dBu @ 0 dB gain
		Main Output
	8.4.14	XLR or 1/4" TRS jack, electronically balanced
	8.4.15	Impedance: 240 ohms balanced, 120 ohms balanced
	8.4.16	Max Output Level: +28 dBu
		Headphone Output
	8.4.17	1/4" TRS jack, unbalanced
	8.4.18	Max Output Level: +19 dBu/150 ohms (+25 dBm)
	8.4.19	Phantom Power

	8.4.20	+23 V Phantom with AC Adapter
	8.4.21	+18 V Phantom with 9 V Battery
		Metering
	8.4.22	Clip LEDs on all channels and dedicated inserts on all mono channels
		Power
	8.4.23	Power Consumption: 50 W; 220-230 V ~50/60 Hz Connector: Standard IEC
	8.4.24	Battery 9V (alkaline)
8.5	**Portable Audio Recorder (With optional battery operation)**	
	8.5.1	Four microphones - Stereo Cardioid and Omni Condenser Mics
	8.5.2	44.1k to 96k sampling rates for WAV file recording
	8.5.3	MP3 and WAV file Recording and Playback
	8.5.4	XLR Mic Inputs with Phantom Power
	8.5.5	High-performance microphone preamp with 60dB of gain
	8.5.6	Premium A/D converters with over 100dB signal to noise ratio
	8.5.7	3.5mm jack Line Inputs and Outputs
	8.5.8	Low Cut Filter, Analog Limiter and Auto Gain Control
	8.5.9	Built-in Speaker
	8.5.10	Runs on Rechargeable Li-Ion Battery or AA Batteries

SECTION III
VENDOR INFORMATION

Appendix B: Vendor Information

Short Responses can be placed within the cells provided in the tables below. Additional Information can be attached as appendices, but should be explicitly referenced from within the appropriate cells.

Vendor Information Form

Company Name
Name (print)
Signature
Title
Date
E-mail
Phone
Fax

Primary Vendor Contact or Sales Representative

Name and Title
Address

E-mail
Telephone
Fax

Person(s) Authorized to Negotiate and Make Commitment for Vendor
Name and Title
Address
E-mail
Telephone
Fax

Designated Technical Contact for Response Clarification and Questions
Name and Title
Address
E-mail
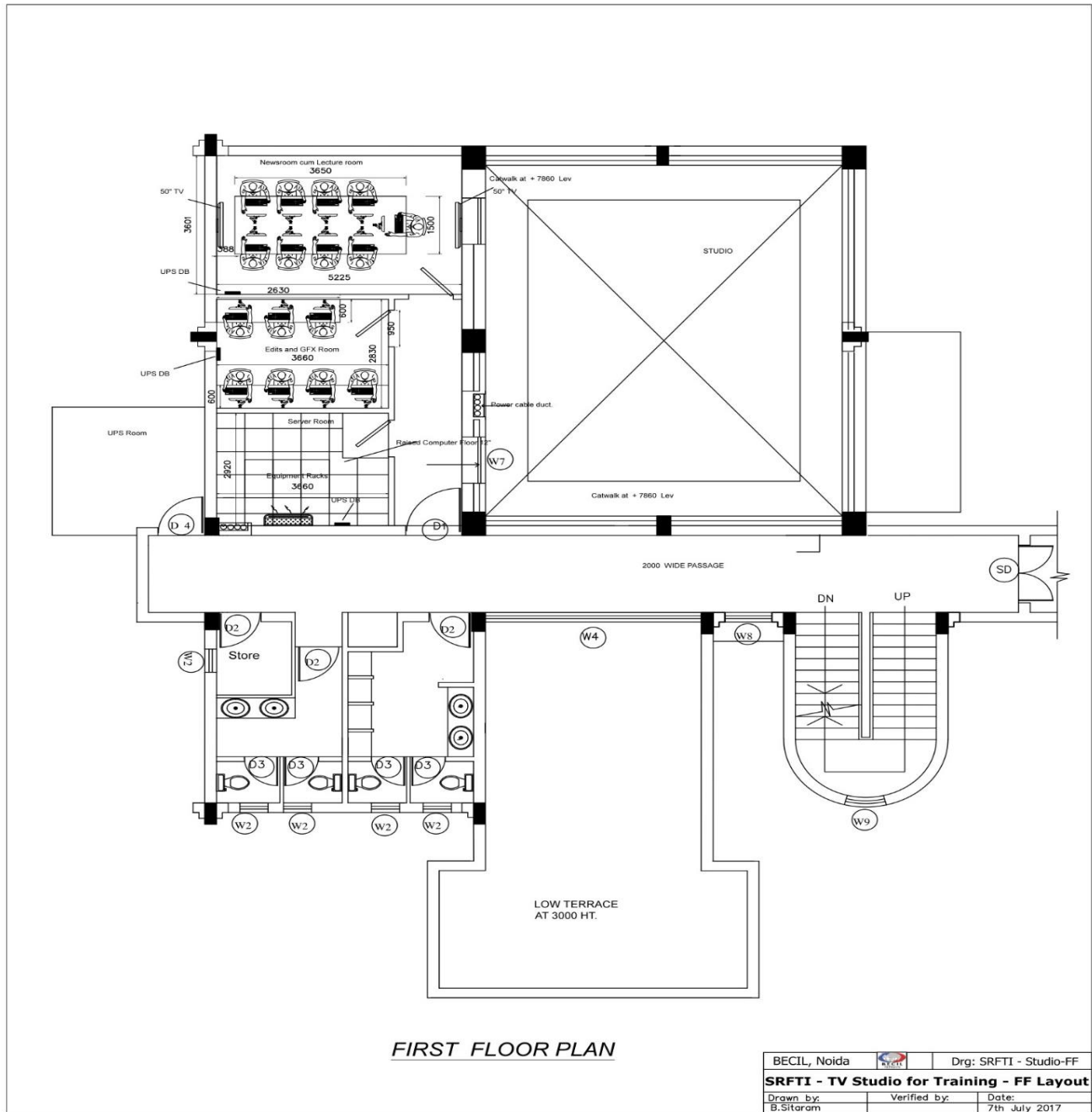Telephone
Fax

ENCLOSURES (Check List)

3.2   Please ensure that following documents have been enclosed along with the bid proposal:

1. Proof of payment for fee of Rs. 4000 /- for purchase of tender document in the form of cash receipt or bank draft for tender documents downloaded from site.

2. Bank draft or banker's cheque for Rs. 10, 00,000/- towards earnest money deposit.

3. The bidders should have successfully executed works related to installation & commissioning of TV/Media facilities in last three years and should submit the documentary proof such as work order/completion certificate etc.

4. The bidder should be registered. A copy of registration should be submitted.

5. Letter of Authorization from OEM to quote in the tender. Original copy of Authorization letter should be submitted

6. A point by point full compliance statement in respect to all parameters related to the concerned equipment's/items from the respective principle manufacturers (OEM) should be submitted in the prescribed format given at Table 1.

7. A separate point by point compliance statement duly signed by bidder in respect to all points laid down in the specifications for all the equipment/item(s) must be submitted.

8. A copy of the latest / last annual report of the company.

9. List with details (including name of client) of similar work executed in India and abroad, products / services used in chronological order

10. Separate list of item recommended by bidders, which in the opinion of the bidder have been left out.

11. Detailed bill of material duly filled in giving the offered material / equipment etc strictly as per the bill of material included in the tender document.

12. Full technical details of the offered equipment

13. Duly signed and stamped compliance statement item wise with respect to technical specifications highlighting deviation if any.

A. No cost details are to be included in the technical bid under any circumstances. The signed and stamped copies of the technical bid containing requisite documents are to be sealed in separate envelope and marked appropriately.

B. The commercial bid shall contain exactly similar offered bill of material included in the technical bid but with full details on the rates, total cost. Only one copy of commercial bid duly signed and stamped is to be sealed in a separate envelope and marked accordingly.

C. Both technical & commercial bids in respective sealed envelopes are to be further sealed in an envelope and should be superscripted at the top as:

i. "Proposal for **SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF TV STUDIO SETUP AT SATYAJIT RAY FILM & TELEVISION STUDIO, (SRFTI) KOLKATA"**.

D. The tender has to be addressed to The Chairman & Managing Director, C-56, A/17, Sector-62, Noida-201301, U.P and the delivery of the same must be ensured at this office before 1200 hours on 06th November 2017.
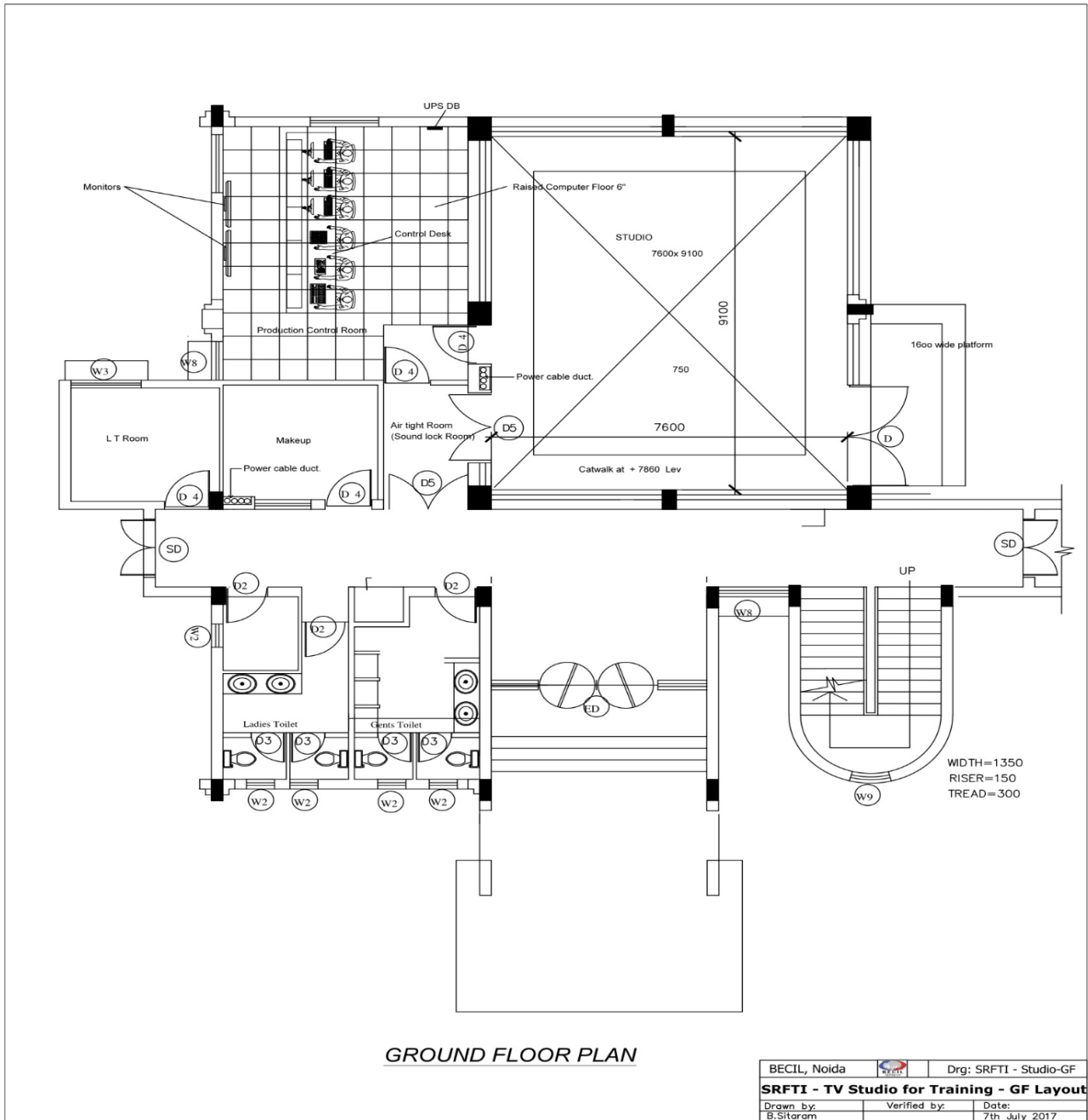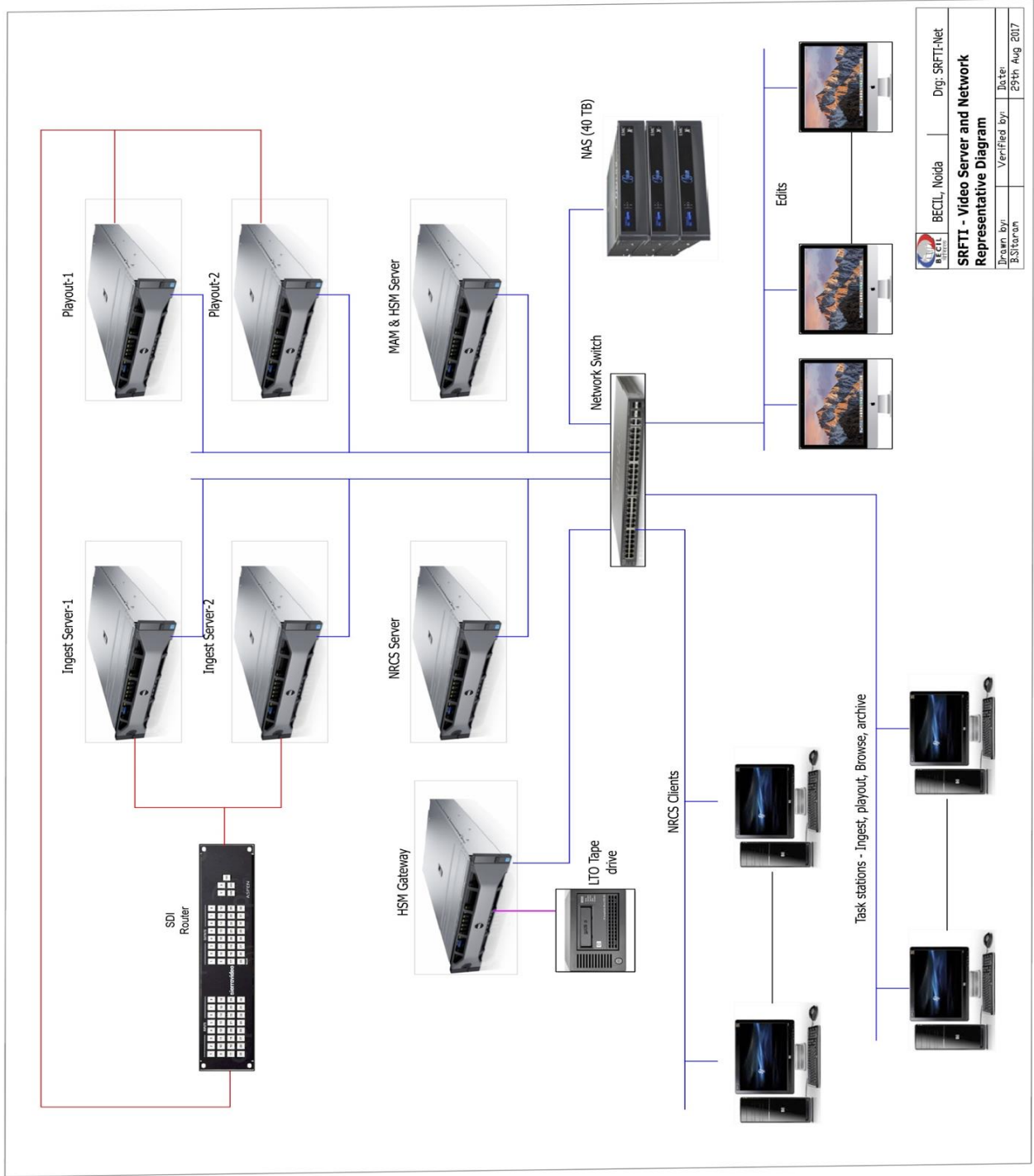
STUDIO LAYOUT
First Floor

FIRST FLOOR PLAN

BECIL, Noida		Drg: SRFTI - Studio-FF
SRFTI - TV Studio for Training - FF Layout		
Drawn by:	Verified by:	Date:
B.Sitaram		7th July 2017

STUDIO LAYOUT
Ground Floor

GROUND FLOOR PLAN

BECIL, Noida		Drg: SRFTI - Studio-GF
SRFTI - TV Studio for Training - GF Layout		
Drawn by:	Verified by:	Date:
B.Sitaram		7th July 2017

SRFTI NETWORK DIAGRAM

SRFTI BLOCK DIAGRAM