प्रसार भारती/ PRASAR BHARATI
भारत का लोक सेवा प्रसारक/ INDIA'S NATIONAL PUBLIC SERVICE BROADCASTER
आकाशवाणी महानिदेशालय/DIRECTORATE GENERAL: ALL INDIA RADIO
योजना और विकास एकक आकाशवाणी भवन, संसद मार्ग, नई दिल्ली-110001
P & D UNIT, AKASHVANI BHAWAN, SANSAD MARG, NEW DELHI-110001
[क्रय अनुभाग/PURCHASE SECTION]

No. 01(58)11/NIT-37/2020-D(P)/E/2251 Dated: 17.07.2020

Notice inviting e-Tender No.37/2020

E-tenders are invited for and on behalf of Director General, All India Radio under two bid systems for Supply/SITC/SETC of the following Equipments from firms registered with GeM/NSIC and from reputed **Indian** manufacturers/authorized agents and stockiest dealing with the equipments as detailed below:

Sl. No.	Tender Ref. No.	Description of Stores	Qty.	Estimated Cost of work/ Procurement (Rs. in Lakh)	EMD (Rs. In Lakh)	Tender Submission Date/Time (online)	Tender Opening Date/Time (Online)
1	No. 12(49)2/ SC/2020-D(P)/668-D(P-S)Cell/E	Supply of Studio Consoles	(34) Places	1493.43	44.80	16.09.2020 (02:30 PM)	16.09.2020 (03:00 PM)

NOTE:

i. The bid forms, General Instructions to Bidders and other details including amendments/ changes can be viewed/ downloaded from the website http://prasarbharati.eproc.in.

ii. Tender notice is also available on the Prasar Bharati website www.prasarbharati.gov.in (using the link: Tender) and CPP PORTAL on website http://eprocure.gov.in.

17/7/2020

(हृदेश कुमार/ Hirdesh Kumar)
निदेशक (अभि.)/ Director (Engg.)
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[क्रय अनुभाग/PURCHASE SECTION]

No. 01(58)11/NIT-37/2020-D(P)/E/2294 Dated: 17.07.2020

Notice inviting e-Tenders No. 37/2020

A. GENERAL INSTRUCTIONS TO BIDDERS:

1. **The tenders under this NIT are only for Indian bidders as per Amendment in General Financial Rules, 2017 - Global Tender Enquiry issued by Ministry of Finance Department of Expenditure Letter F. No. 12/17/2019-PPD dated 15.05.2020.**
2. The scope of work for stores to be tendered are available in the complete bid documents which can be viewed / downloaded free of cost from Prasar Bharati portal www.prasarbharati.gov.in or e-tender portal of AIR http://prasarbharati.eproc.in, or CPP Portal http://eprocure.gov.in.
3. Both Technical Bid and Financial Bid will be submitted concurrently duly digitally signed in the website http://prasarbharati.eproc.in.
4. It is highly recommended that the bidders should not to wait till last date of bid submission to avoid complications like internet connectivity issue, network problems, system crash down, power failure, browser compatibility issue, system compatibility issue, improper digital signature certificate problem etc. In view of this context, neither Prasar Bharati nor C1 India Pvt. Ltd. will be responsible for such eventualities. No claim shall be entertained on account above. Bidders are advised to upload their bids well in advance to avoid last minute technical snags.
5. All Corrigendum/Amendment/Corrections, if any, will be published on the Portalhttp://prasarbharati.eproc.in.
6. All documents / papers uploaded / submitted by the bidder must be legible.
7. It is mandatory for all the bidders to have Class-III Digital Signature Certificate with both DSC Components i.e. Signing & Encryption (in the name of person who will sign the bid document) from any of the licensed Certifying Agency under CCA, Ministry of Electronics and Information Technology, Government of India to participate in e-tendering portal of Prasar Bharati. Bidders can see the list of licensed CAs from the link www.cca.gov.in, C1 India Pvt. Ltd. also facilitate Class III Digital Signature Certificate.
8. To participate in the e-tendering submission, it is mandatory for the applicants to get registered their firm/joint venture with the Prasar Bharati e-tendering portal http://prasarbharati.eproc.in to have user ID & Password by submitting a non-refundable Annual registration charges for vendor/supplier are given in table below through online mode (net banking/ debit card/ credit card). Validity of registration is 1 year.

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9. To participate in e-bid, bidders have to pay e-Tender Processing fee (non-refundable) per tender per bid through online mode (net banking/ debit card/ credit card) as per following table-

Estimated Value of the Tender	Processing Fees per Tender per Bidder
Less than or Equal to Rs.10 Lakhs	Rs. 475.00 + 18% GST
More than 10 Lakhs But Less than or Equals to 50 Lakhs	Rs. 925.00 + 18% GST
More than 50 Lakh	Rs. 1150.00 + 18% GST
Annual Charges for Online Bidder/ Vender for the Registration	Rs. 450.00 + 18% GST

a. Bid document contains certain conditions for Manual submission of tender and are now redundant. Document shall be deemed to have been modified to that extent.
b. Paying Authority will be respective Pay & Accounts office of the Zonal Office.

10. The bidder may modify or withdraw their bid after submission prior to the Bid Due date. No bid shall be modified or withdrawn by bidder after the bid due date and time.
11. Both 'EMD' and 'Tender Document Fee', if any, are mentioned in individual tender document published at Prasar Bharati e-Tendering Portal(https://prasarbharati.eproc.in).
12. For helpdesk, please contact e-tendering cell and Help Desk Support Monday to Friday Ph: 0124-4302033/36/37, prasarbharatisupport@c1india.com.
13. Page No. shall be given on each and every paper/documents serially uploaded in the technical bid.
14. Bidders shall ensure to quote rate of each items. If any cell is left blank and no rate is quoted by the bidders, the rate of such item shall be treated as "0" (Zero).
15. The bid security (EMD) may be accepted in the form of Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee from any of the Commercial Banks or payment online in an acceptable form. The Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee from any of the Commercial Banks may be in favour of **PB, BCI, DG: AIR, New Delhi** with the validity for a period of forty-five days beyond the final bid validity period.
16. **'EMD deposit'** shall be placed in a single sealed envelope superscripted with tender reference no. and date of opening so as to reach Assistant Engineer in Room No.326/346, P&D Unit, Akashvani Bhawan, DG:AIR, New Delhi before scheduled time on prescribed tender opening date. EMD received late shall be summarily rejected. Hard copy of any other tender document shall not be accepted.
17. Performance Security may be accepted in the form of an Account Payee Demand Draft, Fixed Deposit Receipt from a Commercial bank, Bank Guarantee from a Commercial bank or online payment in an acceptable form. The Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee from any of the Commercial Banks may be in favour of

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PB, BCI, DG: AIR, New Delhi with the validity for a period of sixty days beyond the date of completion of all contractual obligations of the supplier including warranty obligations.

Estimated Value of the Contract/ Tender (X)	Amount of Bid Security	Amount of Performance Security
X is less than or equal to Rs. 10 crore	2%	5%
X is greater than Rs. 10 Crore and less than or equal to Rs. 15 Crore	3%	7%
X is greater than Rs. 15 Crore and less than or equal to Rs. 20 Crore	4%	8%
X is greater than Rs. 20 Crore	5%	10%

18. The successful tenderers will be required to furnish Security Deposit as per above table within 30 days of placement of contract.
19. Tenderers may ask any clarification, if required, before the date stipulated in the details of tender items for the purpose. After that no request will be entertained.
20. Micro and Small Enterprises (MSEs) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) or are registered withthe Central Purchase Organisation or the concerned Ministry or Department or Start-ups as recognised by Department of Industrial Policy & Promotion (DIPP) **for the items required** in NIT shall be exempted from payment in respect of cost of Earnest Money as per the Government instructions on the subject on submission of documentary evidence of valid Registration. Policy is meant for procurement of only goods produced and services rendered by MSEs. However, traders are excluded from the purview of Public Procurement Policy.
21. The purchaser reserves the option to give Purchase preference to the offer from Public Sector Units and/or from Small Scale Cottage Industries Units over those from other firms, in accordance with policies of the Government of India from time to time.
22. Tenderers shall separately indicate the rate and amount of GST/IGST etc. as applicable on the date of tendering in their offer failing which the offer will be summarily rejected.
23. Tenderers have to submit GST Registration Certificate while uploading the tender.
24. Tenderers shall separately indicate the HSN/SAC code, rate and amount of GST/IGST as applicable on the date of tendering in their offer, failing which the offer will be summarily rejected.
25. IGST and Compensation Cess (wherever applicable) will be levied on imports.
26. Public Procurement (Preference to Make in India) Order No. P-45021/2/2017-B.E-II dated 15.06.2017 of Government of India, Ministry of Commerce and Industry, Department of Industrial Policy and Promotion shall be applicable.
27. Terms Conditions given in specification will supersede for conflict withany terms and condition given in AIR Tender Document.
28. In Repeat Order Clause 6.9, page-10 and Clause 22, page-52 of AIR Tender Document, 50% may be read as follows-

(i) Variation of Quantities at the Time of award: At the time of awarding the contract, the quantity to be procured must be re-judged based on the current

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data, since the ground situation may have very well changed. The tendered quantity can be increased or decreased by 25 (Twenty-Five) per cent for ordering, if so warranted.

(ii) Option clause: In case of long running, yearly procurements, to take care of any change in the requirement during the currency of the contract, a plus/minus option clause (normally 25 (Twenty-Five) per cent) is incorporated in the tender document, reserving purchaser's right to increase or decrease the quantity of the required goods up to that limit without any change in the terms and conditions and prices quoted by the tenderers.

B. **LIST OF MANDATORY DOCUMENTS** (to be uploaded with tender):

1. Copy of EMD.
2. AIR Tender Document duly filled and signed on each page along with all Annexures and amendment.
3. AIR Technical Specifications duly signed on each page.
4. Integrity Pact (for estimated contract value of Rs. Two Crores or more) duly filled and signed.
5. Letter of authority to sign and upload bid documents.
6. Original Equipment's Manufacturer's (OEM) Authorization for Equipment quoted.
7. Past performance along with the user certificate in respect of Supply/ SITC/SETC of the Equipment quoted.

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PRASAR BHARATI / प्रसार भारती

(BROADCASTING CORPORATION OF INDIA) / भारतीय प्रसारण निगम

DIRECTORATE GENERAL: ALL INDIA RADIO / आकाशवाणी महानिदेशालय

PLANNING AND DEVELOPMENT UNIT / योजना एवं विकास एकक

Technical Specification for Studio Consoles under 12th Plan

SECTION-I : GENERAL

1. Background & Objective of Project

1.1 All India Radio has more than 200 Studio Setups across its network. These Studio setups are already partially digitized with Recording & Playback are already being done in digital mode. It is planned to completely digitize the whole studio by introducing Digital Consoles in the circuit.

1.2 Under this project, Supply of Digital consoles are proposed to be done at 29 Stations & two NABMs. List of stations, Numbers & type of consoles to be provided at each of these stations is available at Annexure-IA & Annexure-IC.

1.3 Consoles as per list at Annexure-IB shall be supplied to respective Zonal office.

2. Scope of Project

2.1 The Scope of this tender is for supply of Digital Transmission, Switching and dubbing consoles at 29 AIR Stations & NABMs (List of stations at Annexure-IA & IC).

2.2 In addition to this, Consoles as per list at Annexure-IB shall be supplied to respective Zonal office.

2.3 Features of Consoles & Audio Specifications of consoles are given in the Clause **1 & 2 of section III. Clause 3 & Clause 4 of section III** deal with specifications of Gigabit Ethernet Switch & Digital Clocks.

2.4 Digital Transmission Console shall be installed in Transmission/Live Studio). Digital Switching Console shall be installed in Control Room. Digital dubbing Console shall be installed in Recording Studio.

2.5 All the required cables, patch cords etc. required for making the consoles fully functional will be supplied by the tenderer.

2.6 Mating connectors for all the ports available in console shall also be supplied. Mating connectors shall be of same brand as used in the console or of Neutrik/Swithcraft/Amphenol/ ADC brand.

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AE(SD)	ADE(SD)	DE(SD)	DDG-E(NZ)

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उप महानिदेशक (अभि.)/Dy. Director General (Engg.)

3. Documents to be submitted with Tender Document

The tenderer must submit the following documents along with the tender:

3.1 A Clause-by-clause full compliance statement in respect to specifications of Consoles (Clause 1-4 of Section-III) from the OEM of the offered Consoles.

3.2 In addition to above, a separate point by point compliance statement duly signed by the bidder in respect of all the points laid down in the specifications for all the equipment/item(s) should also be submitted along with the bid by the bidder

3.3 Detailed printed literature of Consoles giving complete details of features and performance data on non-returnable basis to facilitate the technical evaluation.

3.4 Back to Back Support Commitment from OEM of Console for the period of five Years.

3.5 A copy of un-priced Bill of Material (BOM) indicating make, model no. , complete configuration details of offered hardware shall be quoted clearly.

3.6 Documents in support for the offered console, having been deployed in broadcasting organizations.

4. Tender Evaluation

4.1 The tender shall be technically evaluated on the basis of conformity of bid to Technical specifications.

4.2 Technical evaluation shall be done on the basis of compliance statement, customer reference certificates & technical literature related to quoted products. Vendors may be asked to demonstrate the functioning of consoles, if required.

4.3 The bids fully meeting technical specifications shall be considered technically fit.

5. Pre-Dispatch Inspection & Supply

5.1 All the Hardware would be inspected before dispatch by indenter. The pre-dispatch inspection shall be done by authorized representatives of All India Radio at OEM's / supplier's premises before shipment.

5.2 An Acceptance Test Procedure (ATP) should be prepared by the tenderer and got approved from the indenter after the firm order is placed.

5.3 The tenderer will give a notice in writing to the indenter 2 weeks before the commencement of inspection.

5.4 The tenderer shall provide all equipment, materials and manpower as may be required for performing various tests as per ATP. In case of inspection outside

Delhi, the expenses on air travel, and accommodation and daily allowances for AIR's inspecting officers would be borne by All India Radio.

5.5 All the consoles shall be configured as per AIR requirement before PDI.

5.6 Pre-dispatch inspection would comprise complete testing including functional tests and various measurements of 10% of the equipment. Rest of the equipment shall be accepted on the basis of OEM Test Certificate in respect of measurement taken on the equipment.

6. INSTRUCTION MANUAL

One set of Maintenance/operational manuals of each hardware from OEM should be provided to each station. A softcopy of all manuals on CD/DVD ROM Media shall also be provided to each station, zonal office, AIR Directorate & NABM(T).

7. Warranty & Maintenance

7.1 The Consoles shall be warranted for trouble free operation for a minimum period of five years from the date of Supply. Part of the equipment shall

7.2 In case of failure of any equipment or its sub module, the tenderer will send a replacement part to station. The station will replace the faulty part and test the whole equipment. The faulty part shall be sent back to tenderer at tenderer's cost after rectification of fault.

7.3 However, if it is not possible to rectify the fault remotely or by replacement of module, Onsite support for Replacement / servicing / debugging of software/ reinstallation/ reconfiguring of software etc. should be provided by tenderer free of cost.

7.4 No separate charges will be paid for visit of engineers for attending to faults and repairs or supply of spare parts.

7.5 The bidder will have to provide 99% of uptime at each station during the warranty period.

7.6 A Standard Operating Procedure (SOP) for rectification of faults shall be proposed by bidder as part of tender document to meet the 99% of uptime. The SOP shall be finalized by AIR in consultation with tenderer.

7.7 Tenderer will provide checklists of maintenance actions to be performed on daily, weekly and monthly basis. Tenderer will also extend assistance / help to AIR in issue of Guidelines /application note / procedure etc for administration & maintenance of the system from time to time.

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SECTION-II : BILL OF MATERIAL

Gigabit Ethernet Switch for use

S. No.	Item	Quantity	Units	Remarks
Equipment				
1	**Transmission Console** Spec. Ref. : Section-III-Clause 1	35	Nos	Station-wise List at Annexure-IA, IB & IC
2	**Switching Console** Spec. Ref. : Section-III-Clause 1	32	Nos	Station-wise List at Annexure-IA & IB
3	**Dubbing Console** Spec. Ref. : Section-III-Clause 1	32	Nos	Station-wise List at Annexure-IA & IB
4	**Gigabit Ethernet Switch for use with Audio Over IP** Specs Ref : Section-III Clause 3	64	Nos	Station-wise List at Annexure-IA & IB.
5	**Digital Clocks (Automatic Time Synchronising)** Specs Ref: Section-III-Clause 4	58	Nos	2 each at 29 Stations as per Annexure-IA

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SECTION-III : TECHNICAL SPECIFICATIONS

1. FEATURES OF CONSOLES

Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
1.1	**General Features of Consoles**			
1.1.1	The console should be compact ergonomically designed professional product and suitable for reliable operation on 24x7x365 basis working.			
1.1.2	It should be housed in rust-proof pre-painted cabinet/Anodized Metal cabinet.			
1.1.3	The main electronics portion may be in separate 19-inch rack mountable unit. The Operational part (Containing Faders, Switches & Level Display etc) of console i.e console Fader surface should be suitable for Tabletop mounting. However, all the parts of console should be from same OEM.			
1.1.4	The layout of modules / parts / components in the console should be professional to permit easy access to the wiring, inspection, repairs / servicing.			
1.1.5	Inputs, Outputs & other connectors shall not be on the working/Operating Area of the console.			
1.16	All switches / buttons / Selection Points operable by operator should be sturdy and designed for reliable operation for long hours			
1.1.7	The controls for output bus assignment, channel on/off, monitoring level control, talkback & signaling etc. should be appropriately			

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Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
	located on the control surface of the console			
1.1.8	All selection points on the console surface should have clear illuminated status indication or adjacent display for easy understanding			
1.1.9	Status Indications should be provided for signaling, talk-back from other consoles, channel selection & PFL indication			
1.1.10	The controls meant for presenter/RJ like input source selection, output bus assignment, monitoring, talk-back, signaling etc will be appropriately located on the console. All other controls shall be accessible only to the system administrator			
1.1.11	The faders on the console surface should be long-throw (100 mm) conductive plastic type and shall be of reputed make			
1.1.12	The console should be totally self-contained and should function on day to day basis without aid of (connecting to) external computer/Laptop. However, if required, the use of computer/laptop is allowed to upgrade the firmware and configure the console. Once configured, the console should function as standalone device without being connected to any computer/Laptop. Various operational features like channel routing, mix-minus, phantom ON/OFF, EQ, Gain, panning etc shall be available on console surface.			
1.1.13	It should be possible to save & recall the configuration settings of console with appropriate interface screen & control port etc for future reloading by authorized user/administrator.			

Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
1.1.14	The console should support at least two levels of users i.e. Admin & Operator. Admin user should only have power to change the configuration of the console.			
1.1.15	Console Fader surface should Display Time Clock. Clock should be able to synchronize with NTP Server.			
1.1.16	Operating Environmental conditions: The consoles shall be able to work without any problem in the following conditions: Operating Temperature: From 10º C to 35º C Operating Humidity: Up to 80% RH (non-condensing) at 30º C.			
1.1.17	The system shall be used in the vicinity of high frequency & high Power Radio frequency field. Therefore, the system shall conform to electromagnetic Standards as per relevant guidelines for protection requirements relevant to electromagnetic phenomena as per national/international standards.			
1.2	**Digital Parameters**			
1.2.1	The consoles shall have state-of-the-art digital circuitry.			
1.2.2	All the internal Audio Processing in the consoles shall be fully DSP (digital signal processing) based.			
1.2.3	A to D and D to A converters shall have minimum 24 bit resolution.			
1.2.4	Various Control Circuits in the console should be digital and entire switching			

Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
	shall be through solid-state digital switches.			
1.2.5	All digital inputs and outputs should conform to AES3-1992 signal format.			
1.2.6	It should have 48 kHz sampling Rate as default. All analogue signals shall be digitized to default Sampling Rate. All Digital signals shall also be sample rate converted to default sampling rate.			
1.2.7	The console should have Internal Digital reference signal. Provision should also exist to synchronize the console from an external Digital reference signal			
1.3	**Audio Inputs**			
1.3.1	Consoles should accept the Mono Mike, Stereo Line (Analogue) & Digital Audio Inputs.			
1.3.2	The microphone inputs should be available on XLR connectors.			
1.3.3	The Analogue line level inputs and outputs & Digital AES inputs & outputs shall be balanced. These should be available on balanced 3-pin XLR or on 'D' type connector or on RJ 45 connectors.			
1.3.4	Various Consoles should have Mono Mike Inputs as follows: Transmission Consoles 4 Switching Consoles 4 Dubbing Consoles 8			
1.3.5	All Consoles should have 4 (Four) Stereo/8 (Eight Mono) Line Inputs.			
1.3.6	Various Consoles should have 4 (Four) AES Digital Line (Stereo) Inputs.			

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Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
1.3.7	It should be possible to assign any Audio input source to any input Fader without any change in cabling.			
1.3.8	Each of the Mono Mike input should have switchable Phantom Supply of 48 Volts DC. It should be possible to switch on or off the phantom.			
1.3.9	It should be possible to reverse the Phase of each of the Mike input source.			
1.3.10	It should be possible to route the Microphone input to Stereo Outputs using Pan Control on fader surface.			
1.3.11	It should be possible to re-balance the Stereo Analogue input to Stereo Outputs using Balance Control on fader surface.			
1.3.12	Digital Audio Input signal with sampling rates of 44.1 KHz, 48 KHz, 96 kHz and Bit rate of 16/24 shall be accepted.			
1.3.13	Console shall have a built-in Sampling Rate convertor on each Digital input so as to convert Digital Audio Signals of different sampling rate to default sampling rate.			
1.4	**Features of Input Faders**			
1.4.1	Each Fader shall have Selection for routing/assigning any of the input to any of the four output program bus.			
1.4.2	Each fader should fade in from infinity to zero to provide nominal output with minimum 10dB reserve gain.			
1.4.3	Each Fader should have Fader on/off switch for switching on or off selection of the input source.			
1.4.4	Each Fader should have facility of LCD display where Name of input Source can be displayed.			
1.4.5	Inputs should be routed to any Faders using Matrix Router. It should be possible to select any input on any			

Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
	Fader. Routing of any Input to any fader should be possible using console surface or configuration software			
1.4.6	Various Consoles should have Faders as follows: Transmission Consoles 10 Switching Consoles 6 Dubbing Consoles 12			
1.4.7	In case, the frame size (meeting the requirement of numbers of faders) is not exactly matching the requirement of input faders, higher frame size shall be offered.			
1.5	**Audio Output (Logical/Bus)**			
1.5.1	Consoles should provide four independent Audio Outputs after mixing various input sources as per various fader configurations selected by user			
1.5.2	Consoles should provide at least two independent mix-minus bus outputs (mono) for at least two input sources Accordingly, provision should exist in at least two faders for mix-minus selection for input sources connected to those faders.			
1.5.3	It should be possible to route any of above mentioned outputs to any physical Audio output.			
1.6	**Audio Outputs (Physical)**			
1.6.1	All Consoles should have 4 (Four) AES-3 Digital Line (Stereo) physical Outputs.			
1.6.2	All Consoles should have 4 (Four) stereo /8 (Eight) Mono Analog Stereo Line physical.			

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Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
1.6.3	It should be possible to route any of Logical/Bus outputs to any physical Audio output.			
1.7	**Audio over IP (AES 67)**			
1.7.1	Console should support Audio over IP using AES67.			
1.7.2	Console should have two (redundant) Audio Over IP ports.			
1.7.3	Each Audio over IP port should support simultaneous transport of multiple Digital Audio Channels in both directions			
1.7.4	It should be possible to route any Input or Output (Logical/Bus output) to any other Console (installed in other studio) using Audio Over IP port.			
1.7.4	Various inter Studio outputs like Talkback, Console Outputs Outputs etc. shall travel between various Studios (MP Studio, Transmission Room & Control Room) over Audio Over IP.			
1.7.5	Ii should be possible to inter-connect all studios by running two Ethernet Cables from Audio Over IP ports of each console to Audio over IP switch.			
1.8	**Monitoring Outputs, Pre-Fade Listening (PFL) & Headphone Monitors**			
1.8.1	Two separate Stereo Analogue monitoring outputs of 0 dBu nominal level (with Maximum Level of +10 dBu) should be available for monitoring on external speakers.			
1.8.2	In addition to above Monitoring outputs, an inbuilt or external PFL speaker (Mono) & a Headphone Monitoring output to monitor all input/output channels shall also be provided.			

Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
1.8.3	It should be possible to monitor all inputs & (Logical/Bus) output channels on these monitoring outputs.			
1.8.4	Necessary Level control facility should be available for these outputs.			
1.8.5	PFL, Talkback and one Monitoring Output should get muted on activation (Switching on/fading in) of one set of Microphone inputs (those installed in Same room as the console).			
1.8.6	Second Monitoring output should get muted on activation (Switching on/fading in) of second set of Microphone inputs (those installed in Recording Studio).			
1.8.7	Headphone outputs of Monitoring outputs should not be muted by activation of microphones.			
1.9	**Talkback**			
1.9.1	Talk-Back facility with two other consoles installed in other rooms should be possible.			
1.9.2	It should be possible to route Talkback to monitoring output (one providing Monitoring in the Recording Studio)			
1.9.3	One of Announcer (RJ) mike shall be used as Talkback Mike also.			
1.10	**Metering**			
1.10.1	Two Pairs of LCD/LED Level meters should be available to monitor the level on any of the output buses. One Pair of meters should be dedicated for Main Output and other pair should be selectable for other outputs.			
1.10.2	These Meters should show Audio Level (Separately for Left & Right of Stereo Audio Signal) in DBFS Scale.			
1.11	**Ethernet Port**			

Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
1.11.1	Console should have Ethernet port for remote control & configuration purpose.			
1.11.2	By using this Ethernet port, console should support virtual & physical GPIO for signaling.			
1.11.3	Necessary software License for Fader start operation using GPIO over Ethernet shall be provided.			
1.12	**Signaling and Warning Lights**			
1.12.1	Console shall use either Physical GPIO ports or GPIO over Ethernet for configuring fader start/Stop operation signals as well as intimation of ON-AIR /Ready Signal to Studio/Control Room.			
1.12.2	Console installed in Control Room should automatically generate ON-AIR signal for Console (installed in Recording/Transmission Studio) when audio from that console is being Live Broadcast.			
1.12.3	Consoles should have sufficient GPIO/Relays which should operate on the following conditions i) When any of Microphones installed in Recording studio is active ii) When any of Microphone installed in Recording Booth (where Console is installed) is active. iii) When ON-AIR signal from Control Room is active. iv) When any of the above three conditions is true. By operation of these GPIO/Relay, it should be possible to glow warning Lamps.			

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Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
1.13	**Power Supply**			
1.13.1	The console shall work on 230V ± 10%, 48-52 Hz single phase A.C. Supply.			
1.13.2	The power supply unit of the console should be protected against overload, short circuit and over-voltage.			
1.13.3	The power supply of console (all the units of console) shall be convection-cooled and shall not incorporate any cooling fan.			
1.14	**Tone Generator**			
1.14.1	A 1 kHz Tone Generator for feeding Tone shall be available in the **Switching console**. In case, same is not available, a separate Tone Generator shall be provided.			

2. Audio Specifications of Consoles

Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
2.1	**Mono Mike Inputs**			
2.1.1	**Input Impedance :** ≥ 1 K ohms balanced.			
2.1.2	**Input Level range :** Adjustable -60 dBu to -30 dBu (Ref. 0 dBu = 0.775V rms)			
2.1.3	**Mic/Line Input Impedance :** ≥ 3 K ohms balanced			
2.2	**Stereo Line (Analogue) Inputs**			
2.2.1	**Input Impedance :** ≥ 10 K ohms balanced			
2.2.2	**Nominal Input Level :** +4 dBu			
2.2.3	**Input Headroom :** 20 dB above nominal input.			
2.3	**Digital Inputs**			
2.3.1	**Level Reference :** 0 dBFS digital = + 24 dBu analogue (+ 4 dBu = - 20 dBFS)			
2.3.2	**Signal Format :** AES-3 (AES/EBU)			

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Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
2.3.3	**Input Impedance :** 110 ohm Balanced			
2.3.4	**AES input Compliance :** 24 bit with Selectable sample rate conversion, 44.1 kHz to 96 kHz input (Sample rate Capable)			
2.3.5	**Internal Sampling Rate :** 48 kHz			
2.3.6	**A/D Conversion :** 24 bit or better			
2.4	**Analogue Outputs**			
2.4.1	**Output (Source) Impedance :** ≤ 60 ohms balanced			
2.4.2	**Output load Impedance :** 600 ohm			
2.4.3	**Nominal Output Level :** + 4dBu			
2.4.4	**Maximum Output Level :** 24±1 dBu.			
2.5	**Digital Outputs**			
2.5.1	**Level Reference :** 0 dBFS digital = + 24 dBu analogue (+ 4 dBu = - 20 dBFS)			
2.5.2	**Signal Format :** AES-3 (AES/EBU)			
2.5.3	**Output Impedance :** 110 ohm Balanced			

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Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
2.5.4	AES3 Output Compliance : 24 bit			
2.5.5	Output Sampling Rate : 48 kHz			
2.5.6	D/A Conversion : 24 bit			
2.6	Frequency Response			
2.6.1	Mike input of -35 dBu and Console Analogue outputs of +4 dBu/Console Digital Outputs of -20dBFS in the frequency range of 20 Hz to 20 KHz : within ±0.5 dB			
2.6.2	Analogue input of +4dBu/ Digital input of -20dBFS and Console Analogue Outputs of +4 dBu/ Console Digital Outputs of -20dBFS in the frequency range of 20 Hz to 20 KHz : within ±0.5 dB			
2.7	Total Harmonic Distortion+Noise			
2.7.1	Mike input of -60 dBu and Console Analogue Output of +4 dBu at 20 Hz to 20 Khz and measurement with 80 Khz Low Pass filter : < 0.3%			
2.7.2	Line Analogue input of +4 dBu and Console Analog Output of +4 dBu /Digital Output of -20 dBFS at 20 Hz to 20 Khz and measurement with 80 Khz Low Pass filter : < 0.02%			
2.7.3	Digital Input of -20 dBFS and Console Analog Output of +4 dBu in frequency Band of 20 Hz to 20 kHz and measurement with 80 Khz Low Pass filter : < .02%			

Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
2.7.4	Digital Input of -1 dBFS and Console Digital Output of -1 dBFS in frequency Band of 20 Hz to 20 kHz and measurement with 80 Khz Low Pass filter : < .02%			
2.8	**Equivalent Input Noise Level and Signal to Noise Ratio**			
2.8.1	Equivalent input noise for mike Input with Mike input level of -60 dBu and Analogue output Level of +4 dBu and measurement band limited to 20 Hz-20 kHz. : < - 124 dBu			
2.8.2	Signal to Noise Ratio for Line Channel with Analogue Line input level of +4 dBu and Analogue output Level of +4 dBu and measurement band limited to 20 Hz-20 kHz : > 80 dB			
2.9	**Stereo Separation & Inter Channel Cross Talk**			
2.9.1	Stereo Separation (Between L&R of same Output) with Analogue input of Level +23 dBu and Console Analog Output of +23 dBu and the measurement will be taken on 20Hz, 1 KHz and 20 KHz : >60dB			
2.9.2	Inter-Channel cross-talk with Analogue input Level of +23 dBu and Console Analog Output of +23 dBu and the measurement will be taken on 20Hz, 1 KHz and 20 KHz : > 90 db			

3. Gigabit Ethernet Switch for use with Audio over IP

Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
3.1	Suitable Redundant Gigabit Managed Ethernet Switches shall be provided for interconnecting consoles using Audio over IP Ports			
3.2	The switch shall be pre-installed and preconfigured.			
3.3	Each switch port should set itself independently for the optimal speed and determines whether to run in half- or full-duplex mode automatically.			
3.4	Switch shall support both Fast and Gigabit Ethernet devices in the same network.			
3.5	The switch should also provide automatic cable detection.			

4. Digital Clocks (Automatic Time Synchronising)

Sr. No	Specifications	Compliance	Reasons for Deviations (if any)	Details
4.1	Clocks should have suitable LCD Alphanumeric Display.			
4.2	It should have Time Zone setting and Time format of 12/24 hours.			
4.3	The hardware should be able to operate on 230 V +/- 10% V, 48-52 Hz, single phase AC power supply. Power consumption should be less than 20 w.			
4.4	**Time Source inputs :** 1. GPS with Preceision of at least +1ms 2. NTP with Precision of at least +/- 1 ms			
4.5	It should support Time distribution through Ethernet connection.			
4.6	It should be possible to configure the Unit using web-browser.			
4.7	It should have in-built Real-Time Clock with accuracy of +/-2 Minutes/year.			

Annexure-I(A)

Station-wise Requirement of Digital Consoles (Under 12th Plan Scheme of Digitalisation of 29 Studios)

Sno	Station	State	ZONE	Transmission Console	Switching Console	Dubbing Console
1	Dharmashala	Himachal Pradesh	NZ	1	1	1
2	Bhadarwah	J&K	NZ	1	1	1
3	Poonch	J&K	NZ	1	1	1
4	Barmer	Rajasthan	NZ	1	1	1
5	Jhalawar	Rajasthan	NZ	1	1	1
6	Mount abu	Rajasthan	NZ	1	1	1
7	Obra	Uttar Pradesh	NZ	1	1	1
8	Raigarh	Chattisgarh	WZ	1	1	1
9	Ahwa	Gujarat	WZ	1	1	1
10	Godhra	Gujarat	WZ	1	1	1
11	Surat	Gujarat	WZ	1	1	1
12	Balaghat	Madhya Pradesh	WZ	1	1	1
13	Adilabad	Telangana	SZ	1	1	1
14	Tirupathi	Andhra Pradesh	SZ	1	1	1
15	Ootacamund	Tamil Nadu	SZ	1	1	1
16	Purnia	Bihar	EZ	1	1	1
17	Sasaram	Bihar	EZ	1	1	1
18	Hazaribagh	Jharkhand	EZ	1	1	1
19	Keonjhar	Orissa	EZ	1	1	1
20	Soro	Orissa	EZ	1	1	1
21	Murshidabad	West Bengal	EZ	1	1	1
22	Shantiniketan	West Bengal	EZ	1	1	1
23	Tezu	Arunachal Pradesh	NEZ	1	1	1
24	Diphu	Assam	NEZ	1	1	1
25	Haflong	Assam	NEZ	1	1	1
26	Churachandpur	Manipur	NEZ	1	1	1
27	Lungleh	Mizoram	NEZ	1	1	1
28	Belonia	Tripura	NEZ	1	1	1
29	Kailashahar	Tripura	NEZ	1	1	1
Total				29	29	29

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Annexure-I(B)

Station-wise Requirement of Digital Consoles for New Stations (Under 12th Plan Scheme & Special Plan)

Sno	Station	State	ZONE	Transmission Console	Switching Console	Dubbing Console
1	Udhampur	J&K	NZ	1	1	1
2	Sultanpur	Uttar Pradesh	NZ	1	1	1
3	Nellore	Andhra Pradesh	SZ	1	1	1
Total				3	3	3

Annexure-I(C)

Requirement of Digital Consoles for NABM (Under 12th Plan)

S.no	Station	State	ZONE	Transmission Console	Switching Console	Dubbing Console
1	NABM, Delhi	Delhi	NZ	2	0	0
2	NABM, Bhubneswar	Odisha	EZ	1	0	0
Total				3	0	0

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