

SECTION - I

General Terms & Conditions

1. Background & Objective of Project

At present, AIR is streaming some of its popular channels through its website and mobile apps on iOS & Android platforms. In order to upgrade its live streaming services, AIR is looking for state of the art encoding system to deliver high quality streams to its esteemed listeners in India and abroad.

2. Scope of Project

The Scope of this tender is for Supply, Installation, Testing and Commissioning of audio encoders with associated equipment & accessories for setting up a system of Internet live streaming of 80 audio channels of AIR for delivery on desktops computers, various mobile phone platforms, tablets, Laptops etc.

3. Pre-Bid Meet

A Pre-bid conference/meet will be held at an appropriate time before the submission of the bids to bring clarity to all the prospective bidders in respect of the requirements of technical specifications. The date & venue shall be intimated to all the prospective bidders separately. The prospective bidders are required to submit their queries (if any) in writing so as to reach AIR at least three working days before the pre-bid conference.

4. Documents to be submitted with Tender Document

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

- 4.1 A clause-by-clause compliance statement in respect of all the clauses of specification. Compliance statement should be supported by record of various parameters of specifications in the technical literature, which is to be enclosed with the tender.
- 4.2 Detailed printed literature of the offered system giving complete details of features and performance data on non-returnable basis to facilitate the technical evaluation.
- 4.3 The quote should either be from OEM or from their authorized representative/dealer. In case, the quote is from the authorized representative/dealer, a certificate in original from the OEM that the tenderer is the authorized representative/dealer for India should be enclosed with the tender.
- 4.4 Back-to-Back support commitment from OEM of encoder units for the warranty period of three years.

- 4.5 A letter from OEM of the encoder units that the offered model shall not be end of life for support for the next five years.
- 4.6 A copy of un-priced Bill of Material (BOM) indicating make, model no., complete configuration details of offered hardware shall be quoted clearly. Any tender, showing ambiguity in above terms shall be treated as incomplete and it will be rejected.
- 4.7 Customer reference certificate and documents in support for the offered hardware having been deployed in reputed organizations.
- 4.8 Design, architecture and network wiring diagrams.
- 4.9 Implementation schedule of the project.

5. Tender Evaluation

- 5.1 Technical evaluation shall be done on the basis of compliance statement, customer reference certificates, all documents required to be attached, technical literature related to quoted products and demonstration of functioning of the offered system.
- 5.2 If required, the tenderer will have to demonstrate the functioning of offered system during technical evaluation in New Delhi. The tenderer will be required to arrange all necessary testing equipment for demonstration during technical evaluation. The demonstration of the system will have to be conducted within one month from the date of issue of Call letter which will be faxed/emailed on given telephone number/Email address. Non-compliance of demonstration, within the stipulated time, will disqualify the tender.
- 5.3 The bids fully meeting technical specifications & meeting all terms & conditions stipulated in the tender document shall be considered technically fit.

6. Installation, Testing & Commissioning

ITC shall consist of the following:

- a. Installation of all offered equipment in designated room as provided by AIR.
- b. Integration of offered system with existing LAN/internet network.
- c. All passwords, operational keys & drivers for software & hardware shall be handed over to AIR.
- d. After completion of all activities, the system shall be tested for continuous period 15 days and after successful completion of this period the system shall be considered as commissioned.

7. Training

The tenderer shall provide 5 days operational and maintenance training to AIR staff as per details below immediately after completion of SITC:-

- (a) Training modules should be developed & finalized by tenderer in consultation with AIR.
- (b) A complete set of hardcopy and soft copy of training material shall be supplied to each trainee as part of the training module with permission to reproduce and use same for further training of AIR personnel at the AIR's training centre.
- (c) Cost of training, if any, may be quoted. This cost will be included in the cost for calculation of lowest bid.

8. Implementation period :

The SITC work will have to be completed within FOUR months from the date of placement of order.

9. Warranty & Maintenance

- 9.1 A Three years comprehensive onsite warranty from the date of commissioning shall be provided for all the equipment offered as part of the complete system by the tenderer.
- 9.2 During warranty the tenderer shall ensure the following:-
 - a. Repair of all the equipment in the offered system at no cost
 - b. Repair of any broken/faulty part(s) of any equipment using new or replacement parts.
 - c. The equipment can be exchanged with a same/similar new equipment, if the faulty equipment is beyond repair.
 - d. Supply and installation of all upgrades and patches of software & firmware as soon as these are released during the warranty period at free of cost.
- 9.3 Tenderer shall provide for satisfactory working of complete system. The bidder shall provide 99% of uptime on annualized basis and will submit SOP for providing support to achieve the desired up time.
- 9.4 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.

SECTION – II

TECHNICAL SPECIFICATIONS

Sr. No.	Specification	Bidder's Response	Deviation if Any/ Remarks
1.	Multi-Channel Audio Encoding and Streaming System :		
1.1	The offered system should be operational/deployed in reputed Broadcasting Organizations. The offered system should be based on the field-proven modern technology available in international market. It should be suitable for uninterrupted, Continuous & reliable 24x7x365 operation.		
1.2	All the major equipment supplied by the bidder shall be compact & 19" rack-mountable. The system shall be capable of simultaneous audio encoding, and streaming of 80 stereo audio channels. The system offered shall have provision for accepting inputs for stereo audio channels in digital AES/EBU as well as analog format. Each individual encoding unit provided should accept at least 8 stereo channels in either analog (balanced) or digital AES/EBU format for audio encoding and streaming to the streaming/distribution servers or CDN, details of which will be provided by AIR. The vendor shall provide equipment/system to convert analog channels into digital formats and vice-versa for use as inputs to the encoding units as per requirement of the offered system.		
1.3	AIR will provide 24 channels in digital AES/EBU format and 56 channels in analog format (unbalanced). The tenderer shall make provision of conversion from unbalanced to balanced analog audio signal as per requirement of the offered system.		
1.4	Offers with the encoding units designed by installing PCI/PCIe based encoding cards in traditional servers shall not be accepted. The encoding unit shall be self-contained with all encoding and streaming within a single unit.		
1.5	Encoding – The audio content of each of the audio channel should be encoded with built in encoders suitable for Internet live streaming through streaming servers/CDN. The encoding shall ensure quality listening on various platforms/mobile devices. The equipment offered shall support audio encoding formats AAC, HE-AAC v2 and MP3 at multiple bit rates of 32, 64, 96, 128 & 192 kbps at least. It shall be		

Specification for SITC of Audio Encoding System for Internet Live Streaming of 80 Radio Channels of AIR

Sr. No.	Specification	Bidder's Response	Deviation if Any/ Remarks
	possible to encode and stream each audio input channel into multiple encoding formats with multiple bit rates for each format for adaptive streaming applications. Multiple encoding in audio formats namely HE-AAC v2 and MP3 at two different bit rates for each format shall be possible as a minimum requirement.		
1.6	It shall be possible to publish/send each audio stream encoded in different audio formats (e.g. AAC & MP3) onto CDN entry points. It shall be possible to encapsulate each audio stream in a container format like MPEG Transport Stream (TS) or ADTS.		
1.7	<p>Distribution:</p> <p>The unit shall support distribution of each audio stream in TCP, HTTP and Icecast server media formats. Specifically, it shall be possible to configure each stream to send its content to a specified distribution server in either TCP, or Ice cast Media Server format. Additionally, it shall also be possible for the units to accept incoming HTTP pull requests for the distribution of each audio stream.</p>		
1.8	<p>Audio Input sampling rate:</p> <p>Sampling rate of 32, 44.1 & 48 kHz shall be provided. For AES digital input, the clock of the source shall be automatically sensed.</p>		
1.9	<p>Remote Controlling:</p> <p>The equipment/system offered should be remotely configurable and controllable from within LAN & Internet through Remote Management Software should be password protected. Remote control software shall incorporate facility to visualize, configure and fine-tune the audio encoding, and streaming parameters for each channel independently.</p>		
1.9	Operating Temperature: 0° to 40 ° C		
1.10	Operating Power : 220 ± 10% VAC Single Phase, 50 ± 5% Hz		
1.11	Dimension - Dimensions of all the equipment are to be specified by the bidder. (L x B x H)		
2.	Wired Racks: All the racks required to house the equipment as part of the complete system offered shall be		

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Sr. No.	Specification	Bidder's Response	Deviation if Any/ Remarks
	supplied by the tenderer.		
2.1	<p>The racks shall be supplied with following broad specifications:</p> <p>Height :42 U.</p> <p>2 side closed , front back open with doors.</p> <p>Cooling Fans mounted on top of the Rack for proper equipment cooling</p> <p>Two power strip for equipment power</p> <p>Basic frame : made up of steel with powder black colour coated</p> <p>Equipment Mounting Angle (12 nos.): as required.</p> <p>Blank strip: as required.</p>		

SECTION – III

RESPONSIBILITY OF ALL INDIA RADIO

Responsibility of All India Radio shall be limited to providing the following :

- A. **Stereo Audio Feeds:** The Audio Feeds to be streamed shall be provided by All India Radio in digital AES/EBU format (XLR connector, 110 Ohm, Balanced) for digital audio signals and for analog audio signals on XLR/RCA unbalanced, at the place where audio encoding equipment would be installed. Air-conditioned Space for keeping the complete system will be provided by All India Radio at its New Broadcasting House, situated at Sansad Marg , New Delhi -110001.
- B. **Power Supply:** Uninterrupted Power supply for equipment will also be provided at the premises of AIR.
- C. **Computer System:** All India Radio will provide a computer system for installation of Remote controlling software for remote operation.
- D. **Network/Internet connectivity:** All India Radio will provide a dedicated Internet connection from its site to distribution/streaming/CDN-PoP server for uploading of encoded audio streams. **The network configuration requirements (e.g. any specific port to be opened etc.) of the encoding system shall be clearly specified in the tender document keeping in view that the internet will be provided to the system though leased line behind firewall.**
- E. All India Radio will provide details of distribution/streaming/CDN-PoP and coordinate with the CDN service provider for publishing of audio streams.

SECTION – IV

FINANCIAL BID FORMAT

Note :

1. The financial bid should be strictly as per the format given below; any other conditional financial option will not be acceptable.

S.No.	Item Description	Qty.	Unit Price (in Rupees)	Tax	Total Price <u>including Tax</u> (In Rupees)
1.	Supply of complete Audio Encoding System for Internet Live Streaming of 80 Radio Channels of AIR as per technical specification in Section - II.	1 lot			
2.	Installation, testing and commissioning of complete Audio Encoding System for Internet Live Streaming of 80 Radio Channels of AIR as per technical specification in Section - II.	1 job			
3.	Charges for five days onsite training	1 Job			
4.	Any other item(s) / accessories required for completion of the complete Audio Encoding System for Internet Live Streaming of 80 Radio Channels of AIR as per technical specification in Section – II and details may be submitted along with technical bid.	As Requ ired			
5.	Total amount in Rupees (in figures):				
Total in Rupees (in words):					

Name & Signature of the tenderer

With Seal and date
