

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE (SAC)  
AHMEDABAD**

**Tender for Audio Communication and Acoustic Test Equipment**

**Bids to be submitted online**

**Tender No.: SAC/HPUR/SA202100155801 dated 17-10-2024**

## A. Tender Details

|                        |  |
|------------------------|--|
| Tender No :            | <b>SAC/HPUR/SA202100155801</b>         |
| Tender Date :          | <b>17-10-2024</b>                      |
| Tender Classification: | <b>GOODS</b>                           |
| Purchase Entity :      | <b>HPUR</b>                            |
| Centre :               | <b>SPACE APPLICATIONS CENTRE (SAC)</b> |

## Audio Communication and Acoustic Test Equipment

1.This is a Public Tender (Two Part). Price details should NOT be mentioned in technical Bid, failing which the offer will be considered as invalid.

Bidders who are interested to participate in tender opening should send confirmation via email, one day prior to the tender opening day.

2.In case a bidder is an MSME, registered under NSIC and would like to avail exemptions, offer should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemptions under the Public Procurement Policy.

3.Make in India Compliances: Please refer OM No. P-45021/2/2017-PP (BE-II) dated 16.09.2020 and all amendments, issued by Govt. of India w.r.t to Make in India policy, and indicate percentage of local content along with detailed break up of local content without mentioning any price details and provide necessary certificate that the item offered meet the local content requirement for Class-I Local Supplier/Class-II Local Supplier and provide details of the location(s) at which the local value addition is made. Please note that if the declaration is found false, your offer will be rejected without assigning any reason thereof.

This is a Global Tender Enquiry and all the Foreign (Non Local)/Local Vendor can participate.

4.Land Border Sharing Compliance:

OM No. F.No.6/18/2019-PPD dated 23/07/2020 issued by Dept. of Expenditure, Public Procurement division. Undertaking on your letter head to be given as below:

'I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered.'

(Wherever applicable, evidence of valid registration by the Competent Authority shall be attached).

(b). Any amendment/modifications issued by Govt. of India w.r.t to above OM's shall also be complied.

(IN ABSENCE OF REQUIRED DECLARATION YOUR OFFER WILL NOT BE CONSIDERED FOR FURTHER EVALUATION).

5. GeM Availability Report and Past Transaction Summary (GeMARPTS) Report ID: GEM/GARPTS/16102024/W2AKMYGFQWHQ.

6. Evaluation Criteria : Evaluation will be done on total requirement.

7. Please furnish HSN Code along with applicable GST Percentage for the offered product.

8. SAC is eligible for Concessional GST @ 5% vide Notification No. 1/2017 (Rate) dt. 28.06.2017, S/N 243 as amended vide Notification No. 7/2018 (Rate) dt. 25.01.2018 inserting S/N 243 (A). Concessional GST shall be availed for this tender.

9. Please note that we have scheduled a pre-bid conference on 24/10/2024 (Thursday) at 2:00 PM | (UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi. Mode of the meeting: Online Webex.

Meeting Link:

<https://meet1379.webex.com/meet1379/j.php?MTID=m3e64a5e5ed2cacc576b1f49ca3944ca7>

Meeting number: 2643 575 9247

Password: pNyMvp3My23 (76968736 when dialing from a video system)

Agenda: Pre Bid Meeting for Audio Communication and Acoustic Test Equipment

Join by video system

Dial 26435759247@meet1379.webex.com

You can also dial 210.4.202.4 and enter your meeting number.

Join by phone

Use VoIP only

Contact Details (PURCHASER)

Purchase & Stores Officer (H)

Space Applications Centre - Ahmedabad

Ph No. : 079-2691 3078

Fax No.: 079-2691 5848 / 5802 / 5835

(Email: [pso\\_h@sac.isro.gov.in](mailto:pso_h@sac.isro.gov.in))

## A.1 Tender Schedule

Tender Publish Date : **17-10-2024 14:00**

Bid Clarification Due Date : **11-11-2024 14:00**

Bid Submission Start Date : **17-10-2024 14:00**

**Bid Submission Due Date : 18-11-2024 14:00**

**Bid Opening Date : 18-11-2024 14:30**

**Price Bid Opening Date : 19-11-2024 14:00**

## **A.2 Pre-bid Meeting Details**

**Date : 24-10-2024 14:00**

**Place : Online Webex.**

**Location : Online Webex**

**Centre : SPACE APPLICATIONS CENTRE (SAC), AHMEDABAD,  
GUJARAT**

**Details : Please note that we have scheduled a pre-bid  
conference on 24/10/2024, 1400 Hrs. (Thursday) Details  
mentioned in tender notice.**

## **B. Tender Attachments**

### **Technical Write-up/Drawings**

**Document : Annexure I**

### **Instructions To Vendors**

## **2. GENERAL TERMS & CONDITIONS FOR TENDER**

### **1. DEFINITIONS**

a)The term 'Purchaser' shall mean the President of India or his successors or assignees.

b)The term 'Contractor' shall mean the person, firm or company with whom or with which the "Purchase Order/Contract" for supply of stores/services is placed and shall be deemed to include the contractor's successors, representatives, heirs, executors and administrators unless excluded by the Purchase Order/Contract.

c)The term 'Purchase Order / Contract' shall mean the communication signed on behalf of the Purchaser by duly authorized Officer intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the tender or offer of the contractor for supply of stores, plant, machinery, equipment and services.

d)The terms 'Stores' shall mean the goods and/or services as specified in the Purchase Order/Contract.

e)Class-I Local Supplier means a supplier or service provider whose goods, services or works offered for procurement has local content equal to or more than 50%.

f)Class-II Local Supplier means a supplier or service provider whose goods, services or works offered for procurement has local content more than 20% but less than 50%.

g)Non-Local supplier means a supplier or service provider whose goods, services or works offered for procurement has local content less than or equal to 20%.

h)Local content means the amount of value added in India which shall be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value in percent.

i)'Bidder' (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency, branch or office controlled by such person, participating in a procurement process.

j)'Agent' means a person employed to do any act for another or to represent in dealings with third persons.

## 2. ELIGIBILITY CRITERIA

a)Any bidder from a country, which shares a land border with India, will be eligible to bid only if the bidder is registered with the Competent Authority in terms of Order (Public Procurement No.3) dt.23rd July 2020 and any amendments thereto issued by Public Procurement Division, Department of Expenditure, Ministry of Finance, Government of India.

b)'Bidder from a country which shares a land border with India' means,

i)An entity incorporated, established or registered in such a country, or

ii)A subsidiary of an entity incorporated, established or registered in such a country, or

iii)An entity substantially controlled through entities incorporated, established or registered in such a country, or

iv)An entity whose beneficial owner is situated in such a country, or

v)An Indian (or other) agent of such an entity, or

vi)A natural person who is a citizen of such a country, or

vii)A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.

c)'Beneficial owner' for the purpose of 'b' above will be as under:

i)In case of a Company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

Explanation:

'Controlling ownership interest' means ownership of or entitlement to more than twenty five per cent of shares or capital or profits of the company.

'Control' shall include the right to appoint majority of the directors or to control the management or policy decisions, including by virtue of their shareholding or management rights or shareholders agreements or voting agreements.

ii) In case of partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership.

iii) In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s) who, whether acting alone or together or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals.

iv) Where no natural person is identified under (i) or (ii) or (iii) above, the beneficial owner is the relevant natural person who hold the position of senior managing official.

v) In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

d) Class-I Local Supplier/Class-II Local Supplier/ Non-Local Supplier are eligible to bid in terms of Public Procurement (Preference to Make in India), Order 2017 - Revision dated 04.06.2020 and revised 'Public Procurement (Preference to Make in India), Order 2017 dated 16.09.2020 issued by Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, Government of India.

### 3. EVALUATION CRITERIA

a) Bids received should be evaluated against the specifications, terms and conditions incorporated in the bidding document.

b) During evaluation and comparison of bids, the Purchaser may, at his/her discretion, ask the bidder for clarifications on the bid. Purchaser may request for any clarification and/or additional documents from the bidders. No change in the prices or substance of the bid shall be sought, offered or permitted. No post bid clarification at the initiative of the bidder shall be entertained. The shortfall information and/or documents shall be sought, by the Purchaser, only in case of historical documents which pre-existed at the time of tender opening and which have not undergone any change since then.

c) Bidders shall not be permitted to alter or modify their bids after expiry of the deadline for receipt of bids.

d) All responsive bids shall be evaluated with a view to select the lowest [L1] bidder who meets the qualification criteria, including terms and conditions of the tender. Techno-commercial aspects shall be compared on a common platform on the basis of total evaluated cost of each offer which will be arrived

at by adding the basic price as well as other charges, and all statutory levies/taxes/duties. Maintenance charges shall be taken into account if it forms part of the tender for the purpose of cost comparison. The financial implication shall be considered as the all inclusive cost to the Purchaser. Evaluation of the bids shall be done on the basis of landing cost to the Purchaser.

e)Purchaser discourages advance payment terms. In case of advance payment, for the purpose of evaluation, interest shall be loaded on the amount so paid as advance for the delivery period quoted as per MCLR of State Bank of India prevailing on the date of tender opening. Further, for any delay in executing the contract, Purchaser shall recover interest on the amount paid as advance for the delayed period at the MCLR of State Bank of India prevailing on the date of the payment besides other remedies available for breach of the contract.

f)If the quoted prices are in different currencies, then for comparison purpose the offers in foreign currencies will be converted into Indian Rupees based on the exchange rate prevailing on the date of tender opening.

g)If a bidder quotes 'NIL' charges/consideration, the bid shall be treated as unresponsive and will not be considered.

h)Evaluation of the bids shall not be done on the basis of conditional discounts.

i)Purchaser reserves the right to give preference for procurement of goods in terms of product reservation and preferential / mandatory purchase policy as notified by Government of India from time to time. Bidders claiming any preference shall submit relevant and valid registration certificate along with the tender in terms of the relevant Orders/Notifications issued by appropriate Authority/Government.

j)Purchaser reserves the option to increase / decrease the quantity to the extent of 25% of the tendered quantity.

k)Purchaser reserves the right to accept or reject any quotation in full or part thereof by recording the reasons. The Purchaser shall be under no obligation to accept the lowest or any tender and reserves the right to accept whole or any part of the tender or part of the quantity offered and the bidders shall supply the same at the rates quoted.

l)Purchaser reserves the right to enter into parallel contract unless the instructions are otherwise in the RFP.

m)Purchaser also reserves the right to reject any offer in the event of non-compliance to tender terms and conditions or where the prices are not viable vis-a-vis the scope of the contract.

n)A bidder can question the bidding conditions, bidding process and / or rejection of its bid.

o)Any clarification on the tender shall be sought from the Purchaser well in advance of the tender closing date but in any case, it should not be within 7 days of bid closing date.

p)Public Tenders shall be opened in the presence of the authorized representative of the bidders. In case the tenders cannot be opened due to holiday or technical reasons the tender will be opened on the next working day.

#### 4. OFFER VALIDITY

a)The offer should be valid for a minimum number of days, as mentioned below, from the date of opening of the bids.

Single Part Tender: 90 days

Two Part Tender: Part-1: 120 days & Part-2: 90 days from price bid opening.

During the validity period the bidder shall not revoke or cancel or vary the bid except and to the extent required by Purchaser. Purchaser will make all efforts to finalize the contract within the original bid validity. However, in case the contract is not finalized during the original bid validity then the bidder shall be requested to extend the bid validity.

#### 5. TERMS FOR TECHNICAL-BID & PRICE-BID

a)The price quoted shall be firm and fixed. At the option of the Purchaser, in case of long term contracts where the input cost and other factors are subject to changes, price variation may be accepted as per price variation formula, if specifically mentioned in the RFP/Tender.

b)In a two part tender [Part-1: Techno-commercial bid and Part-2: Financial bid], initially only the techno-commercial bids would be opened and evaluated. The financial bids will be opened only for the bids which successfully meet the qualification criteria and techno-commercial criteria. The bid will be rejected if price of any nature is included in Part-1 [Techno-commercial bid].

c)Bidders shall note that the entries for rate, taxes & duties, freight and any other levy shall be entered only in the relevant fields as provided in the price bid form / vendor specified terms.

d)If specifically mentioned in the tender document/RFP, only the authorized dealers/agents/representatives of original manufacturers shall submit the quotation with documentary evidence.

e)All available technical literature, catalogues and other data in support of the specifications and details of the items shall be furnished along with the offer.

f) Approximate net and gross weight of the items offered shall be indicated in your offer. If dimensional details are available, the same shall also be indicated in the offer.

g) Stores offered shall strictly conform to the tender specifications. Deviations, if any, shall be clearly indicated by the bidder in the quotation. The bidder shall also indicate the Make/Model number of the stores offered. Test Certificates, wherever necessary, shall be forwarded along with supplies. Wherever options have been called for in our specifications, the bidder shall address all such options.

h) Any drawings, specifications, end use, etc., which are part of the tender document shall not be disclosed by the bidder to any third party.

i) Tender number shall be mentioned in all correspondence.

## 6. PAYMENT TERMS

a) Normally 100% of the Contract/PO value will be made within 30 days of receipt, installation (wherever applicable) & acceptance of the material at Purchaser's site.

b) Other terms of payment like Sight Draft/Letter of Credit may be considered by the Purchaser on such terms and conditions as may be agreed upon in case of foreign suppliers.

c) The Sight Draft / Letter of Credit will be operative on presentation of the under mentioned documents:

1. Original Bill of Lading / Airway Bill
2. Commercially certified invoices in triplicate, describing the stores delivered, quantity, unit rate and their total value. The invoice should indicate discounts, and Agency Commission if any separately.
3. Packing List showing individual dimensions and weight of packages.
4. Country of Origin Certificate in duplicate.
5. Test Certificate.
6. Declaration by the Seller that the contents in each case are not less than those entered in the invoices and the quality of the Stores are guaranteed as per the specifications asked for by the Purchaser.
7. Warrantee and guarantee Certificate/s.

d) For any Services, payment will be made after satisfactory completion of the services and certification to that effect from the Purchaser.

e) Our Bankers are State Bank of India (IFSC: SBIN0003967), Jodhpur Tekra Branch, Ahmedabad, Gujarat -380 015, India.

f) Any other payment terms offered by the bidders may be considered by the Purchaser provided that all such payments shall be against receipt of the items / completion of service / identified verifiable milestones. Advance payment, if any, shall not exceed 30% of the contract value to private firms and 40% of contract value to a State or Central Government agencies or a Public Sector Undertaking. In case of maintenance contracts, the advance payment shall not exceed the amount payable for 6 months under the contract. Advance payments shall be against Bank Guarantee of equivalent value from any Commercial Bank in India / International Bank of repute, valid till 60 days beyond the receipt and acceptance of the product / completion of service.

g) Purchaser shall bear the Bank charges payable to their Bank, the Contractor shall bear the Bank charges payable to their Bank.

h) GSTN/UIN No.: 2417IND00002ON2

i) Import Export Code: 0100000011

## 7. TAXES AND DUTIES

a) Taxes and Duties shall be distinctly shown in the offer.

b) Bidders are advised to check applicable GST on their own before quoting. Please quote with HSN code of the quoted product and the corresponding GST rate applicable.

c) Purchaser is eligible for concessional rate of Customs Duty and IGST on imports as per Notification No. 50/2017-Customs dt.30.06.2017 and Notification No.5/2018-Customs dt.25.01.2018 issued by Department of Revenue, Ministry of Finance, Government of India. For the items covered under the said notification, the Purchaser will issue the necessary certificate for the items covered under the said notification provided the same is requested by the bidder in their quotation. Accordingly, prices shall be quoted exclusive of Customs Duty and IGST component.

## 8. INDIAN AGENTS

a) Offers made by Indian Agents on behalf of their Principals should be supported by the Proforma Invoice of their Principals indicating the commission payable to the Indian Agent and nature of after sales service to be rendered by the Indian Agent.

b) Indian Agents while quoting on behalf of their principals shall attach valid authorization certificate from their Principal/OEM along with the bid.

c) If more than one agent/distributors are involved, a copy of certification from OEM mentioning the specific relationship among the vendors involved shall be submitted along with the bid.

d) In a tender either the Indian Agent on behalf of the Principal/OEM or Principal/ OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.

e) If an Indian agent submits bid on behalf of the Principal/OEM, the same Indian Agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.

f) Agency Commission: The percentage / amount of agency commission included in the quoted price and payable to the Indian Agent of foreign suppliers shall be paid directly to the Indian Agent in equivalent Indian Rupees worked out on the basis of Telegraphic Transfer buying rate of exchange prevailing on the date of placement of Purchase Order and within 30 days from the date of receipt and acceptance of stores. In no case the agency commission shall be paid in foreign exchange.

## 9. DELIVERY TERMS AND DELIVERY PERIOD

a) The delivery terms are to be quoted in terms of latest INCOTERMS 2020. In case of imported stores the normal delivery terms shall be Ex-Works/FOB/FCA (name of place). Other terms can also be accepted based on need and suitability. In case of indigenous stores, the quotation should be on FOR-Destination / Door delivery basis.

b) Delivery period shall be specified. In case the tender calls for installation then the bidders shall mention the schedule for supply and installation separately.

c) The date of delivery of the stores stipulated in the Purchase Order/Contract shall be deemed to be the essence of the Contract and delivery must be completed on or before the specified dates.

d) Part shipment is not allowed unless specifically agreed by Purchaser.

e) Where erection or assembly or commissioning is a part of the Contract, it should be done immediately on notification. The Contractor shall be responsible for any loss/ damage sustained due to the delay in fulfilling this responsibility.

f) For items having shelf life, those with maximum shelf life should be supplied if order is placed.

g) If the contractor fails to deliver the ordered items and/or services within the specified date / period, the Purchase Order / Contract does not per se hold good after expiry of such specified delivery date/period. The Purchaser may refuse to take delivery of the goods / services after the specified delivery date/period.

## 10. MODE OF DESPATCH:

Generally, stores should be despatched through Indian Flagged Vessel / Air India or through any other

Agency nominated by the Purchaser.

#### 11. PORT OF ENTRY:

For Air shipments: AHMEDABAD

For Sea Shipments: NHAVA SHEVA/Mumbai Seaport

#### 12. ULTIMATE CONSIGNEE:

Head, Purchase & Stores,

Central Stores,

Space Applications Centre (SAC),

Ambawadi Vistar PO

Ahmedabad 380015, Gujrat

#### 13. SHIPPING MARKS:

The mark on the shipping documents such as invoice, airway bill / bill of lading and on the packages should be as follow:

PURCHASE ORDER /CONTRACT NO. ....

DATED .....

GOVERNMENT OF INDIA

DEPARTMENT OF SPACE, SPACE APPLICATIONS CENTRE

Destination: .....

Port of Entry: .....

#### 14. DELAY IN COMPLETION / LIQUIDATED DAMAGES

If the Contractor fails to execute the Purchase Order within the time specified in the contract/purchase order or any extension thereof, the Purchaser shall recover from the Contractor as liquidated damages a sum of 0.5% of the PO/Contract value of the undelivered stores for each calendar week of delay or part thereof. The total liquidated damages shall not exceed 10% of the PO/Contract value. Stores will be deemed to have been delivered only when all their components, parts are also delivered. If certain components are not delivered in time, the stores will be considered as delayed until such time as the missing parts are delivered.

#### 15. FORCE MAJEURE

A Force Majeure (FM) means extraordinary events or circumstance beyond human control such as an event described as an act of God (like a natural calamity) or events such as a war, strike, riots, crimes

(but not including negligence or wrong-doing, predictable/seasonal rain and any other events specifically excluded in the clause). An FM clause in the contract frees both parties from contractual liability or obligation when prevented by such events from fulfilling their obligations under the contract. An FM clause does not excuse a party's non-performance entirely, but only suspends it for the duration of the FM. The firm has to give notice of FM as soon as it occurs and it cannot be claimed ex-post facto. There may be a FM situation affecting the purchase organisation only. In such a situation, the purchase organisation is to communicate with the supplier along similar lines as above for further necessary action. If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of FM for a period exceeding 90 (Ninety) days, either party may at its option terminate the contract without any financial repercussion on either side.

Notwithstanding the punitive provisions contained in the contract for delay or breach of contract, the supplier would not be liable for imposition of any such sanction so long as the delay and/ or failure of the supplier in fulfilling its obligations under the contract is the result of an event covered in the FM clause.

## 16. PERFORMANCE SECURITY

a) On award of the Purchase Order/Contract the successful bidder shall submit Performance Security along with the acknowledgement of Purchase Order/Contract, as per the format provided by the Purchaser, for 10% of the Purchase Order/Contract value through Bank Guarantee or Fixed Deposit Receipt for satisfactory execution of the Purchase Order/Contract. The Performance Security shall be valid for 60 days beyond the completion of the contractual obligations. Central PSUs / PSEs / Autonomous Bodies shall be exempted from submitting Performance Security. However, they shall be required to submit an Indemnity Bond in lieu of Performance Security.

b) Non-submission of Performance Security will entail cancellation of Purchase Order/Contract and any other action deemed fit by the Purchaser. The Performance Security will be returned to the Contractor, without any interest, after completion of all Contractual/Purchase Order obligations, including warranty period.

## 17. ISSUE OF MATERIALS

If provided for in the PO/Contract, Purchaser may issue raw materials / semi-finished products / equipment / any other product to the contractor for the purpose of fabrication / repairs / calibration / testing against Bank Guarantee equivalent to the value of the item being issued and valid till receipt of the item by Purchaser.

## 18. GUARANTEE / WARRANTY

a) The guarantee / warranty period as mentioned in the tender shall be indicated along with the quote.

Guarantee/Warranty shall commence from the date of installation and acceptance of the complete equipment supplied under the contract.

b)The Contractor shall guarantee / warranty that the stores supplied shall comply fully with the specifications laid down, for material, workmanship and performance.

c)If any defects are discovered therein or any defects therein are found to have developed under proper use, arising from faulty design, material or workmanship, the Contractor shall remedy such defects at their own cost provided the Contractor is called upon to do so by the Purchaser who shall state in writing in what respect the stores or any part thereof are faulty.

d)If, in the opinion of the Purchaser, it becomes necessary to replace or rectify any defective stores, such replacement or rectification shall be made by the Contractor free of all costs to the Purchaser.

e)Should the Contractor fail to rectify the defects, the Purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.

f)The decision of the Purchaser, notwithstanding any prior approval or acceptance or inspection thereof on behalf of the Purchaser, as to whether or not the stores supplied by the Contractor are defective or any defect has developed within the guarantee / warranty period or as to whether the nature of the defects requires renewal or replacement, shall be final, conclusive and binding on the Contractor.

g)All the replacement stores shall have guarantee / warranty from the date of receipt & acceptance of the stores at Purchaser's site

## 19. PACKING, FORWARDING & INSURANCE

a)The Contractor shall pack and crate all stores for road / rail / sea / air shipment suitable for tropical humid climate in accordance with standard practices and in such a manner so as to protect it from damage and deterioration in transit. The contractor shall be held responsible for all damages due to improper packing.

b)The Contractor shall ensure that each box / unit of shipment is legibly and properly marked for correct identification. A copy of the invoice and packing list should invariably be kept inside each of the packages. The failure to comply with this requirement shall make the Contractor liable for additional expenses involved.

c)The Contractor shall notify the Purchaser the shipment details by fax / email.

d) The Contractor shall give complete shipment information concerning the net & gross weight, size, content of each package, etc. to the Purchaser.

e) Normally the Purchaser does not insure the goods. However, the necessity or otherwise of insurance will be as indicated in the Purchase Order/Contract.

f) In tune with the requirement of international plant protection convention of the FAO, UN the following has become mandatory with immediate effect.

1. All packing materials of any kind of plant origin used for packing shall require treatment including heat-kiln treatment at 56 degree centigrade for a minimum of 30 hours of methylbromide fumigation at 48g/cum for 32 hours of chemical impregnation as per international standards.
2. If the consignments are sent without the aforesaid certificate, all demurrages and other charges for treatment etc. will be to the account of the suppliers.
3. This aspect also should be taken care of while submitting the offers.
4. If the packaging material being used for your product does not come under the category "material of plant origin" (i.e. Leaves, grass, wood etc.) Please certify the same in your quote and ignore the above instructions. However, the same should be ascertained at the time of actual shipment if the order is awarded to you.

## 20. DESPATCH

a)The Contractor is responsible for obtaining a clear receipt from the freight forwarder / airlines / transport authorities specifying the despatch of goods. The consignment should be despatched with Airway Bill / Bill of Lading / Railway / Lorry Receipt. Purchaser will take no responsibility for short deliveries or wrong supply of goods. Purchaser shall pay for only such stores as are actually received by them in accordance with the Contract.

b)Wherever required, test certificates, warranty/guarantee certificate should be sent along with the despatch documents.

c)The Invoice shall contain Purchase Order / Contract No., Invoice No., Invoice Date, Country of Origin.

d)The description, part nos., extended warranty charges, discount, optional accessories, as the case may be, should be clearly mentioned in the invoice and packing list and should be in line with the purchase order. In addition to the ordered items, if any item(s) is supplied the same should also be stated in the invoice & packing list with appropriate remarks and its value shall be declared mentioning "for customs purpose only".

e)The Invoice/Packing list should also provide Item wise net weight (in K.G.) as well as gross weight (in K.G.) of each package.

f)A copy of the Invoice/Packing List to be forwarded to the Purchaser, 5 days in advance before

shipment, particularly when the shipment is through Supplier's freight forwarder/courier.

g) Any charges/penalty/demurrage due to non-compliance to the above instructions shall be recovered from the payment due to the Supplier.

## 21. DEMURRAGE

The Contractor shall bear demurrage/penalty charges, if any, incurred by the Purchaser due to delayed presentation of dispatch documents to the Bank / Purchaser or on account of incomplete documents like invoice, packing list, etc.

## 22. ACCEPTANCE OF STORES

a) The Purchaser's representatives shall also be entitled at all reasonable times during manufacture to inspect, examine and test on the Contractor's premises the material and workmanship of all stores to be supplied under the Contract and if part of the said stores is being manufactured on other premises, the Contractor shall obtain for the Purchaser's representative permission to inspect, examine and test as if the equipment were being manufactured on the Contractor's premises. Such inspection, examination and testing shall not release the Contractor from the obligations under this Contract.

b) For tests on the premises of the Contractor or of any of his sub- Contractors, the Contractor shall provide free of cost assistance, labour, material, electricity, fuel and instruments as may be required or as may be reasonably needed by the Purchaser's representative to carry out the tests efficiently.

c) When the stores have passed the specified test, the Purchaser's representative shall furnish a certificate to the effect in writing to the Contractor. The Contractor shall provide copies of the test/s certificates to the Purchaser as may be required.

## 23. TRAINING:

The Contractor shall, if required by the Purchaser, provide facilities for the practical training of Purchaser's engineering / technical personnel and for their active association on the manufacturing processes throughout the manufacturing period of the Contract / stores. Number of such personnel to be mutually agreed upon.

## 24. CONTRACTOR'S DEFAULT LIABILITY

a) The Purchaser may upon written notice of default to the Contractor terminate the Contract in whole or in part in circumstances detailed hereunder:

1. If in the judgment of the Purchaser the Contractor fails to make delivery of stores within the time

specified in the Purchase Order or within the period for which extension has been granted by the Purchaser to the Contractor.

2. If in the judgment of the Purchaser the Contractor fails to comply with any of the other provisions of the Purchase Order.

b) In the event the Purchaser terminates the Contract in whole or in part as provided in clause 24 (a), the Purchaser reserves the right to purchase upon such terms and in such a manner as Purchaser may deem appropriate, stores similar to that terminated and the Contractor shall be liable to the Purchaser for any additional costs for such similar stores and / or for liquidated damages for delay as defined in clause 14 until such reasonable time as may be required for the final supply of stores.

c) If the contract is terminated as provided in clause 24 (a), the Purchaser in addition to any other rights provided in the Contract, may require the Contractor to transfer title and deliver to the Purchaser under any of the following clauses in the manner as directed by the Purchaser:

1. Any completed stores

2. Such partially completed stores, drawing, information and contact right (hereinafter called manufacturing materials) as the Contractor has specifically produced or acquired for the performance of the Contract as terminated. The Purchaser shall pay to the Contractor the Contract price for completed stores and for manufacturing material delivered and accepted by the Purchaser.

d) In the event the Purchaser does not terminate the Contract as provided in clause 24 (a), the Contractor shall continue the performance of the Contract in which case the Contractor shall be liable to the Purchaser for liquidated damages for delay as set out in clause 14 until the stores are accepted.

## 25. REPLACEMENT

If the stores of any portion thereof is damaged or lost during transit the Purchaser shall give notice to the Contractor setting forth particulars of such stores damaged or lost during transit. The replacement of such stores shall be effected by the Contractor within a reasonable time to avoid unnecessary delay in the intended usage of the stores.

## 26. REJECTION

Rejected stores will remain at destination at the Contractor's risk and responsibility. If instructions for their disposal are not received from the Contractor within a period specified by the Purchaser, the Purchaser or their representative has, at their discretion, the right to scrap or sell or consign the rejected stores to Contractor's address at the Contractor's entire risk and expense, freight being payable by the Contractor at actuals.

## 27. ARBITRATION

If any dispute or difference or claims of any kind arises in connection with Contract, such dispute or difference or claim shall be referred by either party to the Arbitration. The Indian Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment thereof, rules made there under and for the time being in force shall be applicable to the Arbitration. The arbitral tribunal shall consist of three arbitrators. Each party to the dispute shall appoint one arbitrator and the two arbitrators so appointed by the parties shall appoint the third arbitrator who shall act as the 'Presiding Arbitrator'.

Any party shall, after appointing an arbitrator within thirty days of arising of any dispute, request the other party in writing to appoint the second arbitrator. If such other party fails to appoint an arbitrator within thirty days of receipt of the written request to do so, such arbitrator shall at the request of the first party, be appointed in accordance with Arbitration and Conciliation Act, 1996. If the two arbitrators appointed by or on behalf the parties fail to agree on the appointment of the third arbitrator within thirty days of the appointment of second arbitrator and if the parties do not otherwise agree, at the request of either party, the third arbitrator shall be appointed in accordance with Arbitration and Conciliation Act, 1996. If any of the arbitrators fails or is unable to act, his successor shall be appointed by the party or person who originally appointed such arbitrator in the manner set out in this clause as if he was the first appointment.

The decision of the arbitral tribunal shall be pronounced within four months unless otherwise extended by the parties, and in case of difference among the arbitrators, the decision of the majority shall be final and binding on the parties. The right to arbitrate disputes under this Contract shall also survive even after expiry or the termination of this Contract. The venue of arbitration proceedings pursuant to this clause shall be India at Ahmedabad and shall be conducted in the English language. Pending the submission of and /or decision on a dispute, difference or claim or until the arbitral award is published; the parties shall continue to perform all their obligations under this Contract without prejudice to a final adjustment in accordance with such award. Regarding fee and any other expenses incurred in connection with the arbitral proceedings and the arbitral award, the arbitral Tribunal shall have the discretion to determine (a) whether costs are payable by one party to another; (b) the amount of such costs; and (c) when such costs are to be paid.

## 28. APPLICABLE LAW

The Purchase Order / Contract shall be governed by Indian Law and jurisdiction shall lie in the Courts of Ahmedabad, Gujarat, India.

## 29. COUNTER TERMS & CONDITIONS

Counter terms and conditions offered by the bidders shall not be deemed to have been accepted by the Purchaser unless specific written acceptance thereof is obtained from the Purchaser.

### 30. SECURITY INTEREST

On each item to be delivered under the Contract, including an item of work in progress in respect of which payments have been made in accordance with the terms of the Contract, Purchaser shall have a security interest in such items which shall be deemed to be released only at the time when the applicable deliverable item is finally accepted and delivered to the Purchaser in accordance with the terms of the Contract. Such security interest of the Purchaser shall constitute a prior charge as against any other charge or interest created in respect of such items by any entity.

### 31. RECOVERY OF SUM DUE

Whenever any claim for the payment of, whether liquidated or not, money arising out of or under the Contract against the Contractor, the Purchaser shall be entitled to recover such sum by appropriating in part or whole, the security deposited by the Contractor, if a security is taken against the Contract. In the event of the security being insufficient or if no security has been taken from the Contractor, then the balance or the total sum recoverable as the case may be, shall be deducted from any sum then due or which at any time thereafter may become due to the Contractor under this or any other Contract with the Purchaser. Should this sum be not sufficient to cover the full amount recoverable, the Contractor shall pay to the Purchaser on demand the remaining balance due. Similarly, if the Purchaser has or makes any claim, whether liquidated or not, against the Contractor under any other Contract with the Purchaser, the payment of all moneys payable under the Contract to the Contractor including the security deposit shall be withheld till such claims of the Purchaser are finally adjudicated upon and paid by the Contractor.

### 32. LANGUAGE AND MEASURES

All documents pertaining to the Purchase Order including specifications, schedule, notice, correspondence, operating and maintenance instructions, drawings or other writings shall be written in English language. The metric system of measurement shall be used in the contract.

### 33. INDEMNITY

The Contractor shall warrant and be deemed to have warranted that all stores supplied against this Contract are free and clean of infringement of any Patent, Copyright or Trademark, and shall at all times indemnify the Purchaser against all claims which may be made in respect of the stores for infringement of any right protected by Patent Registration of Design or Trade mark and shall take all risk of accidents or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfillment of the contract.

### 34. RISK PURCHASE

Where timely delivery of goods/services is of prime importance and where the vendor fails to fulfil their contractual obligations, the Purchaser shall have an option to complete the contract/procurement at the risk and expense of the contractor. Wherever the risk purchase clause is invoked by the Purchaser, the contractor will be liable to pay the additional amount, if any, incurred by the Purchaser as against the value of the Purchase Order/Contract. Prior to resorting to risk purchase the Purchaser shall consider impact of the default by the contractor, opportunities given to the contractor as available in the PO/Contract, proper notice to the contractor to invoke risk purchase clause and method of recovering the additional amount spent by the Purchaser.

### 35. TERMINATION

Under the normal circumstances, Termination/Short Closing of the Contract is not foreseen. However, SAC reserves the right to terminate the Contract in whole or in part by giving 30 days prior notice under the following circumstances:

1. For repeated non-performance in the execution of Contract.
2. If the contractor / Service Provider is found to have made any false or fraudulent declaration of statement to obtain the Contract or found to be indulging in unethical or unfair trade practices.
3. When both the Parties mutually agree for termination.
4. If the Contractor fails to perform any other obligations under the Contract.
5. If the Contractor becomes bankrupt or otherwise insolvent.
6. Owing to deficiency of service, breach of Contract.
7. For inefficiency, indiscipline, irregularity, insincerity, indifference in work, disobedience, doubtful credentials/ integrity, etc., at any point of time during the Contract period.
8. Any special circumstances, which must be recorded to justify the Cancellation of the Contract.

### 36. IMPORTANT NOTE

If any of the terms & conditions mentioned in this document is contrary to the RFP / Technical documents, then the terms mentioned in RFP / Technical documents shall prevail.

IT WILL BE DEEMED THAT BIDDERS HAVE NOTED AND ACCEPTED THE TERMS & CONDITIONS OF THE TENDER.

## C. Bid Templates

### C.1 Technical Bid - Audio Communication and Acoustic Test Equipment

#### 1. ACOUSTIC TESTING - Head and Torso with Mouth Simulator for Headset Test

##### Item specifications for ACOUSTIC TESTING

| SI No | Specification  | Value   | Compliance         | Offered Specification | Remark |
|-------|--|---|--------------------|-----------------------|--------|
| 1     | Connection   | CCP for Pre-polarized Ear Simulators and Microphones  | Yes / No / Explain |                       |        |
| 2     | Channel  | 2 Channel with Right Ear simulator, Left Ear Simulator  | Yes / No / Explain |                       |        |
| 3     | Acoustic Field around Human Head and Torso as per ANSI standard        | Should be complied to ANSI S3.36, S3.25   | Yes / No / Explain |                       |        |
| 4     | Acoustic Field around Human Head and Torso as per IEC standard         | Should be complied to IEC 60318-4 / 60318-7   | Yes / No / Explain |                       |        |
| 5     | Acoustic Field around Human Head and Torso as per ITU-T Recommendation | Should be complied to P.57 Type 3.3 based on ITU-T Rec. P.58  | Yes / No / Explain |                       |        |
| 6     | Mouth Simulator Type   | Mouth Simulator with built-in power amplifier   | Yes / No / Explain |                       |        |
| 7     | Accessories  | Should provide Tripod, Left and Right Ear shore OO, External ear canal with extension kit, Allen Key, Screw Driver, Calibration CD, Calibration Jig and any other accessories which is required to operate and calibrate the simulator. | Yes / No / Explain |                       |        |

#### 2. ACOUSTIC TESTING - Calibration Adapter for Pinna

##### Item specifications for ACOUSTIC TESTING

| SI No | Specification       | Value  | Compliance         | Offered Specification | Remark |
|-------|---------------------|--|--------------------|-----------------------|--------|
| 1     | Calibration adapter | Compatible Calibration Adapter for Head and Torso Simulator Pinna (Without needing to dismantle the complete ear simulator). | Yes / No / Explain |                       |        |

### 3. ACOUSTIC TESTING - Pistonphone

#### Item specifications for ACOUSTIC TESTING

| SI No | Specification                                     | Value   | Compliance         | Offered Specification | Remark |
|-------|---|---|--------------------|-----------------------|--------|
| 1     | Calibration Frequency                             | Nominally 250 Hz(+/- 1%) as defined by ISO 266  | Yes / No / Explain |                       |        |
| 2     | Calibration Pressure                              | 110- 125 dB SPL re 20 uPa @ 250 Hz  | Yes / No / Explain |                       |        |
| 3     | Calibration Accuracy of Pistonphone               | Better than $\pm 0.09$ dB (Item should be supplied with an individual calibration certificate stating the exact value and test condition) | Yes / No / Explain |                       |        |
| 4     | Power Supply                                      | Should be handheld and battery operated along with spare battery that should last for 365 days  | Yes / No / Explain |                       |        |
| 5     | IEC standard                                      | Should be complied to IEC 942 (1998) Class 1 or IEC 60942(2018) LS Intelligent Class 0  | Yes / No / Explain |                       |        |
| 6     | Microphone Compatibility                          | Should be compatible with 1/2", 1/4", 1/8" microphones  | Yes / No / Explain |                       |        |
| 7     | Head and Torso with Mouth Simulator Compatibility | Should be compatible with the Head and Torso with Mouth Simulator as per Item No. 1   | Yes / No / Explain |                       |        |

### 4. ACOUSTIC TESTING - 1/4" CCP Pressure Standard Microphone Set with Preamplifier

#### Item specifications for ACOUSTIC TESTING

| SI No | Specification                                     | Value   | Compliance         | Offered Specification | Remark |
|-------|---|---|--------------------|-----------------------|--------|
| 1     | Connection  | CCP   | Yes / No / Explain |                       |        |
| 2     | Frequency Range                                   | It should meet min. 300Hz to 5kHz   | Yes / No / Explain |                       |        |
| 3     | Dynamic Range                                     | Min. 50 dB(A) to 160 dB   | Yes / No / Explain |                       |        |
| 4     | Sensitivity                                       | <= 1.6 mV/Pa  | Yes / No / Explain |                       |        |
| 5     | Microphone Type                                   | Pressure Field  | Yes / No / Explain |                       |        |
| 6     | Microphone venting                                | Front vented or side vented   | Yes / No / Explain |                       |        |
| 7     | Head and Torso with Mouth Simulator Compatibility | Should be compatible with Head and Torso with Mouth Simulator as per Item No. 1 Accessories such as mouth equalization / calibration kit or any other required item should be provided. | Yes / No / Explain |                       |        |

## 5. ACOUSTIC TESTING - Microdot to BNC Cable

### Item specifications for ACOUSTIC TESTING

| SI No | Specification | Value   | Compliance         | Offered Specification | Remark |
|-------|---------------|---|--------------------|-----------------------|--------|
| 1     | Cable Type    | Min. 3 m coaxial cable with microdot to BNC connectors. | Yes / No / Explain |                       |        |
| 2     | Compatibility | Should be compatible with Item No. 4                    | Yes / No / Explain |                       |        |

## 6. ACOUSTIC TESTING - Microphone Tripod

### Item specifications for ACOUSTIC TESTING

| SI No | Specification            | Value          | Compliance         | Offered Specification | Remark |
|-------|--------------------------|----------------|--------------------|-----------------------|--------|
| 1     | Standard Mounting Thread | 1/4" whitworth | Yes / No / Explain |                       |        |

|   |                 |   |                    |  |  |
|---|-----------------|---|--------------------|--|--|
| 2 | Feet            | Rubber Feet with adjustable spikes  | Yes / No / Explain |  |  |
| 3 | Legs            | Adjustable tripod legs with locks and Locking of tripod- legs cross brace | Yes / No / Explain |  |  |
| 4 | Min- Max height | 123 -161 cm   | Yes / No / Explain |  |  |
| 5 | compatibility   | Should be compatible with Item No. 4                                      | Yes / No / Explain |  |  |

## 7. ACOUSTIC TESTING - 1/4" 5-Click Microphone Holder

### Item specifications for ACOUSTIC TESTING

| SI No | Specification   | Value                                    | Compliance         | Offered Specification | Remark |
|-------|-----------------|--|--------------------|-----------------------|--------|
| 1     | Material        | Stainless Steel                          | Yes / No / Explain |                       |        |
| 2     | Dimension       | For attaching 1/4" diameter preamplifier | Yes / No / Explain |                       |        |
| 3     | Special Feature | Min. Adjustable in 45 degree steps       | Yes / No / Explain |                       |        |
| 4     | compatibility   | Should be compatible with Item No. 4     | Yes / No / Explain |                       |        |

## 8. AUDIO ANALYZER - 2-channel audio analyzer

### Item specifications for AUDIO ANALYZER

| SI No | Specification          | Value                          | Compliance         | Offered Specification | Remark |
|-------|------------------------|--------------------------------|--------------------|-----------------------|--------|
| 1     | Input Channels         | 2 Analog Input Channel         | Yes / No / Explain |                       |        |
| 2     | Digital I/O            | AES/SPDIF                      | Yes / No / Explain |                       |        |
| 3     | THD+N (Typical)        | <-110dB or better              | Yes / No / Explain |                       |        |
| 4     | Sine Frequency Range   | Min. 50Hz to 5 KHz or better   | Yes / No / Explain |                       |        |
| 5     | Square Frequency Range | Min. 50Hz to 1.5 KHz or better | Yes / No / Explain |                       |        |

|    |   |  |                    |  |  |
|----|---|--|--------------------|--|--|
| 6  | Frequency Accuracy                                | Better than 3 ppm  | Yes / No / Explain |  |  |
| 7  | IMD Test Signals                                  | SMPTE, MOD, DFD, DIM   | Yes / No / Explain |  |  |
| 8  | Amplitude Accuracy                                | Better than +/- 0.03 dB  | Yes / No / Explain |  |  |
| 9  | Flatness (20Hz- 20 KHz)                           | Better than +/- 0.008 dB   | Yes / No / Explain |  |  |
| 10 | Digital Output Sampling Rate                      | Should be able to sample DUT (CCA) frequency range i.e. 50 Hz – 5000 Hz                                | Yes / No / Explain |  |  |
| 11 | Maximum Rated Input Voltage                       | As per Indian Voltage Standard (~230 Vpk)  | Yes / No / Explain |  |  |
| 12 | Residual Input Noise (20Hz - 20KHz BW)            | It should be less than 8.0 nV / $\sqrt{\text{Hz}}$ at 1 kHz.   | Yes / No / Explain |  |  |
| 13 | Head and Torso with Mouth Simulator Compatibility | Should be measurement/connection compatible with Head and Torso with Mouth Simulator as per Item No. 1 | Yes / No / Explain |  |  |

## 9. AUDIO ANALYZER - Transducer Test Interface

### Item specifications for AUDIO ANALYZER

| SI No | Specification          | Value  | Compliance         | Offered Specification | Remark |
|-------|------------------------|--|--------------------|-----------------------|--------|
| 1     | Frequency Range        | It should meet min. 50Hz to 20kHz                                  | Yes / No / Explain |                       |        |
| 2     | Frequency Response     | Better than or equal to +/- 0.10 dB (200 Hz to 20 KHz, DC coupled) | Yes / No / Explain |                       |        |
| 3     | Residual Noise         | In a given BW, It should be less than 10uVrms                      | Yes / No / Explain |                       |        |
| 4     | Signal to Noise Ratio  | Better than ~ 130 dB   | Yes / No / Explain |                       |        |
| 5     | Residual THD+N         | Should be less than -100 dB  | Yes / No / Explain |                       |        |
| 6     | Mic Inputs             | Balanced and Unbalanced both should be supported.                  | Yes / No / Explain |                       |        |
| 7     | Mic Max. Input voltage | 5Vpk -10 Vpk   | Yes / No / Explain |                       |        |

|   |                 |   |                    |  |  |
|---|-----------------|---|--------------------|--|--|
| 8 | Input Crosstalk | Less than or equal to < -78 dB  | Yes / No / Explain |  |  |
| 9 | Accessories     | It should have all the necessary cables and self-test fixture to support suitable integration and testing with the audio analyser as well as the Host PC. | Yes / No / Explain |  |  |

## 10. AUDIO ANALYZER - Loudspeaker software compatible with audio analyzer

### Item specifications for AUDIO ANALYZER

| SI No | Specification               | Value   | Compliance         | Offered Specification | Remark |
|-------|-----------------------------|---|--------------------|-----------------------|--------|
| 1     | Impedance/ Thiele-small     | Full characterization   | Yes / No / Explain |                       |        |
| 2     | Loudspeaker Production Test | It should support at least Rub & Buzz detection, Impedance measurement, Frequency response, Phase measurement, Distortion product ratio and level | Yes / No / Explain |                       |        |
| 3     | Acoustic Response           | It should support at least Impulse response, Energy time curve, Frequency response  | Yes / No / Explain |                       |        |

## 11. AUDIO ANALYZER - POLQA software compatible with audio analyzer

### Item specifications for AUDIO ANALYZER

| SI No | Specification    | Value                                      | Compliance         | Offered Specification | Remark |
|-------|------------------|--|--------------------|-----------------------|--------|
| 1     | ITU-T compliance | P.863 PESQ with mapping to MOS scale       | Yes / No / Explain |                       |        |
| 2     | Operation Band   | Narrow, Wide, and Super Wideband           | Yes / No / Explain |                       |        |
| 3     | Input            | 16 bit linear audio sampled at 8 KHz (DUT) | Yes / No / Explain |                       |        |
| 4     | Measurements     | MOS, POLQA                                 | Yes / No / Explain |                       |        |

## 12. AUDIO ANALYZER - Speech Transmission Index (STI) software compatible with audio analyzer

### Item specifications for AUDIO ANALYZER

| SI No | Specification | Value  | Compliance         | Offered Specification | Remark |
|-------|---------------|--|--------------------|-----------------------|--------|
| 1     | Measurement   | STI measurement using Speech Transmission index for public address systems (STIPA method) and IEC 60268-16 method. | Yes / No / Explain |                       |        |

## 13. AUDIO ANALYZER - Loudspeaker impedance test fixture

### Item specifications for AUDIO ANALYZER

| SI No | Specification    | Value                                     | Compliance         | Offered Specification | Remark |
|-------|------------------|---|--------------------|-----------------------|--------|
| 1     | Sense Resistors  | better than or equal to 0.1 ohm, +/- 0.01 | Yes / No / Explain |                       |        |
| 2     | Overall Accuracy | Better than +/- 1%                        | Yes / No / Explain |                       |        |

## 14. AUDIO ANALYZER - BNC to BNC cable

### Item specifications for AUDIO ANALYZER

| SI No | Specification | Value   | Compliance         | Offered Specification | Remark |
|-------|---------------|---|--------------------|-----------------------|--------|
| 1     | Cable         | Cable should be compatible with audio analyser Item No. 8 | Yes / No / Explain |                       |        |

## 15. AUDIO ANALYZER - 10-32 to BNC Cables

### Item specifications for AUDIO ANALYZER

| SI No | Specification | Value | Compliance | Offered Specification | Remark |
|-------|---------------|-------|------------|-----------------------|--------|
|-------|---------------|-------|------------|-----------------------|--------|

|   |      |   |                    |  |  |
|---|------|---|--------------------|--|--|
| 1 | Type | 10-32 to BNC coaxial cable Cables compatible with audio analyser Item No. 8 | Yes / No / Explain |  |  |
|---|------|---|--------------------|--|--|

**Common Specifications (Applicable for all items)**

| SI No | Specification   | Value   | Compliance         | Offered Specification | Remark |
|-------|---|---|--------------------|-----------------------|--------|
| 1     | ACOUSTIC TESTING - Head and Torso with Mouth Simulator for Headset Test | <p>1Connection:CCP for Pre-polarized Ear Simulators and Microphones</p> <p>2Channel:2 Channel with Left Ear Simulator ,Right Ear simulator</p> <p>3Acoustic Field around Human Head and Torso as per ANSI standard:Should be complied to S3.36, S3.25</p> <p>4Acoustic Field around Human Head and Torso as per IEC standard:Should be complied to IEC 60318-4 / 60318-7</p> <p>5Acoustic Field around Human Head and Torso as per ITU-T Recommendation:Should be complied to P.57 Type 3.3 based on ITU-T Rec. P.58</p> <p>6Mouth Simulator Type:Mouth Simulator with built-in power amplifier</p> <p>7Accessories:Should provide Tripod, Left and Right Ear shore OO, External ear canal with extension kit, Allen Key, Screw Driver, Calibration CD, Calibration Jig and any other accessories which is required to operate and calibrate the simulator.</p> | Yes / No / Explain |                       |        |
| 2     | ACOUSTIC TESTING - Calibration Adapter for Pinna                        | Calibration adapter : Compatible Calibration Adapter for Head and Torso Simulator Pinna (Without needing to dismantle the complete ear simulator).  | Yes / No / Explain |                       |        |

|   |                                |  |                    |  |  |
|---|--------------------------------|--|--------------------|--|--|
| 3 | ACOUSTIC TESTING - Pistonphone | <p>1 Calibration Frequency: Nominally 250 Hz (+/- 1%) as defined by ISO 266</p> <p>2 Calibration Pressure: 110- 125 dB SPL re 20 uPa @ 250 Hz</p> <p>3 Calibration Accuracy of Pistonphone: Better than <math>\pm 0.09</math> dB (Item should be supplied with an individual calibration certificate stating the exact value and test condition)</p> <p>4 Power Supply: Should be handheld and battery operated along with spare battery that should last for 365 days</p> <p>5 IEC standard: Should be complied to IEC 942 (1998) Class 1 or IEC 60942(2018) LS Intelligent Class 0</p> <p>6 Microphone Compatibility: Should be compatible with 1/2", 1/4", 1/8" microphones</p> <p>7 Head and Torso with Mouth Simulator Compatibility: Should be compatible with the Head and Torso with Mouth Simulator as per Item No. 1</p> | Yes / No / Explain |  |  |
|---|--------------------------------|--|--------------------|--|--|

|   |  |  |                    |  |  |
|---|--|--|--------------------|--|--|
| 4 | ACOUSTIC TESTING - 1/4" CCP Pressure Standard Microphone Set with Preamplifier | <ol style="list-style-type: none"> <li>1. Connection : CCP</li> <li>2. Frequency Range : It should meet min. 300Hz to 5kHz</li> <li>3. Dynamic Range : Min. 50 dB(A) to 160 dB</li> <li>4. Sensitivity : &lt;= 1.6 mV/Pa</li> <li>5. Microphone Type : Pressure Field</li> <li>6. Microphone venting : Front vented or side vented</li> <li>7. Head and Torso with Mouth Simulator Compatibility : Should be compatible with Head and Torso with Mouth Simulator as per Item No. 1. Accessories such as mouth equalization / calibration kit or any other required item should be provided.</li> </ol> | Yes / No / Explain |  |  |
| 5 | ACOUSTIC TESTING - Microdot to BNC Cable                                       | <ol style="list-style-type: none"> <li>1. Cable Type : Min. 3 m coaxial cable with microdot to BNC connectors.</li> <li>2. Compatibility: Should be compatible with Item No. 4</li> </ol>  | Yes / No / Explain |  |  |
| 6 | ACOUSTIC TESTING - Microphone Tripod   | <ol style="list-style-type: none"> <li>1. Standard Mounting Thread : 1/4" whitworth</li> <li>2. Feet : Rubber Feet with adjustable spikes</li> <li>3. Legs : Adjustable tripod legs with locks and Locking of tripod-legs cross brace</li> <li>4. Min- Max height : 123 -161 cm</li> <li>5. compatibility: Should be compatible with Item No. 4</li> </ol>   | Yes / No / Explain |  |  |
| 7 | ACOUSTIC TESTING - 1/4" 5-Click Microphone Holder                              | <ol style="list-style-type: none"> <li>1. Material : Stainless Steel</li> <li>2. Dimension : For attaching 1/4" diameter preamplifier</li> <li>3. Special Feature : Min. Adjustable in 45 degree steps</li> <li>4. compatibility :Should be compatible with Item No. 4</li> </ol>  | Yes / No / Explain |  |  |

|   |   |   |                    |  |  |
|---|---|---|--------------------|--|--|
| 8 | AUDIO ANALYZER - 2-channel audio analyzer | <p>1 Input Channels:2<br/>Analog Input Channel<br/>2 Digital<br/>I/O: AES/SPDIF<br/>3 THD+N (Typical): &lt;-110dB or better<br/>4 Sine Frequency Range: Min. 50Hz to 5 KHz or better<br/>5 Square Frequency Range: Min. 50Hz to 1.5 KHz or better<br/>6 Frequency Accuracy: Better than 3 ppm<br/>7 IMD Test Signals: SMPTE, MOD, DFD, DIM<br/>8 Amplitude Accuracy: Better than +/- 0.03 dB<br/>9 Flatness (20Hz- 20 KHz): Better than +/- 0.008 dB<br/>10 Digital Output Sampling Rate: Should be able to sample DUT (CCA) frequency range i.e. 50 Hz – 5000 Hz<br/>11 Maximum Rated Input Voltage: As per Indian Voltage Standard (~230 Vpk)<br/>12 Residual Input Noise (20Hz - 20KHz BW): It should be less than 8.0 nV / <math>\sqrt{\text{Hz}}</math> at 1 kHz.<br/>13 Head and Torso with Mouth Simulator Compatibility: Should be measurement/connection compatible with Head and Torso with Mouth Simulator as per Item No. 1</p> | Yes / No / Explain |  |  |
|---|---|---|--------------------|--|--|

|    |  |  |                    |  |  |
|----|--|--|--------------------|--|--|
| 9  | AUDIO ANALYZER - Transducer Test Interface                           | <p>1Frequency Range:It should meet min. 50Hz to 20kHz</p> <p>2Frequency Response:Better than or equal to +/- 0.10 dB (200 Hz to 20 KHz, DC coupled)</p> <p>3Residual Noise :In a given BW, It should be less than 10uVrms</p> <p>4Signal to Noise Ratio:Better than ~ 130 dB</p> <p>5Residual THD+N:Should be less than -100 dB</p> <p>6Mic Inputs:Balanced and Unbalanced both should be supported.</p> <p>7Mic Max Input Voltage :5Vpk -10 Vpk</p> <p>8Input Crosstalk:Less than or equal to &lt; -78 dB</p> <p>9Accessories:It should have all the necessary cables and self-test fixture to support suitable integration and testing with the audio analyser as well as the Host PC.</p> | Yes / No / Explain |  |  |
| 10 | AUDIO ANALYZER - Loudspeaker software compatible with audio analyzer | <p>1. Impedance/ Thiele-small: Full characterization</p> <p>2. Loudspeaker Production Test:It should support at least Rub &amp; Buzz detection, Impedance measurement, Frequency response, Phase measurement, Distortion product ratio and level</p> <p>3. Acoustic Response :It should support at least Impulse response, Energy time curve, Frequency response</p>   | Yes / No / Explain |  |  |

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|----|--|--|--------------------|--|--|
| 11 | AUDIO ANALYZER - POLQA software compatible with audio analyzer                     | 1ITU-T compliance:P.863<br>2Operation Band:Narrow, Wide, and Super Wideband<br>3Input:16 bit linear audio sampled at 8 KHz (DUT)<br>4Measurements:MOS, POLQA | Yes / No / Explain |  |  |
| 12 | AUDIO ANALYZER - Speech Transmission Index software compatible with audio analyzer | Measurement : STI measurement using Speech Transmission index for public address systems (STIPA method) and IEC 60268-16 method.                             | Yes / No / Explain |  |  |
| 13 | AUDIO ANALYZER - Loudspeaker impedance test fixture                                | 1. Sense Resistors : Better than or equal to 0.1 ohm, +/- 0.01<br>2. Overall Accuracy : Better than +/- 1%   | Yes / No / Explain |  |  |
| 14 | AUDIO ANALYZER - BNC to BNC cable  | Cable should be compatible with audio analyser Item No. 8  | Yes / No / Explain |  |  |
| 15 | AUDIO ANALYZER - 10-32 to BNC Cables   | 10-32 to BNC coaxial cable Cables compatible with audio analyser Item No. 8  | Yes / No / Explain |  |  |
| 16 | Supply Condition & Documents Required from Vendor                                  | Compliance to be done as per the provided terms and conditions   | Yes / No / Explain |  |  |

### Supporting Documents required from Vendor

1. During bid submission, Vendor has to provide detailed technical document on how the overall test setup will be done at SAC. The only item arranged from SAC will be Anechoic Chamber, all other accessories vendor must arrange as part of their delivery.
2. During Bid submission, the Vendor has to give ATP Plan for demonstration of the Overall functionality as per Annexure I
3. If the vendor is not an OEM, recently dated authorization certificate should be provided from the OEM and specific to this tender. (Price Bid Related)
4. Soft copy of Manuals: Operating, Service, and others as applicable only in English to be

provided. Full datasheet of each equipment to be provided at the time of quotation.

**5. During bid submission, Vendor should provide complete list of system inclusive of hardware, software, and associated drivers and accessories required for full functional operation of the systems that is being supplied.**

**6. TECHNICAL COMPLIANCE to specifications and Annexure I. The detailed datasheet should be provided for offered items. The test results if available should also be provided.**

5 additional documents can be uploaded by the vendor

## C.2 Commercial Terms / Bid

| Sl. No. | Description   | Compliance         | Vendor Terms |
|---------|---|--------------------|--------------|
| 1       | If required, Vendor should be able to demonstrate the overall setup at its premise to SAC officials before PO placement.  | Yes / No / Explain |              |
| 2       | Required certificates of ITU, ANSI, and IEC compliance standard should be provided by the vendors regarding with standard mentioned in technical specifications.                            | Yes / No / Explain |              |
| 3       | Pre-bid meeting will be called in order to asses technical suitability  | Yes / No / Explain |              |
| 4       | Partial item-wise quote will not be accepted. Vendor should quote for the all the items and entire solution/items should be assembled at SAC Ahmedabad.                                     | Yes / No / Explain |              |
| 5       | If required, Vendor should provide technical assistance within 1 weeks of prior information and at SAC, Ahmedabad till the warranty period.   | Yes / No / Explain |              |
| 6       | Deliverables will be property of SAC and SAC will be free to reproduce it for its projects.   | Yes / No / Explain |              |
| 7       | Item Delivery will not accepted until vendor demonstrate the overall functionality as per Annexure I in SAC, ISRO Ahmedabad premise.  | Yes / No / Explain |              |
| 8       | Delivery: 20-22 weeks from the date of receipt of Purchase order & End User Statement   | Yes / No / Explain |              |
| 9       | Vendor should provide 1-year standard warranty for entire system (sensors, equipment's, software), at no extra cost. Vendor should provide maintenance and repair services during warranty. | Yes / No / Explain |              |
| 10      | Taxes and duties  | Yes / No / Explain |              |
| 11      | Delivery Period   | Yes / No / Explain |              |
| 12      | Delivery Terms  | Yes / No / Explain |              |
| 13      | Mode of Dispatch  | Yes / No / Explain |              |
| 14      | Port of Dispatch  | Yes / No / Explain |              |

|    |   |                    |  |
|----|---|--------------------|--|
| 15 | Packing Charges (inclusive/exclusive)   | Yes / No / Explain |  |
| 16 | Payment Terms   | Yes / No / Explain |  |
| 17 | Bank charges  | Yes / No / Explain |  |
| 18 | Name, Address & Email ID of Principal & Indian Agent (If Any) on which order has to be released.  | Yes / No / Explain |  |
| 19 | Percentage of agency commission included in the quoted price payable in Indian Rupees only directly to the Indian Agent   | Yes / No / Explain |  |
| 20 | Validity of the offer   | Yes / No / Explain |  |
| 21 | Liquidated Damages/ Down Time Compensation Clause   | Yes / No / Explain |  |
| 22 | Warranty Period from the date of receipt, Installation & Commissioning, acceptance of material at SAC (To and fro charges in case of warranty replacement/repair will be to Suppliers Account)  | Yes / No / Explain |  |
| 23 | Security Deposit @ 3% of PO value.  | Yes / No / Explain |  |
| 24 | Performance Bank Guarantee @ 3% of PO value   | Yes / No / Explain |  |
| 25 | End User Statement required or Not? (If Yes, Provide Format in editable form)   | Yes / No / Explain |  |
| 26 | Latest Authorization Certificate from the Principal   | Yes / No / Explain |  |
| 27 | Country of Origin (Submit Land Border Sharing Declaration) Provide undertaking on your letter head as per OM No. F.No.6/18/2019-PPD dated 23/07/2020 issued by Dept. of Expenditure, Public Procurement division (Refer Tender notice). | Yes / No / Explain |  |
| 28 | If bidder is MSME registered under NSIC, then furnish valid document in support of same   | Yes / No / Explain |  |
| 29 | Onsite Installation & Training (if applicable)  | Yes / No / Explain |  |
| 30 | GEM Unique Seller ID  | Yes / No / Explain |  |
| 31 | Any Other Terms   | -                  |  |

### C.3 Price Bid

| Sl. No. | Item   | Quantity  | Unit Price | Currency | Total Price | Remark |
|---------|--|-----------|------------|----------|-------------|--------|
| 1       | ACOUSTIC TESTING - Head and Torso with Mouth Simulator for Headset Test        | 1.00 Sets |            | -        |             |        |
| 2       | ACOUSTIC TESTING - Calibration Adapter for Pinna                               | 1.00 Nos. |            | -        |             |        |
| 3       | ACOUSTIC TESTING - Pistonphone   | 1.00 Nos. |            | -        |             |        |
| 4       | ACOUSTIC TESTING - 1/4" CCP Pressure Standard Microphone Set with Preamplifier | 1.00 Nos. |            | -        |             |        |
| 5       | ACOUSTIC TESTING - Microdot to BNC Cable                                       | 1.00 Nos. |            | -        |             |        |
| 6       | ACOUSTIC TESTING - Microphone Tripod   | 2.00 Nos. |            | -        |             |        |
| 7       | ACOUSTIC TESTING - 1/4" 5-Click Microphone Holder                              | 2.00 Nos. |            | -        |             |        |
| 8       | AUDIO ANALYZER - 2-channel audio analyzer                                      | 1.00 Sets |            | -        |             |        |
| 9       | AUDIO ANALYZER - Transducer Test Interface                                     | 1.00 Nos. |            | -        |             |        |
| 10      | AUDIO ANALYZER - Loudspeaker software compatible with audio analyzer           | 1.00 Nos. |            | -        |             |        |

|    |  |           |  |   |  |  |
|----|--|-----------|--|---|--|--|
| 11 | AUDIO ANALYZER - POLQA software compatible with audio analyzer                           | 1.00 Nos. |  | - |  |  |
| 12 | AUDIO ANALYZER - Speech Transmission Index (STI) software compatible with audio analyzer | 1.00 Nos. |  | - |  |  |
| 13 | AUDIO ANALYZER - Loudspeaker impedance test fixture                                      | 1.00 Nos. |  | - |  |  |
| 14 | AUDIO ANALYZER - BNC to BNC cable  | 2.00 Nos. |  | - |  |  |
| 15 | AUDIO ANALYZER - 10-32 to BNC Cables   | 2.00 Nos. |  | - |  |  |