

TENDER DOCUMENT

Subject: Supply, Installation, Commissioning & Validation of
RF Shielded Semi Anechoic Chamber

TENDER NO.: SMR/PUR/CP132/2021 I/PT

PRE-BID MEETING:

DATE: 08/04/2021

Venue: SAMEER-EMC Centre
Sector 7, Rain Tree
Marg, CBD Belapur
Navi Mumbai 400614

DUE ON : 29/04/2021 17:00hrs

EMD: 24,00,000.00

TENDER FEE : Rs. 1500+18% GST



प्रायोगिक सूक्ष्मतरंग इलेक्ट्रॉनिकी इंजीनियरी तथा अनुसंधान संस्था
SOCIETY FOR APPLIED MICROWAVE ELECTRONICS ENGINEERING & RESEARCH
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**INSTRUCTIONS FOR
SUBMITTING THE OFFER**

S A M E E R

Introduction:

SAMEER was set up as an autonomous R & D laboratory at Mumbai under the Ministry of Electronics and Information Technology (MeitY), Government of India. SAMEER, EMC Centre Navi Mumbai has been established in 2005 with an objective of offering comprehensive EMC test facility and measurement services in the area of EMI/EMC.

SAMEER invites tenders under two bid systems (technical bid and price bid) for the

Supply, installation, commissioning & validation of following:

- **10m RF Shielded Semi Anechoic Chamber with 4 m quiet zone**
- **Shielded Control room**
- **Shielded Amplifier room**
- **Shielded Conducted Susceptibility (CS) Lab**
- **Conducted Emission (CE) lab**
- **And all Associated Equipment**

For its SAMEER-EMC Center, CBD Belapur, Navi Mumbai. Bidders should be familiar with latest trends in technology areas and should have proven track record in delivering desired test facilities.

SECTION – I

INSTRUCTIONS FOR SUBMITTING THE OFFER

1. Tender Document: Interested bidders who meet the qualification criteria may submit their tender (both **Technical** and **Price bid**) in the manner mentioned in Para 6 of this chapter. Tender document can be purchased from the Accounts Section of SAMEER located at IIT Campus, Powai, Mumbai-76, between 1.30 pm to 4.30 pm, on cash payment, on all days except Saturdays, Sundays and public holidays. If the Tender document is downloaded from our website <http://www.sameer.gov.in> or <https://eprocure.gov.in/eprocure/app>, then the **Tender Fee is not applicable**.

2. Earnest Money Deposit (EMD):

- A. Earnest Money Deposit should be submitted in the form of Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee from any commercial bank of India, drawn in favour of "**Society for Applied Microwave Electronics Engineering and Research**". If the EMD is given in the form of Bank Guarantee or Fixed Deposit, then it should be valid for minimum 15 days beyond the validity of the quotation. EMD also can be paid through online payment mode. Intimation should be sent to SAMEER once the online payment is done. A copy of the Transaction details should be enclosed with Technical Bid.

For online payment our banker's details are as below:

Beneficiary Name: **Society for Applied Microwave Electronics Engineering and Research (SAMEER)**

Name and address of the Bank: Canara Bank, IIT Powai Branch Mumbai 400 076.

Account Number: 2724101086829, Type of the Account: Saving,

IFS Code: CNRB0002724, MICR: 400015129

- B. **Refund of EMD:** Unsuccessful tenderer's earnest money will be returned to them **without any interest** once the tender is finalized. Successful bidder's earnest money will be returned **without any interest** only after submission of Security Deposit (Performance Security).
- C. **Forfeiture of EMD:** Earnest money of a tenderer will be forfeited, if the tenderer withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender. Successful tenderer's earnest money will be forfeited if tenderer does not execute purchase order / contract as per the terms and conditions mentioned therein.
- D. **Exemption from submission of EMD :** Firms which are registered with Ministry of Electronics and Information Technology (MeitY) or All MSEs having registration as per provisions of the MSME Policy i.e. registration with District Industries Centre (DIC) or Khadi and Village Industries Commission (KVIC) or Khadi and Industries Board (KVIB) or Coir Board or National Small Industries Commission (NSIC) or directorate of Handicrafts and Handlooms or Udyog Aadhaar Memorandum or any other body specified by Ministry of MSME are also exempt from payment of EMD. Proof of valid registration should be attached along with the Technical Bid, failing which the Tender will be rejected.

- E. **Bid Security Declaration for EMD:** In lieu of submission of EMD, vendor may submit the "Bid Security Declaration" as per Annexure, on their letterhead.

3. Qualification Requirements and Tender Terms:

- A. In a tender, either the Indian Agent on behalf of the Principal / OEM (Original Equipment Manufacturer) or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.
- B. If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.
- C. Failure to adhere to the above conditions will lead to automatic disqualification of the bid. Tenders submitted by the Indian agent on behalf of his principal /OEM should be supported with a letter of authority from the Principal/ OEM.
- D. In case the manufacturer does not have an authorised representative in India at the time of submission of the bids and the company appoints a representative later on, SAMEER will only correspond with the manufacturer.
- E. The bidder shall bear all costs associated with the preparation and submission of its bid, and "the Purchaser", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

4. Performance Security:

- A. The successful bidder has to give Performance Security Deposit in the form of an Account Payee Demand Draft / Fixed Deposit Receipt from an Indian commercial bank / Bank Guarantee from an Indian commercial bank / a counter Letter of Credit (LC) from our bankers (in case of foreign order), for 3 % of Order Value, immediately after receiving the purchase order. Performance Security should remain valid for a period of sixty days beyond the date of all contractual obligations including warranty obligations.
- B. **Forfeiture of Security Deposit:** Successful tenderers Performance Security will be forfeited if the purchase order / contract is not executed as per the terms and conditions mentioned therein.
- C. **Refund of Security Deposit:** Performance Security Deposit without any interest will be returned only after complete execution of purchase order (including warranty period), as per purchase order terms and conditions.

5. Qualification requirements proposal

The qualification requirement proposal consisting of following details should be submitted along with the technical bid. Bidders are requested to submit their responses for the qualification requirements in four (4) parts, clearly labeled according to the following categories:

Part I –Board Resolution

- a. Board resolution authorizing the Bidder to sign/ execute the proposal as a binding document and also to execute all relevant agreements forming part of Tender document (Annexure-IV)

Part II – Details of the Organization

- a. This part must include a general background of the bidder organization (limited to 400 words) along with other details of the organization as per the format provided in Annex-I (1). Enclose the mandatory supporting documents listed in format.
- b. The bidder must also provide the financial details of the organization as per format provided in Annexure – I (2). Enclose the mandatory supporting documents listed in format.

Part III – Relevant Project Experience of Turnkey RF shielded semi anechoic chamber Projects

- a. Bidders must provide details (client organization, nature / scope of the project, project value) of similar shielded semi anechoic chamber project experience as per the format provided in Annexure – II. The projects mentioned here should match with the projects quoted by the bidder in order to satisfy the qualification requirements. Enclose the mandatory supporting documents listed in format.

Part IV – Proof of Certification

Assessment and Certification of the required following letters

1. Declaration Letter

Declaration Letter on official letter as stated in Annexure III.

2. Relationship Declaration Letter:

If the bidder or any employee of the bidder or any person acting on behalf of the bidder, either directly or indirectly is closely related to any of the officers of the purchaser or alternatively, if any close relative of an officer of the purchaser has financial interest/stake in the bidder's firm, the same shall be disclosed by the bidder at the time of filling of Tender. Any failure to disclose the interest involved shall entitle the purchaser to rescind the contract without payment of any compensation to the Bidder.

The term close relative for this purpose would mean any person related by blood or marriage to the government servant.

6. Terms and conditions on 'Technical Bid' and 'Price Bid':

A. Technical Bid:

- ❖ Original manufacturer's technical specification sheet must support details provided in the Technical bid with all the specifications / relevant technical Literatures / Brochures / Catalogues for the item. Bids received without the printed technical specification sheet / brochures / catalogues for item will be technically disqualified.
- ❖ The Technical Bid should not contain any **price information**.
- ❖ The item and accessories quoted must be from original manufacturer and must be new (**No second hand item / sub-item will be accepted**)
- ❖ In case the bidder is the authorised representative of a foreign manufacturer/supplier, a certificate from the principal must be included along with the technical bid.
- ❖ In case of deviation or substitution from the particular specification contained in the tender document, please indicate clearly as 'Alternative offer' and should contain sufficient details to show that the alternative would equally serve the purpose. All relevant technical data

should be enclosed. In case of equipment, the itemized cost of essential accessories, optional accessories and spares required need to be specified.

❖ **Technical Bid should contain the following :**

- a. **Earnest Money Deposit (EMD) / valid certificate for exemption or Bid Security Declaration.**
- b. Tender Fee Receipt Number (if the tender document is purchased from Accounts Section, SAMEER, Mumbai)
- c. Qualification requirement document
- d. Technical Specification
- e. Terms and Conditions of the tender (**Section III**) duly filled stamped and signed
- f. Commercial Terms & Conditions (**Section III**) duly filled, stamped and signed.
- g. A copy of '**Price Bid**' with all financial figures **suppressed/deleted**.
- h. Technical compliance statement

Technical Bid without the above information will not be considered.

B. Price Bid:

Price bid shall contain the following information:

- a. Quotation for the items (including the price break up for all options and accessories).
- b. TAXES, DUTIES AND LEVIES if applicable should be clearly specified.
- c. Discount on quoted price (considering that SAMEER is a R&D organization).
- d. Total price should be mentioned in both figures and words. Alterations, if any, should be attested/initiated
- e. The bid shall be free of hidden cost / ambiguity.
- f. There shall be no overwriting.

7. Submitting Tender/Bids

Tender is to be submitted in **two separate sealed covers, superscripted as 'Technical Bid' and 'Price Bid'** respectively and both these sealed covers are to be put in a bigger cover which should also be sealed and duly super scribed. Tender should be addressed to '**The Purchase Officer, SAMEER, IIT Campus, Powai, Mumbai 400 076**'. Tender reference number including 'Due Date' should be clearly mentioned on all covers. Name, Address and contact details of the vendor should be mentioned at back side of all covers. The technical bid should contain Earnest Money Deposit also.

Tenders/Bids should be dropped in Tender Box only. Tender box is placed at **SAMEER, Mumbai office.**

Note: Tender received via email, fax and Late Tenders will not be considered.

8. PRE-BID MEETING:

The Pre-bid meeting will be held on **DD-MM-YYYY**, -- HRS during which bidders will have opportunity to see the propose site and present and discuss their technical proposal before submitting the actual bids.

9. OPENING OF BIDS:

In the first instance, the Technical Bids will be opened on the next working day after due date. Final selection of the Technical Bids will be based on the Technical evaluation by **SAMEER**. Bidders may be invited to give a presentation if required by **SAMEER's technical evaluation team**. The Price Bid will not be opened on the day of opening of Technical Bids. The Bidders' representatives who are present shall sign the Quotation Opening Form evidencing their attendance. The Price Bid of only those tenderers whose Technical Bid(s) are found technically suitable will be opened subsequently with intimation to the short listed tenderers. The Tenderer may kindly note that no payment for attending/ giving presentation will be made by SAMEER, Mumbai. The presentation may have to be made at SAMEER, Mumbai.

10. CAPACITY OF BIDDER:

Any person signing a Tender shall submit documentary evidence that his signature on the Tender, submitted by him, is legally binding upon himself, his firm. If it is detected that the person so signing the Tender has no authority to do so, the Director General, SAMEER may, without prejudice to other civil and criminal remedies, not consider the Tender and hold the signatory liable for all costs and damages. The bidder shall produce a certificate from the Manufacturer of the offered product that they are the authorized dealer in India.

11. Intimation to Unsuccessful bidders

Unsuccessful bidders will not be formally informed of the result of their tender.

12. Date, Time and Venue for opening Tender:

Next working day after due date at SAMEER, IIT Campus, Powai, Mumbai – 400 076

IMPORTANT NOTE:

- a. Participation in Public Tender Opening will be STRICTLY via ONLINE VIRTUAL PLATFORM.
- b. Vendors interested must fill the ONLINE FORM available at <http://publictender.sameer.gov.in/> , two working days before the tender opening date.
- c. On the day of tender opening, a virtual meeting link will be provided through mail to the vendors who have registered for participating in the tender. Only the vendors who have submitted the offer can participate in the online tender opening.
- d. It will be assumed that those Vendors who did not fill in the form are not interested in joining the Tender Opening Process.

13. Clarification:

For any clarification please mail at purchase@sameer.gov.in

14. Corrigenda:

Corrigenda, if any, to the tender document will be published on our website www.sameer.gov.in.

The bidders are advised to check our website, before submitting the bid.



CONDITIONS OF CONTRACT

S A M E R

1. DEFINITIONS:

In this Contract, the following terms shall be interpreted as indicated. The following words and expressions shall have the meanings hereby assigned to them:

- a) "Contract Price" means the price payable to the Supplier as specified in the Purchase Order, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract
- b) "Day" means calendar day.
- c) "Completion" means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Purchase Order.
- d) "Goods" means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser as per the Purchase Order.
- e) "Related Services" means the services incidental to the supply of the goods, such as transportation, insurance, installation, commissioning, training and initial maintenance and other such obligations of the Supplier as per the Purchase Order.
- f) "Supplier" means the natural person, private or government entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Purchase Order.
- g) "The final destination", where applicable, means the place of delivery as indicated in the Purchase Order.

2. SUPPLIER'S RESPONSIBILITIES:

The Supplier shall supply all the Goods and Related Services included in the Scope of Supply and the Delivery and Completion Schedule, as per Purchase Order Terms.

3. SUB-CONTRACTS:

The Supplier shall notify the Purchaser in writing of all subcontracts awarded under this Contract if not already specified in the bid. Such notification, in his original bid or later, shall not relieve the Supplier from any liability or obligation under the Contract. Sub-contract shall be only for bought-out items and sub-assemblies.

4. CONTRACT PRICE:

Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Purchase Order shall not vary from the prices quoted by the Supplier in its bid.

5. COPYRIGHT:

The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

6. PATENT RIGHTS:

The Supplier shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark or industrial design rights, copyrights arising from use of the Goods or any part thereof in India.

7. INSPECTIONS AND TEST:

The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services or as discussed during the course of finalizing the contract. The Purchaser or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the contract specifications at no extra cost to the Purchaser. The Purchaser shall notify the Supplier in writing in a timely manner of the identity of any representatives retained for these purposes. The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at the point of delivery and/or at the Goods final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data shall be furnished to the inspectors at no charge to the Purchaser.

8. PACKING INSTRUCTIONS:

Each package will be marked on three sides with proper paint/indelible ink, the following:

- i. Purchaser Name & Address
- ii. Item Nomenclature
- iii. Order/Contract No.
- iv. Country of Origin of Goods
- v. Packing list reference number

9. DELIVERY AND DOCUMENTS:

Delivery of the Goods and completion and related services shall be made by the Supplier in accordance with the terms specified by the Purchaser in the Purchase Order. The details of shipping and / or other documents to be furnished by the supplier will also be specified in Purchase Order.

Delivery of the goods should be made as per the Delivery Schedule incorporated in the Purchase Order. The supplier should immediately intimate the shipment details to enable to clear shipment from custom clearance within free period of time.

The supplier shall notify the purchaser the full details of the shipment including order/contract number, railway receipt number /AWB etc and date, description of goods, quantity, name of the consignee, invoice etc. The supplier shall e-mail the following documents to the purchaser with a copy to the Clearing Agent.

- i. 3 copies of the Supplier invoice showing Order/contract number, goods, description, quantity, unit price, total amount;
- ii. Acknowledgement of receipt of goods from the consignee(s) by the transporter;
- iii. Insurance Certificate if applicable;
- iv. Manufacturer's/Supplier's warranty certificate;
- v. Inspection Certificate issued by the nominated inspection agency, if any, or the Supplier's factory inspection report;

- vi. Certificate of Origin issued by Chamber of Commerce;
- vii. Two copies of the packing list identifying the contents of each package;
- viii. Airway Bill / Bill of Lading;
- ix. Certificate issued by the Manufacturer OR Beneficiary declaring that the goods have been manufactured as per the agreed specifications;
- x. Declaration by the Beneficiary that the goods are handed over to the freight forwarder for onward dispatch to the destination port

The above documents should be received by the Purchaser before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses.

Please make appropriate commitments in writing that the instrument model being offered is current and is not likely to be obsolete within the next couple of years and that spare parts will be available for it for at least ten years after the installation. The Installation of the equipment is deemed complete only after all the sub-units of the main equipment such as Microwave absorbers, Antenna Mast, Turntable, etc., is installed and tested as per the specifications in the offer/brochure/Purchase order and demonstrated to the satisfaction of the end user.

10. INSURANCE:

The Goods supplied under the Contract shall be fully insured in Indian Rupees against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery. For delivery of goods at the purchaser's premises, the insurance shall be obtained by the Supplier for an amount equal to 110% of the value of the goods from "Warehouse to warehouse" (final destinations) on "All Risks" basis including war Risks and Strikes. The insurance shall be valid for a period of not less than 3 months after installation and commissioning. However, in case of orders in foreign currency supplier should arrange insurance till Mumbai port.

11. INCIDENTAL SERVICES:

The supplier may be required to provide any or all of the services, as discussed during the course of finalizing the contract. User Manual and detailed Service Manual to be supplied along with the equipment.

12. SPARE PARTS

The Supplier shall be required to provide the spare part details/materials, notifications, and information pertaining to its manufacture or distribution:

- Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract.

b. In the event of termination of production of the spare parts:

- i) Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed Requirements if any; and
- ii) Following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if requested.

13. WARRANTY TERMS:

The Supplier should warrant that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

The Supplier is further required to warrant that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in India.

The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity to the Supplier to inspect such defects. Upon receipt of such notice, the Supplier shall, within a reasonable period of time expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.

If during the period of warranty any component or spare part is need to be brought from abroad, all associated cost shall be borne by the supplier including the cost of customs duty. All incidental charges / additional duties incurred for importing warranty replacements are to be borne by the suppliers.

All the costs involved in the replacement of the defective material/goods/parts, including the transportation cost, shall be borne by the supplier.

If having been notified, the Supplier fails to remedy the defect within a reasonable period of time the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

14. Bank Charges:

All banking charges outside India will be borne by the supplier and inside India charges will be borne by the purchaser.

15. AMENDMENTS:

The Purchaser may at any time, by written order given to the Supplier make changes within the general scope of the Contract at mutually agreed terms.

16. ASSIGNMENT:

The Supplier shall not assign, in whole or in part, its obligations to perform under the Contract, except with the Purchaser's prior written consent.

17. EXTENSION OF TIME:

Delivery of the Goods and performance of the Services shall be made by the Supplier in accordance with the time schedule specified in the contract. If at any time during performance of the Contract, the Supplier or its sub-contractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may, at its discretion, extend the Supplier's time for performance with or without penalty, in which case the extension shall be ratified by the parties by amendment of the Contract. Except as provided under the Force Majeure clause, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of penalty pursuant to Penalty Clause unless an extension of time is agreed upon pursuant to above clause without the application of penalty clause.

18. PENALTY CLAUSE:

Subject to clause on Force Majeure, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Purchase order the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as penalty, a sum equivalent to 0.5 percent of the order value for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of 10 Percent. Once the maximum is reached, the Purchaser may consider termination of the Contract for Default.

In case the civil structure at the installation site is not ready within the specified delivery schedule the suitable extension would be considered.

19. TERMINATION FOR DEFAULT:

The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part

- (a) If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the contract, or within any extension thereof granted by the Purchaser
- (b) If the Supplier fails to perform any other obligation(s) under the Contract.
- (c) If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent or collusive or coercive practices.

In the event the purchaser terminates the contract in whole or in part, he may take recourse to any one or more of the following action:

- a. The Security deposit is to be forfeited;
- b. The purchaser may procure, upon such terms and in such manner as it deems appropriate, stores similar to those undelivered, and the supplier shall be liable for all available actions against it in terms of the contract.

20. TERMINATION FOR INSOLVENCY:

The Purchaser may at any time terminate the Contract by giving written notice to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the Purchaser.

21. SETTLEMENT OF DISPUTES:

The Purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract. If, after thirty (30) days from the commencement of such informal negotiations, the Purchaser and the Supplier are unable to resolve amicably a Contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms. These mechanisms may include, but are not limited to conciliation mediated by a third party, adjudication in an agreed national or international forum, and national or international arbitration.

22. APPLICABLE LAW:

The Contract shall be interpreted in accordance with the laws of India and all disputes shall be subject to jurisdiction of courts located at Mumbai.

23. NOTICES:

Any notice given by one party to the other pursuant to this contract/order shall be sent to the other party in writing and confirmed to the other party's address specified in the Purchase Order.

24. SITE PREPARATION AND INSTALLATION:

The Purchaser is solely responsible for the construction of the equipment sites in compliance with the technical and environmental specifications. The Purchaser will designate the installation sites before the scheduled installation date to allow the Supplier to perform a site inspection to verify the appropriateness of the sites before the installation of the Equipment, if required. The supplier shall inform the purchaser about the site preparation, if any, needed for installation, of the goods at the purchaser's site immediately after placement of Purchase Order.

25. TAXES AND DUTIES:

Suppliers shall be entirely responsible for all taxes, duties, license fees, road permits, etc., incurred until delivery of the ordered Goods to the Purchaser at the final destination.

26. **Commercial Invoice** produced by Reprographic system or automated computerized system marked as original is not acceptable.
27. **Integrity Pact and Contract:** The successful bidder may be required to sign an integrity pact with SAMEER. The integrity pact will commit SAMEER and the successful bidder to take all measures necessary to prevent corruption. The successful bidder will also be required to execute a contract with SAMEER, binding both the parties.

DECLARATION:


I/We _____ have read the entire terms and conditions of this Tender document and are agreeable to the terms and conditions mentioned herein.

Sign. of Bidder

Name:

Designation:

Company's Seal:



S A M E E R



TECHNICAL SPECIFICATIONS

S A M E E R

SECTION - II

1. Scope:

The vendor shall execute the task as a **turnkey project** for **supply, install, commission, performance testing & validation** of following Shielded Semi Anechoic Chamber and Associated shielded auxiliary/Laboratory rooms within SAMEER-EMC Centre at CBD Belapur Navi Mumbai, to carry out EMI/EMC tests for various electronic equipment/systems:

- **10 m** RF Shielded Semi Anechoic Chamber with **4m** quiet zone
- Shielded Conducted Susceptibility (CS) Lab
- Shielded Amplifier room
- Conducted Emission (CE) Lab
- Shielded Control room
- Associated Equipment

Note: *The successful vendor need to coordinate with other vendors while integration of the Chamber; with other sub-systems viz. Air conditioning, Electrical, Instrumentation & civil.*

2. Technical and General Requirements for RF shielded Anechoic Chamber:

Sr. No	System Requirement	Comply /not comply /deviation
1.	Dimensions of chamber and required labs	
1.1	RF shielded Anechoic Chamber: External shield to shield dimension of Anechoic Chamber LxWxH [m]: 22 x 14 x 9 (± 5%)	
1.2	RF Shielded Control Room cum CE lab: External shield to shield dimension of Control Room LxWxH [m]: 8 x 4 x 3 (± 5%)	
1.3	RF Shielded Amplifier Room: External shield to shield dimension of Amplifier Room LxWxH [m]: 3 x 4 x 3 (± 5%)	
1.4	RF shielded CS lab: External shield to shield dimensions of CS lab. LxWxH [m]: 6 x 4 x 3 (± 5%)	
2.	RF Shielded Anechoic chamber EMI Measurements: To conduct Radiated & Conducted Emission measurements according to the following standards	
2.1	MIL –STD-461 F/G: Full compliance at 1m measurement in the frequency range from 10 kHz to 40 GHz.	
2.2	EN 55011, EN 55016, CISPR 11, CISPR16-1-4, CISPR 22/CISPR 32, and CISPR 25: Full compliance at 3 m and 10 m measurement distances in the frequency range from 10 kHz to 40 GHz with 4m quiet zone, NSA for two test axis and 3m quiet zone SVSWR at 3 m test distance.	
2.3	Normalized site insertion loss (NSIL) from 9 KHz to 30 MHz at 3m, 5m and 10m test distance as per CISPR16-1-4 (to be inforce in near future).	
2.4	FCC – Class A & B, parts 15 & 18: Full compliance at 3 m and 10 m measurement distances	

2.5	EMS Measurements: To conduct Radiated & Conducted Immunity measurements according to the following Standards:
2.5.1	MIL –STD-461 F/G: Full compliance at 1m measurement in the frequency range from 10 KHz to 40 GHz.
2.5.2	EN/IEC 61000-4-3 2020: Full compliance at 3 m measurement distance in the frequency range from 26 MHz to 18 GHz.
2.5.3	Automotive Testing (Component level): As per CISPR 25, ISO11452, 95/54/EC
2.6	Applicable standards for chamber testing
2.6.1	MIL–STD–285 / IEEE299, ANSI C 63.4-2009, CISPR 16-1-4 Ed.3, EN / IEC 61000-4-3
2.7	Measurement Distance from EUT
2.7.1	7 cm & 1.0 m as per MIL-STD-461 F/G.
2.7.2	3.0 m & 10.0 m as per civilian standards
2.8	Size of EUT Equipment up to the size of approx. (4.0 x 4.0 x 3.0) m (L X B X H) in the chamber area.
3	Technical Specification of EM Shielding in Anechoic Chamber Structural Framework
3.1	All shielded chambers should be modular and self-supporting (Independent from host building). The whole system should be supported by freestanding steel structural frame and conforms to the Uniform Building Code (UBC) and internationally accepted Institute of Steel Construction (SIC) standards. The entire chamber can be easily dismantled and reinstalled without performance losses.
3.2	Before completion of the design of chambers, vendor should measure the actual dimension of the building, irrespective of the dimensions provided in these specifications. Also, they can interact with the customer. Before installation the vendor should check and approve the place of the building hosting the chamber.
3.3	Electromagnetic Shielding Systems: (Modular PAN type) In this modular chamber, the quality of shielding integrity is to be maintained in such a way that it does not degrade in joints and seams. No patchwork is permissible to achieve the specified shielding effectiveness.
3.3.1	RF shielding is to be provided with high grade hot rolled galvanized steel sheet of thickness ≥ 2.0 mm for the floor, walls and ceiling. This should meet the DIN 17162 – EN 10142 standard, Quality as per DX 52D + Z Corrosion Protection Zinc layer of suitable thickness is to be provided. Thickness of galvanization should be min. 275g/m ² by chemical passivation according to DIN/EN 10143 standards. Hot zinc spray is to be applied onto the corners after welding/ grinding.
3.3.2	Typical gap between steel sheets should be smaller than 0.5mm.
3.3.3	Should meet ANSI C63.4-2017 or latest version requirements.
3.4	Floor inside the Chambers
3.4.1	The floor of the chamber preferably built as elevated raised floor with a perfect ground plane in line with all the doors threshold and the turntable surface. This floor should accept 5 Tons equipment/vehicles on an area defined as the heavy load area.
3.4.2	Flatness as per ANSI C63, Raleigh criterions.
3.4.3	The ground plane on top should be at least 2 mm hot galvanized steel. The raised floor will have all cables running below the ground plane in

	dedicated electrical ducts from Wall penetration panels till floor connection panels integrated. The whole system remains dismountable and modifiable for future requests.																									
3.4.4	Separate electrical cable ducts for high power and low voltage cables																									
3.4.5	Handy tool for wood Block remover (manual) should be provided.																									
3.4.5	Recessed floor of 1m ³ (Pit) near antenna for accommodating high power amplifier and access from the top.																									
3.5	Shielding Effectiveness Performance																									
3.5.1	When tested in accordance with any of the following standards: IEEE-299, MIL STD 285, EN50147 part 1 and NSA 65-6, the shielded chambers will provide or exceed the following levels of shielding effectiveness.																									
	<table border="1"> <thead> <tr> <th>Frequency</th> <th>Field</th> <th>Attenuation</th> </tr> </thead> <tbody> <tr> <td>10 kHz to 200 kHz</td> <td>Magnetic</td> <td>≥ 80 dB</td> </tr> <tr> <td>200 kHz to 1MHz</td> <td>Magnetic</td> <td>≥ 100 dB</td> </tr> <tr> <td>14 kHz to 400 MHz</td> <td>Electric</td> <td>≥ 110 dB</td> </tr> <tr> <td>400 MHz to 1GHz</td> <td>Plane wave</td> <td>≥ 110 dB</td> </tr> <tr> <td>1 GHz to 10 GHz</td> <td>Plane wave</td> <td>≥ 110 dB</td> </tr> <tr> <td>10 GHz to 18 GHz</td> <td>Microwave</td> <td>≥ 100 dB</td> </tr> <tr> <td>18 GHz to 40 GHz</td> <td>Microwave</td> <td>≥ 90 dB</td> </tr> </tbody> </table>	Frequency	Field	Attenuation	10 kHz to 200 kHz	Magnetic	≥ 80 dB	200 kHz to 1MHz	Magnetic	≥ 100 dB	14 kHz to 400 MHz	Electric	≥ 110 dB	400 MHz to 1GHz	Plane wave	≥ 110 dB	1 GHz to 10 GHz	Plane wave	≥ 110 dB	10 GHz to 18 GHz	Microwave	≥ 100 dB	18 GHz to 40 GHz	Microwave	≥ 90 dB	
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3.6	Technical Specification of Floor and Ground plane Inside the Chamber and shielded rooms																									
3.6.1	The chamber has to be installed above a rubber membrane in order to avoid any humidity problem. The chamber should accept flatness tolerances of + or - 5mm on a length of 5m.																									
3.6.2	The elevated floor of the chamber should be adjustable by mechanical jacks for offering the best flatness possible.																									
3.6.3	The electrical grounding connection of the ground plane into the chamber should be made at the whole peripheral in order to avoid any ESD problems and improves the NSA performances.																									
3.6.4	Inside the shielded rooms, an elevated floor made of removable plates (as computer rooms) adjustable and protected against ESD has to be provided. The floor inside the shielded rooms has to be sized for 1000 kg/m² . The cables are running under this floor in the room, and the plates 600 x 600mm are easily removable for any modifications or service.																									
3.7	Grounding for EM Shielded Anechoic Chamber, EM Shielded Control & Amplifier room																									
3.7.1	Very good electrical grounding is must for these chambers to meet desired shielding effectiveness performance. Total Chamber must be isolated from ground, as well as the steel construction supporting the chamber and the connection of all the air ducts to the honeycombs. Each shielded room should be grounded at one and unique point as close as possible from the power filters. The grounding should be connected to available earth pit with minimum bonding resistance. The ground pit will be provided by the SAMEER.																									
3.7.2	Each filter box should be also grounded independently to the shielding.																									
4	Technical details of Shielded Chamber's Microwave Absorbers																									
4.1	Shielded Chamber's Microwave Absorbers																									
4.1.1	The anechoic chamber will be fully lined with microwave absorbers on																									

	all sides to cover the frequency range from 26MHz to 40 GHz.													
4.1.2	The four walls and ceiling of the chamber including the doors shall be covered fully with the absorbers to meet MIL-STD461F/G applications and commercial standards. The details regarding the type of absorbers should be provided and shall meet MIL-STD 461 F/G and the commercial standard performances.													
4.1.3	The absorbers shall be tested /calibrated and the certificates may be submitted.													
4.1.4	Fire proof certificate according to EN 13501-1 B2													
4.2	Applicable Standards for microwave absorbers													
4.2.1	Performance of microwave absorbers should meet MIL-STD461F/G applications as well as commercial EMC standards (such as CISPR16-1-4Ed. 3, EN50147-2, EN 55022, andANSIC63.4) and EMS standards (EN/IEC 61000–4-3).													
4.2.2	Chamber designed with the absorbers should meet Normalized Site Attenuation & Site VSWR requirements specified in CISPR16-1-4 Ed.3.													
4.2.3	The design and full coverage on the walls and roof of the chamber should comply with NSA, VSWR, Quiet zone, field uniformity requirements as per the latest applicable Civilian standards and MIL-STD-461 F/G.													
4.3	Technical Specifications of Microwave Absorbers													
4.3.1	The Absorber should provide high performance over the whole frequency range 26 MHz – 40 GHz.													
4.3.2	The absorbers need to be non-hygroscopic, lightweight Pyramidal shaped. They will not droop or change their physical and electrical characteristics with time or as a result of ambient environment													
4.3.3	The absorbers should not generate any additional dust in the chamber. It should meet the ISO 14644-1 Class 5.													
4.3.4	The vendor should supply the absorbers from the manufacturer having sufficient experience in manufacturing absorbers.													
4.3.5	<p>Specifications:</p> <ul style="list-style-type: none"> ➤ Frequency Range: 26 MHz – 40 GHz ➤ Guaranteed Product Life: More than 15 years ➤ Max. service temperature: 90 °C ➤ All Pyramidal absorbers shall be treated/designed for longer life time, excellent shape retention. ➤ Guaranteed Reflectivity of absorbers at normal wave incident should be better than the values given in the following table: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Frequency</th> <th>Reflectivity (dB)</th> </tr> </thead> <tbody> <tr> <td>30 MHz</td> <td>-17</td> </tr> <tr> <td>200 MHz</td> <td>-20</td> </tr> <tr> <td>300 MHz</td> <td>-20</td> </tr> <tr> <td>500 MHz</td> <td>-20</td> </tr> <tr> <td>1 GHz – 40 GHz</td> <td>-25</td> </tr> </tbody> </table>	Frequency	Reflectivity (dB)	30 MHz	-17	200 MHz	-20	300 MHz	-20	500 MHz	-20	1 GHz – 40 GHz	-25	
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4.3.6	Vendor should provide authenticated certificate for Reflectivity performance of microwave absorber. A FAT at the vendor site has to be provided for the verification of the performances of the absorbers. Test report sample to be enclosed with technical bid.													
4.3.7	Vendor should provide necessary assurance certificate for guaranteed reflectivity performance for minimum 10 to 12 years.													

4.3.8	Power handling capability: Minimum 1 kW/m ² (CW signal) that corresponds to 600 V/m field. Test reports shall be enclosed.	
4.3.9	Fire Retardant: Compliant with fire retardant standards EN 13501-1 B2 , evaluation according to the report NRL 8093 test levels 1, 2, 3, 4 and 5 to be submitted. Vendor to submit a fire retardant test report performed not older than 10 years test period.	
4.3.10	Humidity resistance: Not absorbing moisture from the ambient environment / no deterioration from water. Test report to be submitted.	
4.3.11	Chemical stability: Not readily attacked by acids, alkaline and petroleum based liquids. Absorbers should not shed particles during the operation of the chamber / when it is dipped in the water and squeezed.	
4.3.12	Absorbers must be coated (Company name & logo is to be printed)	
4.3.13	Furnishing: White front panels offering the same fire level as that of absorbers to enhance illumination and aesthetics of anechoic chamber; if dark in color, w100 absorber or pyramids offering a light color.	
4.3.14	The absorbers should be tested as per the test methods and equipment requirement specified in IEEE-STD-1128 and all test reports are to be in the absorbers shipment. Test lab used for the test of absorbers should be described and available for SAMEER control.	
4.3.15	Moveable Floor Absorber: Supplier has to specify the size and type in order to be fully compliant to the required EMC standards IEC/EN 61000-4-3, Ed.3 and CISPR 16-1-4, Ed.3. The supplier should have a provision for storage of absorbers inside the chamber.	
5	Technical Specifications of EM Shielded Door in Anechoic Chamber, Shielded Control Room and Amplifier Room	
5.1	Sliding Door of Anechoic Chamber	
5.1.1	Type: Sliding gate fitted with absorbers.	
5.1.2	Dimension: 3000mm x 3000mm (WxH) or any other nearest standard size.	
5.1.3	Sliding Gate Features:	
5.1.3.1	While opening, automatic sliding gate first comes backwards from its RF-tight position, then slides to the side. After this the lifting platform raises from the pit allowing an even access to the Chamber. Automatic platform system (of same width than the door) is required in front of the sliding gate to provide an even access for vehicles into the chamber when the door is open. Max load capability of the ramp is 5 tons (approx.). When the lifting platform is up and locked in position, the levels outside and inside of the chamber are exactly the same. (no slope, no difference). i.e. the lifting platform outside the sliding door should have ± 0 mm doorstep.	
5.1.3.2	Vendor will provide pit dimension (Depth x Width) for chamber, gate and platform.	
5.1.3.3	Separate supporting structure for the sliding door.	
5.1.3.4	Micro switches indicating RF-tight open / close status of the door. Interlock switch for automatic power cut off RF power amplifies while door is open. Door can be integrated with fire detection systems. The outside of the door should be equipped with Electrical displays like "TEST IN PROGRESS", "ALARM" and buzzers. Displays and buzzers should be integrated with interlock switch.	
5.1.3.5	Door shall be provided with pneumatic jack for holding the door in open position, if required for sliding gate.	
5.1.3.6	Fully Automatic operation. Manual operation mode should be available in case of failure of automatic operation.	

5.1.3.7	Electrical Power requirement: 200-240 V, 50 Hz, single phase.	
5.1.3.8	Shielding Effectiveness: Same shielding effectiveness of the chamber as specified above	
5.2	Doors between Anechoic chamber & Control room Purpose: Required for personnel and Small EUTs movement between the shielded control room and the shielded anechoic chamber.	
5.2.1	Door Dimension (WxH): 1500 mm x 2100 mm	
5.2.2	Door Type: Double/Triple Knife Edge shielded door fitted absorbers.	
5.2.3	Motion: Manual swing door, Manual opening facility from inside the chamber for emergency exit.	
5.2.4	Door Features: Bronze single/ double knife edge extrusion mounted on the door leaf, receiver housing is mounted on the door frame	
5.2.5	The doors should be sized for supporting the absorbers and guaranteed at least 20000 MTBF.	
5.2.6	Safety Features: Micro switch for door status (RF tight open / close) indication. Interlock switch for automatic power cut off RF power amplifiers while door is open	
5.2.7	Shielding Effectiveness: Same shielding effectiveness of the chamber as specified above.	
5.2.8	Door Configuration:	
5.2.8.1	Rugged and industrial construction, suitable for everyday use.	
5.2.8.2	Door maintenance kit-2 Nos. for each door.	
5.3	Door for Control room cum CE lab Purpose: Required for personnel entry from outside into the shielded control room.	
5.3.1	Door Dimension (WxH): 1500 mm x 2100 mm	
5.3.2	Door Type: Double/Triple Knife Edge shielded door with manual swing motion. Opening outside of the room. Manual opening facility from inside the room for emergency exit.	
5.3.3	Door Features: Bronze single/ double knife edge extrusion mounted on the door leaf, receiver housing is mounted on the door frame.	
5.3.4	Micro switch for door status indication. Door can be integrated with fire detection system.	
5.3.5	Shielding Effectiveness: Same shielding effectiveness of the chamber as specified above.	
5.3.5.1	Rugged construction, suitable for everyday use.	
5.3.5.2	Door maintenance kit-2 no for each Door	
5.4	Door between Amplifier room and Control room Purpose: Required for personnel entry between two rooms.	
5.4.1	Door Dimension (WxH): 900 mm x 2100 mm	
5.4.2	Door Type: Double/Triple Knife Edge shielded door/ Single leaf door and manual swing motion. Opening outside of the control room. Manual opening facility from inside the amplifier room for emergency exit.	
5.4.3	Door Features: Bronze or hot galvanized double/triple knife edge extrusion mounted on the door leaf, receiver housing is mounted on the door frame.	
5.4.4	Micro switch for door status indication. Door can be integrated with fire detection system.	
5.4.5	Shielding Effectiveness: Same shielding effectiveness of the chamber as specified above.	
5.4.5.1	Rugged construction, suitable for everyday use.	
5.4.5.1	Door maintenance kit-2 no for each Door	

6	Honeycomb Waveguide Air Vents for HVAC (Heating, Ventilation and Air Conditioning) System	
6.1	Temperature inside the chamber: 25± 3 °C	
6.2	Humidity: Less than 70%	
6.3	Air conditioning and cleanliness requirement: To meet the temp./humidity and cleanliness requirements, appropriate provision of honeycomb structures (inlet/outlet) to handle adequate air flow from centralized air conditioning unit needs to be installed, taking into account the volume of the main chamber, control room, amplifier room and also the heat load from EUT	
6.4	Ventilation and Pressure compensation	
6.4.1	Honeycomb inserts could be used for providing ventilation as well as for pressure compensation. The honeycomb design should combine the highest shielding effectiveness with the lowest resistance to airflow. The honeycomb inserts are to be equipped with a mounting flange to connect with AC ducts. Air supply and exhaust return is to be done through honeycomb air vent panels fitted to the openings on the shielded wall or ceiling. Honeycomb vents should be made of brass or steel core material with suitable Tin coating for superior RF performance and corrosion resistance.	
6.4.2	The honeycombs should provide at least the same performances than the shielding effectiveness requested.	
6.4.3	The honeycombs must be removable for cleaning operation.	
6.4.4	Connection / interface of the AC ducts to these honeycomb air vents should be done through dielectric spacing collar to provide electrical isolation and a full protection against vibration which could be transmitted by the A/C unit.	
6.4.5	It will keep RF currents on the surface of metal ducts from transferring to the shield wall and lowering the shielding effectiveness. Appropriate arrangement for fixing the absorbers over the honeycomb air vents has to be realized to ensure requisite passage of air. Air conditioning ducts are to be fitted with 5-micron air filters to maintain a reasonable cleanliness. Supplier has to work out the location of air conditioning ducts inside the chamber as well as control room and amplifier room to maintain the inside temperature.	
6.5	A/C Vents	
6.5.1	The presence of A/C vents should not degrade the shielding effectiveness performance of the chamber.	
6.5.2	Vendor should provide with the technical bid documents following information: Type, quantities, locations and dimension of honeycomb air vents, chamber air current, air speed at honeycomb & pressure drop at honeycomb.	
6.5.3	Vendor should compatible with A/C installation vendor.	
6.6	Additional features: Fume extraction facility	
6.6.1	Chamber shall be equipped with a special honeycomb offering a connection to a high temperature exhaust gases hose (200°C) EMC compliant with corresponding transparent adjustable supporting stand. The extraction system should be delivered with an outside specific turbine for 100°C and 4800 m ³ per hour. Air compensation for chamber pressure should be delivered in accordance.	
6.6.2	Chamber shall be equipped with waveguide air vent along with pipe adapter and exhaust fan for extraction of fume from vehicles.	

6.6.3	Waveguide air vent for compressed air	
7	Shielding Access Panel(AP)	
7.1	Purpose: All coaxial RF cables, electrical / data / control signals and fiber optics will enter the shielded chambers through access panels ensuring complete interconnectivity and high shielding effectiveness performance	
7.2	Features	
7.2.1	The AP's shall be of modular bolted system for easy replacement or upgrade. Each Access Panel (AP) is equipped with RF connectors / FO connectors. All connectors should be precision type.	
7.2.2	Wall penetration panels should be designed in such a way so as to respect the radius of cables entering into chamber to avoid breakages.	
7.2.3	Wall penetration panels should easily be removable.	
7.2.4	Connection Panels should be integrated inside the raised floor of the chamber.	
7.2.5	All Cable ducts should be situated under the raised floor.	
7.2.6	Two separate electrical steel ducts to be provided for high voltage and low voltage cables with cover and should be grounded to avoid coupling effects.	
7.2.7	There should be a separate Power duct and direct Coax duct from filters to wall penetration panel and connection panel to be provided.	
7.3	Access panels between Anechoic chamber and control room	
7.3.1	RF Access panel2 No. List of connectors: <ul style="list-style-type: none"> • BNC (f), 50 Ohm2 No's • N (f) TYPE, 50 Ohm.....4 No's • SMA (f), 50 Ohm..... 2 No's • Waveguide pipeline, 5 cm diameter..... 2 No's • Waveguide pipeline, 2.5 cm diameter..... 2 No's • Fiber optic cable connector.....6 holes 	
7.3.2	Empty RF Access panel for future requirements.....2 Nos.	
7.3.3	Access panel for Audio, Video & other equipment connections...1 No.	
7.3.4	CCTV Camera full HD (can withstand 200V/m field) 4 No's (Two fixed on Walls Brackets + 2 Movable on wooden tripods)	
7.3.5	Audio Communication Set full duplex EMC proof (can withstand 200V/m field) between the Control Room and the chamber ...01 No. Shielded intercom system between the Control Room, Amplifier Room and outside to the lab.....2 No's	
7.3.6	Feed through 2 multi optic fiber wave guides for 2 x 6 Fiber. 2 filters for signal lines (2 lines each) 1 no. Shielded optic converter for GPIB / IEEE 488 1 no. Shielded optic converter for LAN 1Gb 1 no. Shielded optic converter for RS-232 high speed. From Control Room to Shielded Anechoic Chamber. The shielded optic converters shall be delivered with built in battery for flexible setup in the SAC.	
7.3.7	Access panel for various Control signals..... 1 No.	
7.4	Access panels between Control room & Amplifier room	
7.4.1	RF Access panel1 No. <ul style="list-style-type: none"> • BNC (f), 50 Ohm 2 No's • N (f) TYPE, 50 Ohm..... 6 No's • TNC, 50 ohm..... 2 No's • SMA (f), 50 Ohm..... 2 No's 	

	<ul style="list-style-type: none"> Waveguide connector (Hole diameter 2.5 cm)... 1 No's with caps 	
7.4.2	Viewing panel 1 No.	
7.4.3	Empty RF Access panel for future requirements..... 2 Nos	
7.4.4	Access panel for various Control signals..... 1 No i.e. GPIB / IEEE 488, LAN, RS-232 etc. (through waveguide pipe penetration)	
7.4.5	Filters for signal lines 2 No's (2 lines each) 1 No. shielded optic converter for GPIB / IEEE 488, 1 shielded optic converter for LAN 1GB, 1 shield optic converter for RS-232 high speed	
7.5	Access panels between Amplifier room and Main chamber	
7.5.1	RF Access panel (Size: 18 inch x 18 inch) 1 No. List of connectors: <ul style="list-style-type: none"> BNC (f), 50 Ohm3 No's N (f) TYPE, 50 Ohm..... 3 No's TNC, 50 ohm.....2 No's SMA (f), 50 Ohm..... 2 No's 	
7.5.2	Empty RF Access panel for future requirements...2 Nos.	
7.6	Access Panel Requirements	
7.6.1	To provide required quantity with suitable size panels as specified by the equipment supplier at later stage.	
7.6.2	To provide different types of connectors on shielding panels as per the requirements of equipment supplier to make interconnections between Controllers, antennas, amplifiers and Test Equipment's at later stage during installation of test equipment's.	
7.6.3	Proposed access panels should be flexible for future up gradation with new connectors.	
7.6.4	All the cables and connectors must have low loss performance and procured from reputed companies.	
7.6.5	When using filters or sockets or the connector of cable is not possible to be removed for entering into the chamber, an RFI trap should be provided.	
7.7	Access Hatches (Floor Connection Panel)	
7.7.1	As suggested by the equipment supplier for meeting all the connection requirements of the chamber accessories.	
7.7.2	The floor connection panels are offering an opening size of 600 x 600 mm and integrate all connectors from the wall penetration panels, as well as all the sockets from the electrical distribution box. An automated self-grounded steel cover covers each floor connection panels with pneumatic Jacks for holding the cover in place should be provided.	
8	Electrical Installation	
8.1	The chamber is to be fitted with a main switch board with appropriate protections (Circuit -breakers). This electrical distribution box should be installed outside of the chamber for easy personal access in case of problems. The board will be provided such that there is sufficient capacity for the present requirements and the future additions.	
8.2	The different networks are to be distributed on sockets to power the EUT and Amplifier rack, Antenna mast, TT, CCTV, illumination system etc.	
8.3	The type of sockets, the quantities (to be supplied) and the locations are to be determined during final engineering process by mutual agreement.	

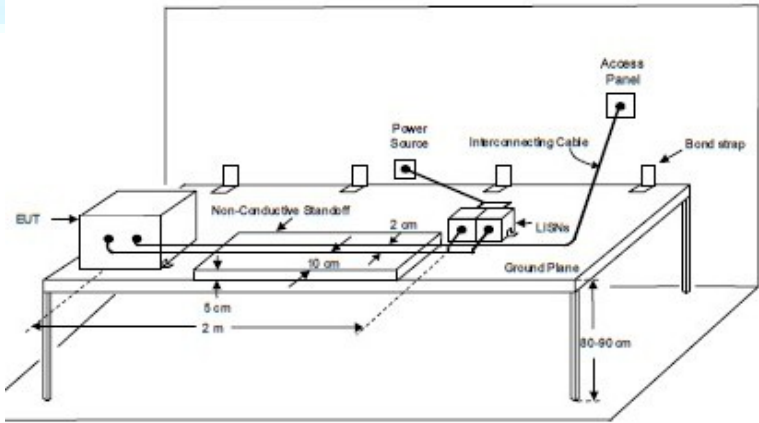
8.4	Emergency light has to be provided above the personnel doors, these emergency lights should be in accordance with the standard EN1838 providing at least 1 lux in the whole chamber. The emergency lights should be EMI proof (not any emission generated inside the chamber)	
8.5	Separate shielded metal turnings for RF cables and electrical installation are to be provided inside the elevated floor in the SAC	
8.6	Grounding bolts for connection to available integrated inside the ground plane (at least 2 pieces made of brass bar threaded flush with the ground plane).	
8.7	To provide power outlets at different locations in the chamber integrated inside the floor CP	
9	Power Line Filter's configuration	
9.1	Features	
9.1.1	All the power lines entering the RF shielded Anechoic Chamber and the RF Shielded Control / Amplifier room should be adequately filtered to preserve the specified shielding effectiveness of the facility.	
9.1.2	Real separated lines, single choke filters should be provided.	
9.1.3	RF sealed case made of stainless steel.	
9.1.4	Wire mesh sealed access lid for cabling terminals.	
9.1.5	"Single choke for each line" concept, to ensure full insertion loss performance also in case of unbalanced current flow.	
9.2	Insertion Loss	
9.2.1	All PLFs shall have a performance of 100dB insertion loss at full load conditions from 14 KHz to 40 GHz in accordance with MIL-STD-220 A or CISPR 17. Sample test certificate to be submitted along with technical Bid.	
9.3	Filter rating for RF Shielded Anechoic Chamber	
9.3.1	<ul style="list-style-type: none"> • 415V/100 Amp/Phase, 50Hz, 3Ø, 4 line..... 2 No • 115V/ 32 Amp/Phase, 400Hz, 3Ø, 4 line.....2 No • DC Power Supply 500V, 100Amp, 2 line.....1 No • 230V/63 Amp, 50 Hz, 1Ø, 2 line..... 2 No 	
9.4	Filter rating for Control room	
9.4.1	<ul style="list-style-type: none"> • 415V/63 Amp/Phase, 50Hz, 3Ø, 4 line..... 2 No • 230V/ 32 Amp, 50Hz, 1Ø,1 No • 115V/ 32 Amp/Phase, 400Hz, 3Ø, 4 line.....1 No • DC Power Supply 500V, 100Amp, 2 line.....1 No 	
9.5	Filter rating for Amplifier room	
9.5.1	<ul style="list-style-type: none"> • 230V/ 415V,63 Amp, 50Hz, 3Ø, 4 line.....1 No • 230V, 16 Amp, 50 Hz, 1Ø,1 No 	
10	Signal Line Filter's Configuration	
10.1	Configuration	
	Any communication from outside to inside and vice-versa between chamber and control room must be realized through signal line filters.	
10.2	Signal Line filters required	
10.2.1	<p>Telephone & other audio communication signal filter, all digital signals, Filters for immunity interlock switches etc.</p> <ul style="list-style-type: none"> • Suitable signal filters for Anechoic Chamber & control room. • Anechoic Chamber: 4 line, Analog telephone filter.1 no • Control Room: 4 line, Analog telephone filter.....1 no 	

	<ul style="list-style-type: none"> RF-tight case made of tin-plated sheet steel. <p>Internet (LAN), Analog/ ISDN telephone filters need to be provided between the control rooms.</p>		
11	Illumination		
11.1	LED high power, EMI free and high immunity (200V/m) acceptance LED should be installed within the main chamber and must meet 300-500 LUX measured at 1m from the floor ground plane illumination over the entire chamber area. The lights are warranted at least 10 years. The lights should be switched from outside the chamber at positions adjacent to both the main entrance Door / Personnel access door. The fittings of the LED lights should be compatible with Indian standard.		
11.2	There should be a provision for the Emergency lamps to be powered by UPS located outside via Power Filter.		
11.3	Should not generate any heat		
11.4	All electronics for the LED lighting should be outside of the chamber. Signal Lamps: Location : The signal lamps are fixed above the gate and doors. Indication: Test in Progress Lamp / outside of door. Fire Alarm: Fire Alarm Lamp / outside of door.		
12	Turntable		
12.1	Configuration The turntable shall be incorporated into the concrete slab or into the elevated raised floor, flush with the ground plane. Turn table should have specific grounding ring and matching wear strip to provide continuous electrical coupling with ground plane. A 0.3 m diameter opening in the center of the turntable shall provide the power supply for testing. Remote control operation through GPIB/LAN based controller. All I/O signals between the motor base and controller are through fiber optics lines. Turn table can also be set for continuous rotation or 400° max in order to avoid any problem with the cables connected to the EUT.		
12.2	Technical Specifications		
12.2.1	Diameter	4.0 m Φ for EUT sized 4x4 m base	
12.2.2	Load Capability	~ 5000 kg	
12.2.3	Height not exceeding	320 mm	
12.2.4	Material carrier plate	Stainless steel	
12.2.5	Rotating speed	adjustable between 0.5 to 2 rpm	
12.2.6	Positioning accuracy	$\pm 0.1^\circ$ or Better	
12.2.7	Rotating angle	+400° or -200° to +200°	
12.2.8	Motor	Brushless, Asynchronous with frequency inverter and high accuracy encoder	
12.2.9	Drive unit	Shielded and radio interference suppressed. Located outside of the turn disk in order to offer large space for cables to the EUT and easy access to the drive unit for maintenance.	
12.2.10	Control signals	I/O signals through Fiber optic cable; sufficient length of long fiber optic cable	
12.2.11	Remote control via	GPIB / IEEE /LAN interface The interface shall be compatible with most of the automation controllers & test instruments from different vendors	

12.2.12	Current consumption	Max. 30 A	
12.2.13	Voltage	230VAC, 50Hz, single phase	
12.2.14	Temperature range	-10°C to +45°C	
12.2.15	Accessories	<ul style="list-style-type: none"> • Interface to Controller • Power supply cable • Service manual • Built in software for automation controls 	
13	Antenna Mast		
13.1	The chamber shall be equipped with Automatic & remote-controlled bore sight Antenna Mast.		
13.2	Antenna scan shall be possible from 1 to 4m height and tilting.		
13.3	Automatic polarization change shall be possible.		
13.4	The driver of the mast shall be compatible with the Turntable and various test instruments.		
13.5	All the driving mechanism (motor, digital drive, electrical networks etc.) shall be installed in a high performance shielded box to suppress EMI generated by the electronics and also to protect this system against the fields generated in the chamber and shall meet the standards.		
13.6	The antenna shall be linked to the GPIB controller through fiber optics.		
13.7	Should provide antenna mounting adapters for most of the EMC antennas.		
13.8	Should be able to handle antennas weighing min. of 12kgs at cross beam scan.		
13.9	Accuracy: scan \pm 5 mm and polarization 0.2°		
14	Video Monitoring Camera System		
14.1	High Resolution Digital (Full HD 1920x1080 pixels) Color Video Camera System with in-built Audio Monitoring system for both audio & visual monitoring. Type: EMC hardened Digital System with Network Controller.		
14.2	System requirement		
14.2.1	Digital Camera (mobile unit), Qty. 1 No. , mounting hardware for wall or ceiling (can withstand 200V/m field).		
14.2.2	Digital System Camera (stationary unit), Qty. 1 No. , adjustable tripod		
14.2.3	Desktop computer with powerful graphics processor, Qty. 1 No		
14.2.4	LED monitor 42 inch, Qty. 2 No.		
14.3	System Feature		
14.3.1	Multiple accesses on a single camera		
14.3.2	Camera access from any location inside the network		
14.3.3	Direct MPEG4 video format recording and storage on hard disc by dedicated digital recorder		
14.3.4	JPG picture capturing		
14.3.5	Additional digital zoom feature		
14.3.6	Event recording		
14.4	Camera Feature		
14.4.1	Remote controlled via PC / dedicated Controller, integrated 20x optical zoom lens, optical image stabilization		
14.4.2	Additional 12x digital zoom		
14.4.3	Immunity > 200 V/m up to 40 GHz (copy of laboratory test report to be submitted with technical offer)		
14.4.4	Compliant to CISPR 22 (class B).		
14.4.5	Sharp full HD Color Resolution (1920x1080)		
14.4.6	Control of Focus, tilt, Pan, Iris & Zoom (175° pan angle) by computer and		

	software included	
14.4.7	Frames per sec: 30 max	
14.4.8	Fiber optic or optical transmission	
14.4.9	Should have built-in Micro phone	
14.4.10	Should have built-in LED lighting	
14.4.11	FSMA or wave guide penetration kit for all required connections to the controller, to include the following	
14.4.11.1	The camera system based on real time full HD is a complete solution autonomous having its own optical connections to the control room to monitor and digital recording. The digital recorder is also full HD compatible and accessible through the LAN connection via optic fiber converter.	
14.4.11.2	Each camera should include simplex audio equipment for listening to the device under test and also LED lighting integrating in order to have a better view on closer elements.	
14.5	Specification of Display Screen	
14.5.1	Flat panel color LCD/LED monitor	
14.5.2	Screen size 42 inches	
14.5.3	Video monitoring display system must be compatible with the camera output	
14.5.4	Picture in Picture (PIP) facility and splitting screen features	
14.5.5	Necessary connectors for audio / video input	
14.5.6	Audio Features (2 no. speakers integrated into the controller)	
15	Intercom & Telephone Connection	
15.1	EMI hardened intercom between: <ul style="list-style-type: none"> a. Main chamber and shielded CS lab. b. Main Chamber and CE Lab. c. CE lab and Amplifier room. d. CE lab to outside 	
15.2	Telephone connectivity (Analog/ISDN) from control rooms	
15.3	One number of signal line filters for each Phone line	
16	Specification of Audio communication system	
16.1	High sensibility and powerful audio system perfectly shielded (EMI free and EMS 200V compliant) should be installed between the SAC 10 and the control room. This full duplex system is mobile and can be used for easy communication from the SAC to the Control Room and vice versa, as well as to monitor the sound from EUT under strong tests	
16.2	Between the Control Room and Amplifier Room and the outside of the lab a shielded intercom system has to be supplied	
17	Fire Detection system	
17.1	Fire detection, alarm system of VESDA technology or equivalent should be incorporated in the anechoic chamber for the safety of the personnel and EUT. The fire detection is to be take place at levels-smoke detection, flame detection, ion detection. The detectors need to be placed at suitable locations. The information from these detectors is to be transmitted, processed and communicated to the control room FACP where decision regarding appropriate action is taken. This calls for installation of a number of sensors and processors for the chamber. As VESDA fire detection system is widely used for fire detection by air sampling method, the same should be provided	

17.2	The fire/smoke/ion detection system must conform to US (MIL) and European standard. The fire detection system should conform to NFPA Standards-72 . Also it needs ULFM approval. Control should be provided to switch off the main to the chamber in case of fire/smoke detection by system	
17.3	Fire Detection system requirements	
	The system should consist of highly sensitive laser based smoke detector using aspirated air sampling and is connected to sampling pipes. It should be provided with a sample inlet, internal flow monitoring, smoke detection and a facility for exhaust pipe connection. Reset, disable and fault determination function will be available via the field service access door. System configuration should be provided through the auto learn function, also available via the field service access door	
17.4	Detector Assembly	
17.4.1	The detector, filter, aspirator and relay output shall be housed in an enclosure and shall be arranged in such a way that air is drawn from the fire risk area and a sample of air is passed through the dual stage filter and detector by aspirator	
17.4.2	The detector shall be laser based type and shall have obscuration sensitivity range of 0.025-20% obs/m	
17.5	Displays	
17.5.1	<p>The detector should be provided with LED indicators. Each detector should be provided with the following features at minimum:</p> <ul style="list-style-type: none"> • Alert, Alarm, Fire1 and Fire2 corresponding to the alarm thresholds of the detector. • Remote fire alarm configuration. • Smoke dial display represents the level of smoke present. • Fault indicator • Power indicator • Disabled indicator • Buttons support the following features shall be accessible to authorized personnel: <ul style="list-style-type: none"> I. Reset – Unlatches all latched alarm and faults. <p>Disable – Disables the fire relay outputs from actuating and indicates a fault.</p>	
17.6	Digital Communication Port	
17.6.1	An RS 232 compatible serial port should be provided on the detector for configuration, status monitoring, command input, event log extraction, and software upgrades. It should comply with EIA RS232 protocol.	
17.7	Performance Requirements	
17.7.1	System should be tested and approved to cover up to 250 m ² in normal airflow	
17.7.2	The detector should be approved to provide very early smoke detection and provide up to four output levels corresponding to Alert, Action, Fire 1 and Fire 2. Alert and action should be programmable and able to be set at sensitivities ranging from 0.025 to 20% obs/m	
17.7.3	The detector should provide fault indication on the unit using the Instant Fault Finder function	
17.8	Quality Assurance	
17.8.1	The fire detection system should be ISO 9001 certified	
17.9	Approvals	

17.9.1	<p>The very Early Smoke Detection System must be of a type submitted to tested, approved and/or listed by minimum by two of agencies below:</p> <ul style="list-style-type: none"> • LPCB (loss prevention Certificate Board, UK) • VdS (Verband der Sachversichere.V.), Germany • AFNOR – France • UL (Underwriters Laboratories Inc.), US • SSL (Scientific Services Laboratory), Australia <p>NTC – China</p>	
17.10	Codes, Standards & Regulations	
17.10.1	<p>The Laser smoke detector should be installed to comply with one or more of the current additions to the following codes or standards:</p> <ul style="list-style-type: none"> • British Fire protection systems association, code of practice for category1 aspirating detection systems. • British Standards, BS 5839 part 1:2002 or BS 6266:2002 • Other codes and standards relevant to the particular territory into which the product is installed – e.g. VdS (Germany) and APSAD R7 rules (France). <p>Important Note: The chamber should be fitted with the best of fire/smoke detection system without increasing the reflectivity of the walls of the anechoic chamber. The firm should give the detailed break up of items for the supply and installation</p>	
18	Personal Safety from EM Radiations	
18.1	<p>An interlock switch should be provided at all doors. The switch will lock out instrumentation unless all doors are closed during high power testing to protect the personnel from exposure to high power EM radiation</p>	
19	Test Bench for MIL STD or CISPR25 (components level)	
19.1	<p>As per below Figure of MIL-STD-461F/G, copper top test bench size of 3.5m (L) x 1.5m (W) x 0.9m (H) with necessary grounding connections</p>	
19.2	<p>It should be capable of withstanding a minimum load of 500Kg (EUT size max 1 x 1 x 1m).</p>	
19.3	<p>Test bench will be made from low reflectivity material (Dielectric constant ≤ 1.25)</p>	
19.4	<p>Test bench diagram:</p> 	
19.5	<p>The ground plane on top of the table should be self-grounding and the table easily movable on wheels with brakes</p>	

3. General and Technical Specifications for Shielded CS Lab:

SI. No.	DESCRIPTION	CS lab	Comply /not comply /deviation
1.	Nominal dimensions of shielding: (L x W x H)	(6.0 x 4 x 3) m	
2.	Frequency	10 kHz to 18 GHz	
3.	Self-Supporting and modular in Construction	YES	
4.	a) Size of RF Shielded door, clear opening (W x H)	(1.5 x 2.1) m - 1No. or nearest size	
	b) Door maintenance kit	One	
5.	Emergency light on door	One	
6.	Raised floor with false flooring	YES Office type furnishing on the ceiling and walls should be provided or comfortable environmental or operator in the Control Room.	
7.	Brass Grounding Bolt	YES	
8.	Honey comb wave guide Air vents for HVAC	Suppliers to provide the correct number & size	
9.	Power line Filters for Instrumentation systems and EUT		
	a) 415V, 63 Amp/Phase, 50Hz, 3Ø, 4 line	1 No.	
	b) 230V, 32 Amp, 50Hz, 1Ø	1 No.	
	c) 115V, 32 Amp/Phase, 400Hz, 3Ø, 4 line	1 No.	
	d) DC Power Supply 500V, 100Amp, 2 line	1 No.	
*10	Access panels: each (400 x 400) mm or nearest size and each AP fitted with 4 N, 6 FSMA & 2 BNC connectors.	* 3 Nos.	
11.	Electrical cabling / Wiring by the supplier with their sockets, connectors etc.	YES	
12.	Shielding effectiveness test as per MIL-STD-285 / IEEE 299	YES	
13.	Lighting	Supplier to provide details	
14.	Any other item/ accessory required shall be provided by the supplier		

Note: * Correct quantity, size and type will be decided after Chamber and system suppliers interacting with each other.

4. General and Technical Specifications for Shielded Amplifier Room:

SI. No.	DESCRIPTION	Amplifier Room	Comply /not comply /deviation
1.	Nominal dimensions of shielding: (L x W x H) m	(3.0 x 4 x 3) m	
2.	Frequency	10 KHz to 18 GHZ	
3.	Self-Supporting and modular in Construction	YES	
4.	a) Size of RF Shielded door, clear opening (W x H)	(0.9 x 2.1) m – 1NO.	

	H) (Between Control Room and Amplifier Room)		
	b) Door maintenance kit	1 No.	
5.	Emergency light on door	1 No.	
6.	Raised floor with false flooring	YES	
7.	Brass Grounding Bolt	YES	
8.	Honey comb wave guide Air vents for HVAC	Suppliers to provide the correct number & size	
9.	Power line Filters for lighting & Instrumentation		
	a) 230V / 415V, 63 Amp/Phase, 50Hz, 3Ø, 4 line	1 No.	
	b) 230V, 16Amp, 50Hz, 1Ø	1 No.	
*10.	Access panels: each (400 x 400) mm or nearest size and each AP fitted with 4 N, 6 FSMA & 2 BNC connectors.	* 2 Nos	
11.	Electrical cabling / Wiring by the supplier with their sockets, connectors etc.	YES	
12.	Shielding effectiveness test as per MIL-STD-285 / IEEE 299	YES	
13.	Lighting	Suppliers to provide details	
14.	Any other item/ accessory required shall be provided by the supplier		

Note: * Correct quantity, size and type will be decided after Chamber and system suppliers interacting with each other.

5. General and Technical Specifications for Shielded Control Room cum CE lab:

Sl. No.	DESCRIPTION	Control Room	Comply /not comply /deviation
1.	Nominal dimensions of shielding: (L x W x H) m	(8 x 4 x 3) m	
2.	Frequency	10 kHz to 18 GHz	
3.	Self-Supporting and modular in Construction	YES	
4.	a) Size of RF Shielded door, clear opening (W x H)	(1.5 x 2.1) m – 1No.	
	b) Door maintenance kit	2 Nos.	
5.	Emergency light on door	One	
6.	Raised floor with false flooring	YES <ul style="list-style-type: none"> • Antistatic PVC finishing or high pressure laminated coating should be provided. • Office type furnishing on the ceiling and walls should be provided for comfortable environmental for operator in the Control Room. 	
8.	Honey comb wave guide Air vents for	Suppliers to provide the	

	HVAC	correct number and size	
9.	Power line Filters for lighting & Instrumentation systems		
	a) 415V, 63 Amp/Phase, 50Hz, 3Ø, 4 line	1 No.	
	b) 230V, 32 Amp, 50Hz, 1Ø	1 No.	
	c) 115V, 32 Amp/Phase, 400Hz, 3Ø, 4 line	1 No.	
	d) DC Power Supply 500V, 100Amp, 2 line	1 No.	
*10.	Access panels: each (400 x 400) mm or nearest size and each AP fitted with 4 N, 6 FSMA & 2 BNC connectors.	* 2 Nos.	
11.	Electrical cabling / Wiring by the supplier with their sockets, connectors etc.	YES	
12.	Shielding effectiveness test as per MIL-STD-285 / IEEE 299	YES	
13.	Lighting	Suppliers to provide details	
14.	Any other item/ accessory required shall be provided by the supplier		

Note: *Correct quantity, size and type will be decided after Chamber and system suppliers interacting with each other.

6. Acceptance test requirement of chamber

Vendor should arrange testing and certification from the accredited/certified EMC testing laboratories for acceptance. The performance of the chamber should not be affected by corrosion, oxidation and mechanical expansion.

Sr. No.	Description	Comply /not comply /deviation									
1	The anechoic chamber performance parameters should be demonstrated and report to be submitted during following stages of chamber installations at customer site										
1.1	Shielding effectiveness of shielded chamber with absorbers										
1.2	Shielding effectiveness with power filter panels, CCTV, audio, video, communication set & telephone/intercom system, illumination system and honeycomb waveguide air vent etc										
2	The following performance parameters should be demonstrated										
2.1	Full compliance with the requirements of MIL-STD-461 F/G w.r.t coverage and reflectivity for all absorbers										
2.2	Shielding Effectiveness Performance: When tested in accordance with any of the following standards: IEEE 299, MIL-STD-285, EN 50147-1, NSA 65-6 should provide or exceed following level of shielding Effectiveness										
	<table border="1"> <thead> <tr> <th>Frequency</th> <th>Field</th> <th>Attenuation</th> </tr> </thead> <tbody> <tr> <td>10 kHz 200 kHz</td> <td>Magnetic</td> <td>≥ 80 dB</td> </tr> <tr> <td>200 kHz to 1 MHz</td> <td>Magnetic</td> <td>≥ 100 dB</td> </tr> </tbody> </table>	Frequency	Field	Attenuation	10 kHz 200 kHz	Magnetic	≥ 80 dB	200 kHz to 1 MHz	Magnetic	≥ 100 dB	
Frequency	Field	Attenuation									
10 kHz 200 kHz	Magnetic	≥ 80 dB									
200 kHz to 1 MHz	Magnetic	≥ 100 dB									

		14 kHz to 400 MHz	Electric	≥ 110 dB		
		400 MHz to 1 GHz	Plane wave	≥ 110 dB		
		1 GHz to 10 GHz	Plane wave	≥ 110 dB		
		10 GHz to 18 GHz	Microwave	≥ 100 dB		
		18 GHz to 40 GHz	Microwave	≥ 90 dB		
2.3	Validation of Normalized Site Attenuation better than ± 3.5 dB , according to CISPR 16-1-4 Ed3.1 and ANSI C63.4 from 30 MHz – 1 GHz at 10 m and 3 m test distance for a quiet zone of 4m diameter and 2 m height					
2.4	Validation of Normalized Site Insertion loss (NSIL) ± 4dB from frequency range 9 KHz to 30 MHz in accordance with CISPR16-1-4 (upcoming edition to be inforce in near future).					
2.5	Validation of Site VSWR (1- 40 GHz) ≤ 5.5 dB at 3m according to CISPR 16-1-4 latest edition, for a quiet zone of 3 m diameter and 2 m height. Measurement of Site VSWR should be carried out from 1 GHz to18 GHz					
2.6	Validation of Field uniformity, according to IEC 61000-4-3, from 26 MHz- 18 GHz. Requirements up to 3m test range, for a vertical uniformity area of 1.5 x 1.5 m located from 0.8 m above the floor with 75% of the 16 test points within 0-6dB with floor absorbers in place					
2.7	Absorber Lined Shielded Enclosure (ALSE) performance validation as per CISPR 25 Annex. J from frequency range 150 KHz to 1 GHz					
2.8	The anechoic chamber shall be compliant with the requirements of MIL-STD-461 F/G					
2.9	Ambient shall be ≤ 6 dB compared to the limit lines specified in the international standards throughout the frequency range					
2.10	Any other additional parameter as per CISPR16-1-4 and MIL STD 461F/G.					
3	Shielding Effectiveness Tests to be conducted					
3.1	Shielding Effectiveness Tests to be conducted at all the locations where the doors and Access panels are installed					
4	Shielding Effectiveness Measurement					
4.1	Shielding Effectiveness Measurement at following spot frequencies: 10 kHz, 100 kHz, 1 MHz, 10 MHz, 30 MHz, 100 MHz, 500 MHz, 1GHz, 10GHz, 18GHz, 26.5GHz, 34GHz, 40GHz. A leakage test at 433 MHz shall be performed					

7. Documentation Details

	Documentation	
1	Operation and maintenance manuals for chambers and doors	
2	Operation and maintenance manuals for fire detection system	
3	Operation and maintenance manuals for audio / video monitoring and communication system	
4	Operation and maintenance manuals for turn table	
5	Operation and maintenance manuals for the rest of the subsystems supplied by the vendor as part of the total system	
6	Detailed block diagram with cable layouts for the anechoic chamber, Control room & Amplifier room	
7	Controlled software supplied for Turntable, CCTV etc should be	

	compatible and supported by the major Automated EMI/ EMC Measurement software and vice versa	
8	Calibration certificate for equipment's / accessories supplied	
9	All documents in the form of printed hard copy as well as in electronic media	



8. Chamber schematic drawing with nominal dimensions

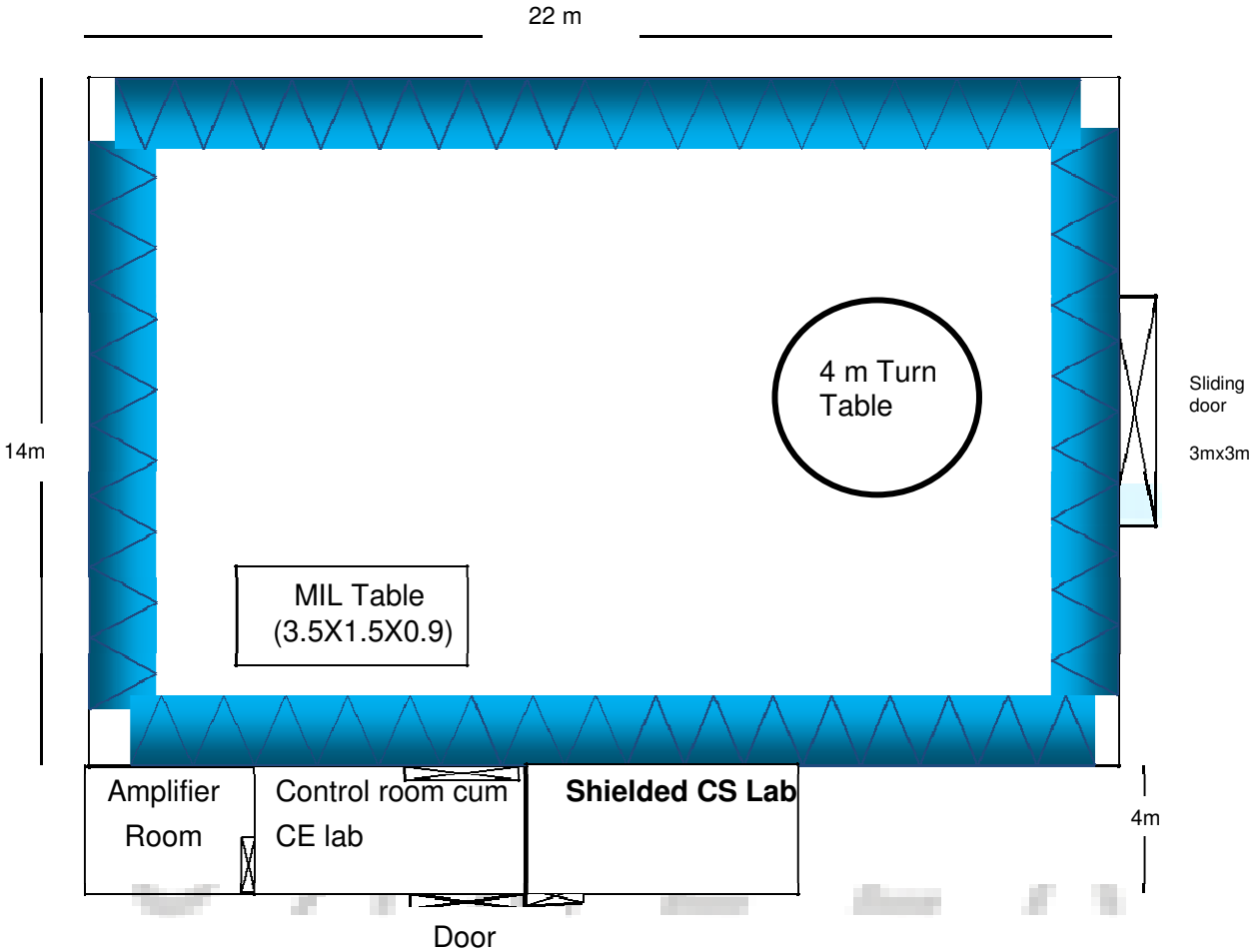
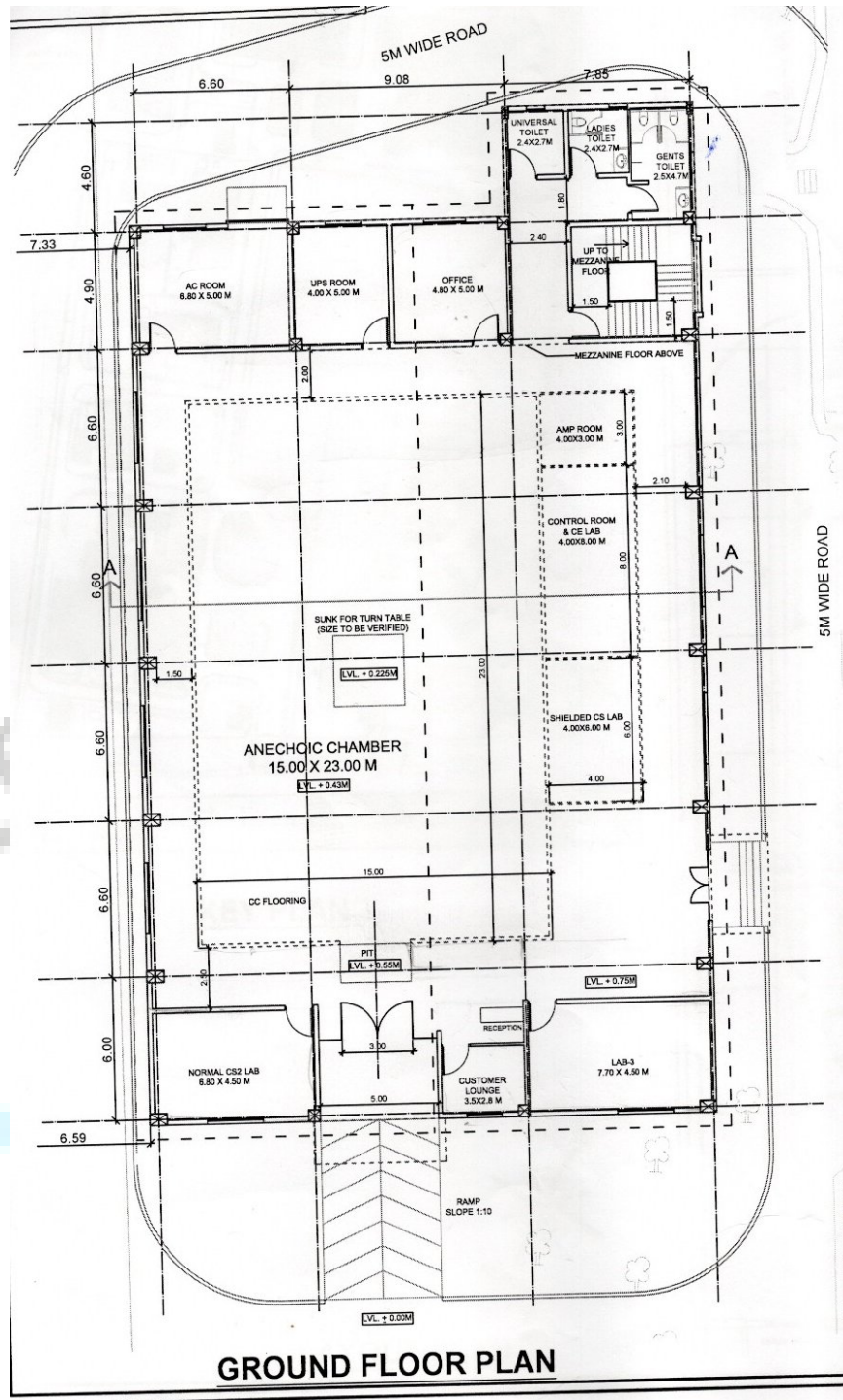


Figure: EMC Anechoic Chamber, Absorber lining & Door locations

Ground floor plan of EMC Anechoic Chamber building



9. Technical Terms and Conditions

1.	Detailed Requirements for Installation and Commissioning to be provided along with the quotation	<ol style="list-style-type: none"> 1. The chamber vendor shall meet all the technical requirements of Test & Measurement system supplier w.r.t access panels/feed through panels at the time of installation of Test & Measurement system. 2. The Chamber Vendor shall provide the following details: <ul style="list-style-type: none"> • Floor load, evenness requirements of the floor of host building including supporting columns to install the chamber taking into consideration of 5-ton weight of military systems, all loading details as surface loads, lines load and spot loads have to be foreseen. • Relative position of 4.0 m turn table in the chamber • Relative position of the chamber in the host building. • Provide comments on adequacy and suitability of floor plan of host building (Floor plan is given in annexure VI). • Details of HVAC requirements, such as no. of ducts, duct location, capacity of air conditioning plant and duct connectivity to the chamber in case of the duct being connected below the building ground level. 3. Any other special requirements for installation of chamber 	Comply /not comply /deviation
2.	Review/ Inspection Requirements	<ul style="list-style-type: none"> • Design Review • Final on-site anechoic chamber verification test • Site Inspection and acceptance should be based on mutually agreed terms and conditions • Please provide acceptance test procedure for our review one month in advance. 	Comply /not comply /deviation
3.	Execution Milestones	<ul style="list-style-type: none"> • Successful completion of Design Review • Successful installation of the chamber • Successful installation of anechoic material and confirming to the specified reflectivity by standard test method. • Successful Completion of onsite acceptance test and Site Training. 	Comply /not comply /deviation
4.	Warranty clause	Warranty for all the non-moving parts of anechoic chamber like absorbers, shielding material etc. will be for a period of 10 years. During this period if any deterioration in the above mentioned material or drifting in the chamber parameters is observed, it should be replaced free of cost. Other than these materials moving parts like shielded doors and electrically powered systems like camera, CCTV system, turntable, audio communication system, fire detection system, power line filters and any other item should be warranted for 3 years. During the warranty period (3 years), the vendor must depute a trained person to look after and carry out routine maintenance	Comply /not comply /deviation

		like cleaning, door alignment, mechanical setting of the mast and TT etc.	
5.	Compliance certificates	<ul style="list-style-type: none"> Supplier shall give compliance certificate for all points listed above for each & every specification. Supplier will support the specifications with data sheet approved by accredited lab wherever possible. Supplier will list quantity of each item in bill of material. SAMEER reserve the right to disqualify any of the material based on specification, make, model & country of origin. Supplier should have installed successfully minimum one number of anechoic chamber in India of similar dimension. SAMEER's technical team can visit the site to see the performance of chamber and seek the feedback about service. Supplier's own qualified & certified personnel under the supervision of OEM (minimum one person) should be available during installation of chamber to monitor the progress on installation & ensure the quality of workmanship from start to end of the project. 	Comply /not comply /deviation
6.	AMC	<ul style="list-style-type: none"> The vendor shall take up AMC contract for a minimum period of 3 years after completion of warranty period (to be quoted as separate item). An annual maintenance contract shall include: <ul style="list-style-type: none"> Two onsite visits per year for preventive maintenance, test, verification and calibration of the items like door, TT, Connectors and electrically powered equipment like Mast & TT controller, optical connections etc. and further replacement of faulty and worn-out parts. The service engineer should visit SAMEER, Navi Mumbai within 24 hrs after registering the breakdown call as and when required. AMC charges shall be quoted as part of tender per year after completion of warranty period. 	Comply /not comply /deviation
7.	Submission of drawing	<ul style="list-style-type: none"> Vendor is required to submit detailed drawing of the chamber to SAMEER within one month from the date of purchase order. The fabrication of the chamber may commence after getting feedback comments from SAMEER. All civil work required for installation of the chamber will be done by SAMEER; Vendor to provide exact civil requirements, the civil drawings prepared by SAMEER would be made available to the vendor for their feedback and comments. 	Comply /not comply /deviation
8.	Training	Training for SAMEER scientists for operation and maintenance of the chamber including verification of the chamber parameters and mechanical setting of the antenna mast & TT for 5 working days shall be provided at SAMEER Navi Mumbai.	Comply /not comply /deviation
9.	Chamber Supplier	Chamber Supplier needs to be certified for ISO 9001	

	Quality System and Experience	or equivalent standard quality management system and provide / show proof of experiences in supplying & executing successfully such similar 10 m chamber projects by providing at least 5 such references in the bid submission	
10	Technical Bid documents	<ul style="list-style-type: none"> • Vendor must attach detailed performance test certificate of at least one EMC anechoic chamber of similar dimensions, recently installed by them (preferably in India), along with technical bid • In technical bid, vendor must mention manufacturer, model /type, detailed specification along with test certificate from accredited laboratory for various items like absorber, Doors, CCTV system, Power line filters etc • Vendor may be invited for giving presentation of their technical proposal with numerical simulations & measurement results 	

10. List of deliverables

Sr. No	Equipment required	Description	Qty.
RF Shielded Anechoic chamber			
1.	RF Shielded Anechoic chamber	<p>To perform full compliance EMI and EMS measurements according to the most commonly used international standards.</p> <p>External shield to shield dimension: LxWxH [m]: 22x14x09 (± 5%) to enable to test the Equipment up to the size of SUV/Car with equipment inside the chamber measuring approx. (4.0 x 3.0 x 3.0) m (L X B X H) in the chamber area</p> <p>Quiet zone Ø4 m - 2m H</p> <p>NSA: better than ± 3.5 dB at 3 and 10 m distance</p> <p>SVSWR: Site VSWR (1- 40 GHz) ≤ 5.5 dB at 3m</p> <p>Shielding and structure: Shielding modules Steel works</p> <p>Provision for humidity protection under chamber Floor, walls , ceiling with absorbers Chamber angle finishing</p>	01 No.
2.	Doors	<p>Sliding Door of Anechoic Chamber:</p> <p>Purpose: Movement of EUT.</p> <p>Type: Single/ Double leaf Sliding Door fitted with absorbers.</p> <p>Dimension: 3000mm x 3000mm (WxH) or any other nearest standard size.</p>	01 No.
3.	RF Shielding Access Panel	All coaxial RF cables, electrical / data / control signals and fiber optics will enter the shielded chambers through access panels ensuring complete interconnectivity and high shielding	

		effectiveness performance	
		Access panels between Anechoic chamber and control room	As listed in technical specifications
		Access panels between Amplifier room and Main chamber	As listed in technical specifications
		Access panels between Control room & Amplifier room	As listed in technical specifications
4.	Power line filters	All the power lines entering the RF shielded Anechoic Chamber should be adequately filtered to preserve the specified shielding effectiveness of the facility.	As listed in technical specifications
5.	Signal and telephone filters	Any communication from outside to inside and vice-versa between chamber and control room must be realized through signal line filters. Analog phone filter, ISDN phone filter, Signal filters 20 lines - 48 V - 500mA - 140 KHz	1 each
6.	Electrical installation	Electrical cabling / Wiring by the supplier with their sockets, connectors etc.	Suppliers to provide details
7.	Honeycombs	Honeycombs 400x400mm- 40 GHz	
8.	Fire detection	Air sampling network and wave guide Fire detection outside analyzer	
9.	Raised floor and ground plane	False Floor Internal SAC Ground plane ≥ 2 mm hot galvanized steel	
10.	Automation	Antenna mast with MIL kit	2 Nos.
		Controller	2 Nos.
		Turntable with MIL kit	1 No.
11.	Test table	Contact system integrated in the floor	Suppliers to provide details
		Self grounding table 3.5 m (L) x 1.5 m (W) x 0.9 m (H) with wheels –Hot galvanized ground plane 2 mm with load of 500 Kg	1 No.
		EMI transparent table for table top equipments up to 100Kg EUTs 1.5m (L) x 1.0m (W) x 0.8m(H)	1 No.
12.	Optical converters	LAN 10/100 Mbit Ethernet	Suppliers to provide details
		RS232 up to 1Mbit/s	Suppliers to provide details
		USB 2.0/480 Mbits	Suppliers to provide details
Control Room:			
Shielding effectiveness from 10 KHz to 18 GHz, Dimension (L x W x H): 8 x 4 x 3 m			
1.	Shielding and structure	Shielding modules	01 No.
		Provision for humidity protection	01 No.
2.	Doors	Purpose: Required for EUT movement/personnel entry from outside into the shielded control room. Door Dimension (W x H): 1500 mm x 2100 mm with pneumatic operation	01 No.
		Door stopper	01 No.
		Test in progress lamp indication located above door outside	01 No.

		Door maintenance kit	02 Nos.
		Wooden ramp manual 200 Kg	01 No.
3.	Penetration Panels PP (wall) 400 x 400 mm	PPs with list of connectors , correct quantity, size and type will be decided after mutual interaction with chamber and system suppliers	02 Nos.
4.	Power filters: insertion loss 100 dB from 14 KHz to 40 GHz and grounding point	All the power lines entering the RF shielded control room should be adequately filtered to preserve the specified shielding effectiveness of the facility.	As listed in technical specifications
		Grounding point close to power filters	01 No.
5.	Signal and Telephone filters	Analog telephone filter	01 No.
6.	Electrical installations	Electrical cabling / Wiring by the supplier with their sockets, connectors etc. Sockets should be compatible with Indian power system.	Suppliers to provide details and quantity
7.	Honeycombs	Honeycombs 400x400-40 GHz	
8.	Fire detection	Fire detection system	01 No.
9.	Any other item/ accessory required shall be provided by the supplier		
Amplifier Room:			
Shielding effectiveness from 10 KHz to 18 GHz, Dimension(L x W x H): 3.0 x 4 x 3m			
1.	Shielding and structure	Shielding modules	01 No.
		Provision for humidity protection	01 No.
2.	Doors	Purpose: Required for instrumentation/personnel entry from outside into the shielded control room. Door Dimension (W x H): 900 mm x 2100 mm with pneumatic operation	01 No.
		Door stopper	01 No.
		Test in progress lamp indication located above door outside	01 No.
		Door maintenance kit	02 No.
3.	Penetration Panels PP (wall) 400 x 400 mm	PPs with list of connectors , correct quantity , size and type will be decided after mutual interaction with chamber and system suppliers	02 Nos.
4.	Power filters: insertion loss 100 dB from 14 KHz to 40 GHz and grounding point	All the power lines entering the RF shielded control room should be adequately filtered to preserve the specified shielding effectiveness of the facility.	As listed in technical specifications
		Grounding point close to power filters	01 No.
5.	Signal and Telephone filters	Analog telephone filter	01 No.
6.	Electrical installations	Electrical cabling / Wiring by the supplier with their sockets, connectors etc. Sockets should be compatible with Indian power system.	Suppliers to provide details and quantity
7.	Honeycombs	Honeycombs 400x400-40 GHz	
8.	Fire detection	Fire detection system	01 No.
9.	Any other item/ accessory required shall be provided by the supplier		
Monitoring system			
1.	Camera	Camera inclusive of power supply(battery option) with sufficient length of cable, and pan/tilt unit	01 No.
2.	Controller	Camera controller, converter(LWL-VGA), multi channel	01 No. each
3.	Record system	Splitter, recorder/web server	01 No.
4.	Display	TV 42" LCD/LED	02 No.

5.	Accessories	<ul style="list-style-type: none"> • Wooden tripod/AV system/PT unit • Wall holder • Audio system intercom & monitoring, Full duplex • Rack 19” 	
Spare parts, Documentation, necessary items:			
1.	Spare parts	The list of consumable and spare parts not covered under warranty need to be specified along with the quantity and submitted along with the bid.	As required
2.	Documentation	Installation, operation and maintenance manual, 2 paper copy and 2 soft copies on CD.	2 Nos. hard copies and 2 soft copies
3.	Any other item/ accessory required shall be provided by the supplier		
Shielding Effectiveness kit and Field Uniformity Calibration mast:			
1.	Shielding Effectiveness kit	Portable shielding effectiveness kit as per the technical details mentioned at Sl.No: 21	01 set
2.	Field Uniformity Calibration mast	Field Uniformity Calibration mast with remote control system & accessories to carry Uniform Field Area (UFA) calibration as per IEC 61000-4-3	01 No.

S A M E E R



**COMMERCIAL TERMS &
CONDITIONS**

S A M P L E R

SECTION- III

1. Commercial & Other Terms and Conditions

Vendor to state Complied / Not Complied – Deviations if any in the column

Sr.#	DESCRIPTION	DESCRIPTION	Comply /not comply /deviation
a.	PRICES	<p>a) For Import Order: Prices quoted should be on FCA (nearest Int. Airport at shipper’s country), Name of the Airport should be mentioned clearly.</p> <p>b) For Local Order: Prices should include delivery charges up to SAMEER EMC Center, CBD Belapur, Navi Mumbai. Any additional charges, taxes and levies should be clearly mentioned. In the event of a Purchase Order, it will be the responsibility of the supplier to pay whatever charges are payable to different agencies in their country. The purchaser will not pay any charges other than the agreed price as per the contract.</p>	
b	TAXES, DUTIES AND LEVIES APPLICABLE	<p>(Existing applicable rates should be mentioned)</p> <p>1.</p> <p>2.</p> <p>3.</p> <p>4.</p> <p>5.</p>	
c.	PACKING	<p>The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit. In order to maintain safety of the equipment, we prefer to have wooden crating with adequate cushion inside for transportation of any goods. The Material to be dispatched with International standard packing to withstand Rigors, and to avoid any transit damages.</p>	

d.	FREIGHT AND INSURANCE	<p>a) For Local Order: To be arranged by supplier. All the items shall be delivered to SAMEER-EMC Centre, CBD Belapur Navi Mumbai after obtaining a shipping release in the appropriate pro-forma from the purchaser. The Vendor shall be fully responsible for the safe delivery of all the items from and to SAMEER – EMC Center Navi Mumbai and shall satisfy the purchaser that adequate measures have been taken for the same.</p> <p>b) For Import Order: Will be arranged by SAMEER from FCA International Airport.</p>	
e.	ANY OTHER APPLICABLE CHARGES	SUPPLIER TO SPECIFY	
f.	MODE OF DELIVERY	<p>a) For Local Order : By road</p> <p>b) For Import Order: By Air/ Sea</p>	
g.	DELIVERY SCHEDULE	<p>All the material needs to be delivered within six months from the date of purchase order.</p> <p>The installation, commissioning and handing over of all the deliverables under the scope of purchase order need to be completed within eight months from the date of purchase order.</p> <p>The delivery may be deferred by few weeks for readiness of the civil structure. The vendor needs to seek clearance from SAMEER for shipment of the material</p>	
h.	WARRANTY	<p>3Years</p> <p>If standard warranty does not cover 3 years period, additional charges to comply the 3 years warranty may be quoted in price bid under warranty section</p>	
i.	AMC Charges	AMC charges shall be quoted as part of tender on per year basis after completion of warranty period.	
j.	PAYMENT TERMS	<p>a. For Import order: 90 % against Irrevocable Letter of Credit or Sight Draft and balance 10 % through wire transfer after acceptance and validation of chamber at SAMEER EMC Centre Navi Mumbai.</p> <p>b. For Local order: 75 % after delivery followed by inspection balance 25 % against Test, Installation & acceptance (whichever is applicable) of material / consignment, at SAMEER- EMC Centre Navi Mumbai.</p> <p>Note: In case, if there is any need for advance payment, it may be considered as per applicable rules subject to submission of bank guarantee from any Public Sector Indian bank.</p>	

k.	VALIDITY OF QUOTATION	180 DAYS MIN FROM THE DUE DATE.	
l.	Tender Fee (Including GST)	Tender document may be purchased from the Accounts Section of SAMEER, Mumbai on cash payment or by Demand Draft from any commercial bank of India, drawn in favour of “ Society for Applied Microwave Electronics Engineering and Research ”. If the Tender document is downloaded from website, then the Tender Fee is not applicable .	
m.	Earnest Money Deposit (EMD)	<p>a. Earnest Money Deposit (EMD) should be submitted in the form of Account Payee Demand Draft, Fixed Deposit Receipt, Banker’s Cheque or Bank Guarantee from any commercial bank of India, drawn in favour of “Society for Applied Microwave Electronics Engineering and Research”.</p> <p>b. For exemption, please refer SECTION I, 2 d</p> <p>c. In lieu of EMD, vendor may submit “Bid security Declaration” on their letterhead. (vendor should mention the applicable option from above in the Remark column)</p>	
n.	PERFORMANCE SECURTY	The successful bidder has to give Security Deposit in the form of an Account Payee Demand Draft / Fixed Deposit Receipt from an Indian commercial bank / Bank Guarantee from an Indian commercial bank / a counter Letter of Credit (LC) from our bankers (in case of foreign order), for 3 % of Order Value, immediately after receiving the purchase order. Performance Security should remain valid for a period of sixty days beyond the date of all contractual obligations including warranty obligations.	
o.	EXEMPTION FOR CUSTOM DUTY AND EXCISE DUTY	SAMEER is registered with Department of Scientific and Industrial Research (DSIR) for the purpose of availing custom duty exemption in terms of Government of India Notification No. 51/96-customs amended to 24/2007-customs dated 1 st March 2007. {approx. 5.20% duty is applicable under this notification (5 % Basic + cess / surcharge)} and central excise duty exemption in terms of Government Notification no. 10/97-central excise amended to 16/2007-central excise dated 1 st March 2007.	
p.	JURISDICTION	MUMBAI	



Formats for Price bid and forms

S A M E E R

SECTION- IV

Format for Price Bid (in INR)

IMPORTANT

Vendor is required to submit the price bid in the given format on their LETTER HEAD.
One copy of the price bid without the financial figure should be enclosed along with the Technical Bid.

1. Format for Price Bid (in INR)

IMPORTANT

Vendor is required to submit the price bid in the given format on their LETTER HEAD.
One copy of the price bid without the financial figure should be enclosed along with the Technical Bid.

ITEM	DESCRIPTION	QUANTITY	RATE IN INR	PRICE IN INR
I	Supply, Installation, Commissioning & Validation of RF Shielded Semi Anechoic Chamber comply with Section-II (Technical specifications), Technical terms and conditions and Section-III (Commercial & other terms and conditions).			
II	Additional charges to comply three years warranty (If standard warranty does not cover 3 years period)			
III	AMC Charges for first year after expiring of 3 years warranty.			
IV	AMC Charges for second year after expiring of 3 years warranty.			
V	AMC Charges for third year after expiring of 3 years warranty.			
VI	OTHER CHARGES			
1.	TAXES AND DUTIES APPLICABLE ON ITEMS			
	I			
	II			
	III			
	IV			
2.	FREIGHT from Vendor's manufacturing facility to SAMEER-EMC Centre Navi Mumbai			
3.	INSURANCE			
4.	ADDITIONAL CHARGES IF ANY			
	TOTAL AMOUNT			
	TOTAL AMOUNT (IN WORDS)			
Vendor's Signature:		Seal:		

2. Format for Price Bid (in Foreign currency)

IMPORTANT

Vendor is required to submit the price bid in the given format on their LETTER HEAD.
One copy of the price bid without the financial figure should be enclosed along with the Technical Bid.

ITEM	DESCRIPTION	QUANTITY	RATE IN (Name of currency)	PRICE IN (Name of currency)
I				
II				
III				
IV	Additional charges to comply three years warranty (If standard warranty does not cover 3 years period)			
V	AMC Charges per year			
VI	ADDITIONAL CHARGES IF ANY			
VII	FCA CHARGES (Name of the Int. Airport) (From Vendor's manufacturing/shipping facility to Manufacturer's country's Intl. Airport)			
	TOTAL AMOUNT			
	TOTAL AMOUNT (IN WORDS)			
	Vendor's Signature:		Seal:	

Annexure – I

1. Company Details

1	Name of the Company	
2.	Detailed Address for Correspondence	
3.	Contact Person's Name with Telephone and Email Details (To whom all references shall be made regarding this Tender)	
4.	Year of Registration/ Incorporation	
5.	Date of Commencement of Business	
6.	Address of the Headquarters	
7.	Number of Employees as on tender submitting date	
8.	List of similar projects/systems developed for other clients	
9.	Other Relevant Information	
10.	<p>Mandatory Supporting Documents</p> <p>a) Enclose a copy of Registration document (in case of a company not being a Government body/undertaking/PSU), Certificate of Incorporation from Registrar of Companies (ROC)</p> <p>b) Relevant sections of Memorandum of Association of the company or filings to the stock exchanges to indicate the nature of business of the company</p>	

2. Financial Details of The Organization

	FY 2017-18	FY 2018-19	FY 2019-20
Revenue (in INR Crores)			
Profit before Tax (in INR Crores)			
Revenue from similar Project/system Developed/delivered (in INR Crores)			
Other Relevant Information			
Mandatory Supporting Documents:			
a. Auditor Certified financial statements for the Last three financial years; 2017-18, 2018-19, and 2019-20 (Please include only the sections on P&L, revenue and the assets, not the entire balance sheet.)			
b. Audited financial statements certified by the Company auditor for the 2019-20 (in case the auditor certified statement for 2018-19 is not available)			

Annexure – II

1. Prior Experiences

Following details for each similar project/system developed/delivered should be attached. The photograph of the product/system developed and feedback letter from client may be also be attached.

1	Name of Client / Firm:	
2	Address and contact details	
3	Nature of Assignment	
4	Description of Project / system along with technical specs	
5	Current Status	
6.	Approx. value of the Assignment /job provided by your firm under the contract (in Rupees):	
7.	Mandatory Supporting Documents: a) Letter from the client duly indicating the salient points like cost, period, scope of project and successful completion of the projects	
8.	Complete details of the scope of the project shall be provided to indicate the relevance to the Qualification criterion.	

Annexure – III

1. Declaration Letter

(Company letterhead)

[Date]

To,

Director General,
SAMEER, IIT Campus, Powai
Mumbai – 400 076

Dear Sir,

Ref: Tender Notice for Selection of Service Provider for supplying of RF Anechoic chamber and Associated Laboratories at SAMEER-EMC Centre, Navi Mumbai.

Having examined the Tender document, the receipt of which is hereby duly acknowledged, we, the undersigned, intend to submit qualification requirements in response to the Tender document for RF Anechoic chamber and Associated Laboratories

We attach hereto the response as required by the tender, which constitutes our proposal.

Primary and Secondary contacts for our company are:

	Primary	Secondary
Contact person Name		
Title		
Company Name		
Address		
Phone No.		
Mobile No.		
Email id		

We confirm that the information contained in this response or any part thereof, including its exhibits and other documents or instruments delivered or to be delivered to SAMEER is true, accurate verifiable and complete. This response includes all information necessary to ensure that the statements therein do not in whole or in part mislead the department in its short-listing process.

We fully understand and agree to comply that on verification, if any of the information provided here is found to be misleading the short listing process, we are liable to be dismissed from the selection process or termination of the contract during the project, if selected to do so, for RF Anechoic chamber and Associated Laboratories.

We are not involved in any major litigation that may have an impact of affecting or compromising the delivery of services as required under this contract

We are not black-listed by any Government Organisation/ Public Sector Undertaking

We agree for unconditional acceptance of all the terms and conditions set out in the Tender document.

It is hereby confirmed that I/We are entitled to act on behalf of our company/ corporation/ firm/ organization and empowered to sign this document as well as such other documents, which may be required in this connection.

Dated this Day of 2020

(Signature)

(In the capacity of)

(Name)

Duly authorized to sign the Tender Response for and on behalf of:

(Name and Address of Company) Seal/Stamp of bidder

S A M E E R

Witness Signature:

Witness Name:

Witness Address:

Annexure – IV

1. Board Resolution form

CERTIFICATE AS TO AUTHORISED SIGNATORIES

I,, the Company Secretary of
....., certify that who signed
the above Bid is authorized to do so and bind the company by authority of its board / governing body.

Date:

Signature:

(Name)

(Company Seal)

S A M E E R

Annexure – V

Bid Security Declaration Form

Dated:

To,

Registrar,
Society for Applied Microwave Electronics Engineering and Research
IIT Campus, Powai,
Mumbai 400076

Sir,

I, the undersigned, declare that:

1. I am duly authorised to submit bid and undertakings in response to your tender No._____.
2. I understand that the bidders are required to submit Bid Security of the prescribed amount, while submitting bids in response to tender enquiries of the Society for Applied Microwave Electronics Engineering and Research (SAMEER).
3. As an alternative to the Bid Security, I hereby declare that my firm, which is submitting the current bid, will be suspended for the period of time specified in the request for bid document or for a period of three years if no such period of time is specified in the request for bid document, from being eligible to submit bids for contracts with SAMEER,
 - i. if we withdraw or modify the bid during the period of validity (including the extended period of validity) **or**
 - ii. If we fail to sign the contract, or to submit the performance security before the deadline prescribed in the request for bid document or in the communication sent by SAMEER.

Signature with seal:

Name: _____

Designation _____

Name of the firm _____

Place _____

Annexure – VI

Floor plan of Chamber building

