Fax :

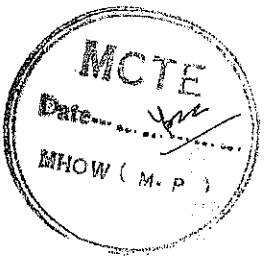
Military College of Telecommunication Engineering, Mhow, Indore MP – 453441

File No from Fee.

01 Feb 2021

REQUEST FOR INFORMATION FROM VENDORS FOR ESTABLISHMENT OF TWO POINT 5G TEST BED AT MCTE

1. **Description**. 5G is proposed as a futuristic communication network for Indian Army to be deployed for field and peace time communication along with its numerous use cases. In order to get a deep understanding of 5G network and its use cases it is required that a test bed be established to understand the 5G services, enablers and applications. It is thus proposed to establish a two point 5G test bed at Military College of Telecommunication Engineering (MCTE), Mhow and thus build understanding as well as development of interfaces, devices and application ecosystem for further proliferation of 5G networks in Indian Army. Initially the network must showcase commercial application like smart building, vehicle tracking and data communication with IoT sensor grid. After the successful implementation of test bed at MCTE the 5G network is likely to be placed for facilitating state of the art mobile communication to troops operating in Counter Insurgency environment, rugged terrains of mountains and jungles overlooking Line of Control/ International Border. The project envisages to facilitate high grade and reliable mobile communication with a layer of security for voice, data and video communication so as to make the traffic secure, and make the network free from possibility of intrusion &interception, prevent unauthorised access from unauthorised Base Stations and unauthorised/ fake subscribers. In addition to ensuring interoperability with existing Mobile Communication Networks, the Network is envisaged to be integrated to the Armed Forces communication infrastructure (current/ futuristic) in the zone to include Army owned EPABXs, MSPs, ATM switches, MPLS switches and Routers. The test bed is thus required to include two point 5G deployment with a 1Km coverage specified here as Point A and Point B.



2. This Request for Information (RFI) consists of two parts as indicated below:-

(a) Part I. The first part of the RFI incorporates operational characteristics and features that should be met by the equipment. Few important technical parameters of the proposed equipment are also mentioned. Additional vendor requirements are also listed.

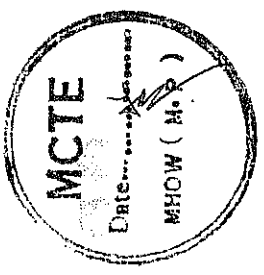
(b) Part II. The second part of the RFI states the methodology of seeking response of vendors. **Submission of incomplete response format will render the vendor liable for rejection.**

PART I

3. This project will include the following:-

(a) Placement of 01 x 5G BTS (gNB) along with IoT gateway, WiFi gateway, radio radiating head (RRH), Micro cell radio, Macro cell radio, Midhaul radio, Backhaul radio, aggregation router and fiber management system at Point A. This system should be capable to provide coverage upto 1 km and must provide connectivity to WiFi, IoT devices, 5G mobile handsets, e-Tabs, Drones, Helmet mounted cameras, wireless sensor network and all this connectivity to converge on a single router placed at 5G tower capable of OFC connectivity and microwave backhaul connectivity.

(b) Placement of 01 x 5G BTS (gNB) along with IoT gateway, WiFi gateway, radio radiating head (RRH), Micro cell radio, Macro cell radio, Midhaul radio, Backhaul radio, aggregation router and fiber management system at Point B. This system should be capable to provide coverage upto 1Km i.e cell radius of 0.35Km and must provide connectivity to WiFi, IoT devices, 5G mobile handsets, e-Tabs, Drones, Helmet mounted cameras, wireless sensor network and all this connectivity to converge on a single router placed at tower capable of OFC connectivity and microwave backhaul connectivity.



(c) Point B also has to have core network of 5G to include servers for controlling IoT, WiFi and firewall system. Point B besides from being a 5G BTS will also be holding the Cloud, computing and mobility management to include session management, security management and enterprise management software modules.

(d) 5G core network deployed at Point A/B will consists of the following network functions (NF) forming part of 5G network and as enumerated:-

(i) Authentication Server Function (AUSF)
(ii) Core Access and Mobility Management Function (AMF)
(iii) Data network (DN), e.g. operator services
(iv) Structured Data Storage network function (SDSF)
(v) Unstructured Data Storage network function (UDSF)
(vi) Network Exposure Function (NEF)
(vii) NF Repository Function (NRF)
(viii) Policy Control function (PCF)
(ix) Session Management Function (SMF)
(x) Unified Data Management (UDM)
(xi) User plane Function (UPF)
(xii) Application Function (AF)

5. **Vendor Parameters**. The vendor should be a registered company in India. It should have a Registered Office, Operations and Maintenance support team in India. The OEMs of the proposed product and services must also have their registered office, operations, maintenance and repair infrastructure in India. The vendor and the OEMs must be technically competent, financially sound and should have adequate infrastructure to set up, maintain and support the proposed networks as per following criteria :-

(a) The vendor and OEMs should have a strong financial base. Balance sheets and Profit/Loss statements for the past three years should be submitted, clearly highlighting the annual turnover.

(b) Vendor/ OEMs should have implemented / been involved as product OEM in a minimum of one cellular network in India. Track record in implementing Mobile Cellular Communication System (MCCS) networks along with list of successful installation in India and aboard should be provided. Give out case studies and experiences faced during implementation of the network, elsewhere. The condition for participation of OEM of unique/special products like special shelters etc will be dealt with separately.

(c) Vendor and OEM Should have a well-established base and technically competent maintenance and repair facility to maintain the network. Submit the support and repair escalation matrix along with maintenance methodology as asked in the RFI with additional details as relevant.

(d) The responder shall sign an agreement with OEM to manufacture / distribute the offered equipment in India and supply of spares for at least 10 years after commissioning of the network. Any obsolescence of product or plan to close the support for the product shall be mentioned.

(e) Vendor shall confirm that copy of all agreement that he shall be signing with OEMs/ Sub vendors for execution of the Turnkey solution to deliver the desired SLAs will be discussed with user and submitted to the user on conclusion of the same. OEMs shall also confirm that the proposal has been well communicated to them and that they comply with the requirements as projected in the RFI or later(RFP, Contract/ any other time) during all clarifications given before the issue of RFP.

(f) Vendor must have capability to offer comprehensive onsite warranty of two years and 08 years comprehensive support under AMC on expiry of warranty for a minimum period of eight years.

(g) Vendor and OEM of all major components must be an ISO accredited company.

(h) Vendor must confirm that there are no Patent / legal issues that might become hindrance in implementation of the solution at later stages.

(i) Must highlight and obtain the Government clearances as applicable.

6. Vendors should confirm that the following conditions are acceptable:-

(a) Categorisation. Establishment of two point 5G test bed at MCTE can be supplied under Buy Indian IDDM. If the proposed categorisation is not feasible, the vendor should state the desired categorisation with reasons.

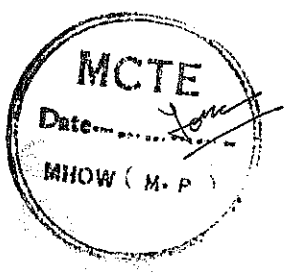
(b) The solicitation of offers will be as per "Single Stage-Two Bid System". It would imply that a "Request for Proposal" would be issued soliciting the technical and commercial offers together, but in two separate sealed envelopes. The validity of commercial offers would be at least 18 months from the date of submitting of offers.

(c) The technical offers would be evaluated by a Technical Evaluation Committee (TEC) to check its compliance with RFP.

(d) The equipment of all TEC cleared vendors would be put through a trial evaluation at a suitable location nominated by the buyer on a "No Cost No Commitment" basis. A staff evaluation would be carried out by SHQ to analyse the result of field evaluation and shortlist the equipment for introduction into service.

(e) Amongst the vendors cleared by GS evaluation, a Contract Negotiations Committee would decide the lowest cost bidder (L1) and conclude the appropriate contract.

(f) Vendor would be bound to provide product support for the entire life span of the ~~LTE network with IoMT sensor grid~~, which includes technical support, spares and maintenance tools/ software.



(g) The vendor would be required to accept the general conditions of contract given in the Standard Contract Document at Chapter VII of DAP placed on www.mod.nic.in.

(h) An integrity pact along with appropriate IPBG is a mandatory requirement in the instant case (Refer Annexure I to Appendix M of Schedule (I).

(j) Performance-cum-Warranty Bond both equal to 10% value of the contract is required to be submitted after signing of contract.

(k) ToT (if applicable) as applicable to categorisation would be need to be confirmed by Vendors.

PART – II

7. Procedure for Response

(a) Response to RFI (**Appendix A**) will be submitted at under mentioned address

Brigadier General Staff
Military College of Telecommunication Engineering,
Mhow, Indore
MP – 453441
Fax :
Email : manlik.687a@gov.in

(b) In addition to providing details about company, details about the exact product meeting other generic technical specifications should also be carefully filled. Additional literature on the product can also be attached with the form.

(c) Last date of intimation of willingness to participate and acceptance of filled form **(Appendix A)** is two weeks from date of issue of RFI. In case the responses are delivered by courier or through authorised company representatives.

(d) In accordance with the provisions of the DAP 2020 a vendor interaction will be conducted with all interested parties ~~in sixth week from the date of issue of RFI~~ subsequent to receipt of proposals. Exact date and time of the vendor interaction will be intimated to all companies who intimate their willingness to participate.

MCTE
Date.....
MHOW (M. P)

8. The Government of India invites responses to this request only from Indian Vendors who have tie ups with Original Equipment Manufacturers (OEM)/Authorised Vendors/Government Sponsored Export Agencies (applicable in the case of countries where domestic laws do not permit direct export by OEMs). The end user of the equipment is the Indian Armed Forces (name of user service).

9. This information is being issued with no financial commitment and the Ministry of Defence reserves the right to change or vary any part thereof at any stage. The Government of India also reserves the right to withdraw it should it be so necessary at any stage. The acquisition process would be carried out under the provisions of DAP-2020.

Brigadier Dinesh Tiwari

Brigadier General Staff
Military College of Telecommunication Engineering, Mhow, Indore
MP – 453441

MCTE
Date...
MHOW M P

Appendix A

(Refer to Para 7 of MCTE File No _____)

INFORMATION PERFORMA

(INDIAN VENDORS)

1. **Name of the Vendor/Company/Firm**

_____

_____

(Company profile, in brief, to be attached)

2. **Type (Tick the relevant category).**

(a) Original Equipment Manufacturer (OEM) Yes/No (

b) Authorised Vendor of foreign Firm Yes/No (Attach details, if yes)

(c) Other (give specific details).

_____

3. **Contact Details.**

Postal Address:_____

_____

City : _____ State : _____

Pin Code : _____ Tele : _____

Fax : _____URL/Website : _____

4. **Local Branch/Liaison Office in Delhi (India) (if any).**

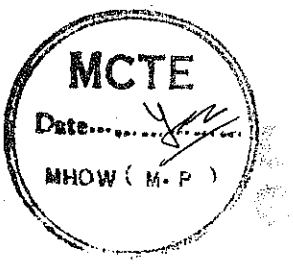
Name & Address : _____

_____

Pin Code _____

Tele : _____

Fax _____



5. **Financial Details.**

(a) Category of Industry (Large/Medium/small scale) :_____

(b) Annual Turnover: _____(in INR)

(c) Number of employees in firm: _____

(d) Details of manufacturing infrastructure: _____

_____

(e) Earlier contracts with Indian Ministry of Defence/Government agencies :-

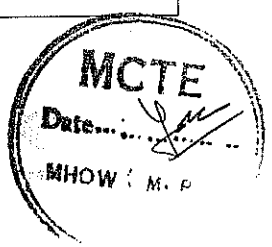
Contract Number	Equipment	Quantity	Cost

6. **Certification by Quality Assurance Organization.**

Name of Agency	Certificate	Applicable from (Date & Year)	Valid till (date & Year)

7. **Details of Registration.**

Agency	Registration No	Validity (Date)	Equipment
DGS&D			
DGQA/DGAQA			
OFB			
DRDO			
DRDO Any other Government Agency			



Appendix A Continued

8. **Membership of FICCI/ASSOCHAM/CH or other Industrial Associations.**

Name of Organistion	Membership Number

9. **Equipment / Product Profile** (to be submitted for each product separately)

(a) Name of Product : _____

(Should be given category wise for e.g. all products under night vision devices to be mentioned together)

(b) Description (attach technical literature) :

_____

(c) Whether OEM or Integrator :

_____

(d) Name and address of Foreign collaborator (if any) :

_____

(e) Industrial Licence Number : _____

(f) Indigenous component of the product (in percentage) :_____

(g) Status (in Service/Design development state) : _____

(h) Production capacity per annum : _____

(j) Countries/agencies where equipment supplied earlier(give details of quantity Supplied : _____

(k) Estimated price of the equipment _____

10. Alternatives for meeting the objectives of the equipment set forth in the RFI.

11. Any other relevant information : _____

12. Declaration. It is certified that the above information is true and any changes will be intimated within five (05) working days of occurrence.

(Authorised Signatory)