

Inviting Budgetary Quotations for Setting up of Access Lab in Telecom Engineering Centre(TEC), New Delhi.

Access Lab Division of Telecommunications Engineering Centre (TEC), New Delhi is in the process of 'Establishment of Access Lab in TEC, New Delhi' for Testing and Certification of User Equipment/Devices like Mobile Handsets, Dongles, Tablets etc. for 3GPP/ETSI Standards Protocol Conformance (PCT), Radio Conformance (RFCT) & Radio Resource Management (RRM), inter Radio Access Technology (iRAT) handover for heterogeneous Wireless Network and also ensuring compliance to RED Directives and the Test schedule & Test Procedures (TSTP) must be as per recommendations of Global Certification Forum (GCF) in a regulatory framework.

The Scope of the Access Lab is given below: -

- a. The lab shall be equipped to have testing facilities for UEs/devices like Mobile handsets, USB interface devices, like Dongles, Tablets and any other inbuilt UEs/Devices.
- b. The scope includes testing facilities of technologies LTE, LTE advanced, LTE Advanced PRO along with iRAT handover with 2G, 3G & 4G facility. Additionally, the testing shall also include a facility for LTE unlicensed band and LTE for Internet of things (IoT).
- c. Conformance - Radio Frequency, Radio Resource Management and Protocol testing of UEs/Device as per standards and specifications of ETSI/3GPP (latest version) and Test schedule & Test Procedures (TSTP) as per recommendations of (GCF) in a regulatory framework.
- d. The lab testing of UEs/Devices shall be under real network testing conditions wherein the "network" shall be generated by simulators & all test schedules and test procedures shall be performed as per the latest GCF recommendations and must also include the testing for technical Specifications as specified in the TEC ER's (if any for the UEs/Devices). GCF refers to the test schedules and test procedures in terms of Technical Specifications of 3GPP-Work items- Test cases. Apart from this compliance with Radio Equipment Directive (R.E.D) shall also be met.
- e. The test equipment should be compatible to test UEs/Devices for both TDD and FDD technologies for India relevant frequency bands (Band 40 and 41 for TDD and band 1, 3, 8, 28 for FDD at present).
- f. The above testing facility shall be of the Latest Release Version of 3GPP i.e Release 15, subsequently which may be upgraded to support 3GPP Release 16.
- g. The test equipment should comply with 100% test cases of GCF in respect of RF conformance, Protocol Conformance, Radio Resource Management (RRM) as per the latest release of 3GPP technical specifications and also compliance of essential requirements of R.E.D for LTE, LTE Advanced, LTE Advanced PRO UEs.
- h. One RF Shielded Chamber for preventing the spurious RF effect on testing results shall be provided for the Access Lab.
- i. The Lab shall also be equipped with a testing facility for conformance testing of Access Nodes like NodeB, eNodeB, BTS & BSC with available ETSI/3GPP Standards.
- j. The Lab shall also be equipped with a testing facility for conformance testing of Wireless Access Nodes like Wi-Fi and Bluetooth Devices with available ETSI EN Standards

The interested Original Equipment Manufacturer (OEM)/ Systems Integrator (SI)/ Vendor/ Channel partners are requested to submit the budgetary quotes along with solution details meeting the above scope requirements as per the attached format for quotes. They are also requested to offer their comments and its financial implications.

The budgetary quotations may be sent to email id: director-al.tec-dot@gov.in and ddglte.tec@gov.in latest by 25.04.2021.

Budgetary Price Quote for Access Lab

LTE TECHNOLOGIES CONFORMANCE TESTING

UNIT NO.	Hardware equipment & Software		Quantity	Cost/ Landed Price	Applicable Custom Duty	Tax (GST)	Delivery Charges to TEC Premises	Total Cost
1	2	3	4	5	6	7	8	9
1	1	Supply of all the required Hardware equipment* & Software * for performing the Protocol Conformance Testing, Radio Conformance testing, Radio Resource Management Testing, iRAT handover testing with 2G, 3G & 4G technology for User Equipments/Devices, based on latest available ETSI/ 3GPP Standards up to Release 15 and upgradeable to Release 16 for LTE, LTE Advance, LTE Advance Pro, LTE - for Unlicensed band & LTE- IoT technologies as per GCF available work-items and test cases for the frequency bands supported as per NFAP (National Frequency Allocation Plan) of India. The Hardware equipment and Software quoted should have a Comprehensive Warranty of 2 Years including updates & upgrades if any during this period. The Test Equipment shall itself comply to the RED Directives as well as be able to meet the test of RED compliance of UEs/devices.	HW & SW	1				
	1a	<i>DUT for conduction of above testings</i>	HW	1				
	1b	<i>Table Top sized Anechoic Shielded enclosure /chamber</i>	HW	1				
	2	<i>O & M Hardware and Software of Access Lab Conformance Testers with 2 Years Warranty</i>						

a	<i>Desktop for O & M of Test Eqpt. & Test Certification Records Management (HARDWARE) incl Desktop Licensed (Software) MS ver-10 & latest MS Office; i7 intel 9th Gen, 16 GB RAM, 2 TB HDD, Mouse, Key Board, 17' Monitor, External HDD 2TB</i>	HW & SW	1					
b	<i>Good Quality Coloured Laser Printer</i>	HW & SW	1					
c	<i>Good Quality 40" LED TV Display Screen</i>	HW	1					
d	<i>4 hours Backup Supply for O & M Desktop/OEM Hardware</i>	HW	1					
3	Calibration Charges							
i	<i>Required yearly Calibration Charges for Warranty period of 2 years</i>	Calibration	2 years					
4	Manpower Charges							
i	<i>Required One Specialized & One Support Manpower during Warranty period of 2 years</i>	Manpower	2 x 2 years					
5	Training, Report & Certificate Generation							
a	<i>Generation of TEC Certification Certificate (in TEC Format)</i>	Certificate Generation Software						
b	<i>Reports Generation from obtained results of various testing</i>	Report Generation Software						
c	<i>Training on Access Lab LTE HW equipments & SW in Indian Lab at site for 5 days; And at International Labs or at OEM HQ Lab or at Manufacturing Location - 7 days duration for 3 Persons including providing Documents & Manuals and its delivery to TEC. The Boarding and Lodging shall be born by buyer i.e TEC</i>	Training & Documentaion						
6	Five Year Annual Maintainance Contract LTE Conformance							

a	<i>First year AMC Charges after 2 Years of Warranty</i>	Include Spares, HWs, SWs, Updates, Upgrades, due Calibration & Manpower							
b	<i>Second year AMC Charges</i>								
c	<i>Third year AMC Charges</i>								
d	<i>Fourth year AMC Charges</i>								
e	<i>Fifth year AMC Charges</i>								

***Note:** *The test equipment and Software shall not have reached its end of life or shall not be reaching its end of life in the next 7 years.*

Access Node: NodeB, eNodeB, BTS & BSC CONFORMANCE TESTING

UNIT NO.	Hardware equipment & Software			Quantity	Cost/ Landed Price	Applicable Custom Duty	Tax (GST)	Delivery Charges to TEC Premises	Total Cost
1	2	3	4	5	6	7	8	9	
2	1	Supply of all the required Hardware equipment* & Software * for performing the Conformance Testing of NodeB, eNodeB, BTS & BSC Equipments/Devices, based on latest available ETSI/ 3GPP Standards and frequency bands supported as per NFAP (National Frequency Allocation Plan) of India, and atleast covering the Specs of available TEC ERs of respective equipment/device. The Hardware equipment and Software quoted should have a Comprehensive Warranty of 2 Years including updates & upgrades if any during this period. The Test Equipment shall itself comply to the RED Directives as well as be able to meet the test of RED compliance of UEs/devices.	HW & SW	1					
	a	<i>DUT for BTS/ BSC/ NodeB & eNodeB</i>	HW	1 each					
	b	<i>Anechoic Shielded Chamber</i>	HW	1					
	2	<i>O & M Hardware and Software of Access Lab Conformance Testers with 2 Years Warranty</i>							
	a	<i>Desktop for O & M of Test Eqpt. & Test Certification Records Management (HARDWARE) incl Desktop Licensed (Software) MS ver-10 & latest MS Office; i7 intel 9th Gen, 16 GB RAM, 2 TB HDD, Mouse, Key Board, 17' Monitor, External HDD 2TB</i>	HW & SW	1					
	b	<i>Good Quality Coloured Laser Printer</i>	HW & SW	1					
	c	<i>Good Quality 40" LED TV Display Screen</i>	HW	1					
	d	<i>4 hours Backup Supply for O & M Desktop/OEM Hardware</i>	HW	1					
	3	<i>Calibration Charges</i>							

i	<i>Required yearly Calibration Charges for Warranty period of 2 years</i>	Calibration	2 years						
4	Manpower Charges								
i	<i>Required One Specialized & One Support Manpower during Warranty period of 2 years</i>	Manpower	2 x 2 years						
5	Training, Report & Certificate Generation								
a	<i>Generation of TEC Certification Certificate (in TEC Format)</i>	Certificate Generation Software							
b	<i>Reports Generation from obtained results of various testing</i>	Report Generation Software							
c	<i>Training on Access Lab BTS/ BSC/ NodeB & eNodeB HW equipments & SW in Indian Lab at site for 5 days; And at International Labs or at OEM HQ Lab or at Manufacturing Location - 7 days duration for 3 Persons including providing Documents & Manuals and its delivery to TEC. The Boarding and Lodging shall be born by buyer i.e TEC</i>	Training & Documentaion							
6	Five Year Annual Maintainance Contract for BTS/ BSC/ NodeB & eNodeB								
a	<i>First year AMC Charges after 2 Years of Warranty</i>	Include Spares, HWs, SWs, Updates, Upgardes, due Calibration & Manpower							
b	<i>Second year AMC Charges</i>								
c	<i>Third year AMC Charges</i>								
d	<i>Fourth year AMC Charges</i>								
e	<i>Fifth year AMC Charges</i>								

***Note:** *The test equipment and Software shall not have reached its end of life or shall not be reaching its end of life in the next 7 years.*

Wireless Access Node: Wi-Fi CONFORMANCE TESTING AND BLUETOOTH CONFORMANCE TESTING									
UNIT NO.	Hardware equipment & Software			Quantity	Cost/Landed Price	Applicable Custom Duty	Tax (GST)	Delivery Charges to TEC Premises	Total Cost
1	2	3	4	5	6	7	8	9	
3	1	Supply of all the required Hardware equipment* & Software * for performing the Wi-Fi Conformance Testing of Access Point/Node/User equipment/device testing and the Bluetooth Conformance Testing of device/equipment against the latest available ETSI EN 300 328, EN 301 893 & EN 302 502 Standards and atleast covering the Specs of available TEC ERs of respective equipment/device. The Hardware equipment and Software quoted should have a Comprehensive Warranty of 2 Years including updates & upgrades if any during this period. The Test Equipment shall itself comply to the RED Directives as well as be able to meet the test of RED compliance of devices/equipment.	HW & SW	1					
	a	<i>DUT for each Wi- Fi (Access point/NODE), Wi-Fi (inbuilt) & Bluetooth</i>	HW	1 each					
	b	<i>Anechoic Shielded Chamber if any required</i>	HW	1					
	2	<i>O & M Hardware and Software of Access Lab Conformance Testers with 2 Years Warranty</i>							
	a	<i>Laptop for O & M of Test Eqpt. & Test Certification Records Management (HARDWARE) incl Laptop Licensed (Software) MS ver-10 & latest MS Office; i7 intel 9th Gen, 16 GB RAM, 2 TB HDD, Mouse, Key Board, 17' Monitor, External HDD 2TB</i>	HW & SW	1					
	b	<i>Good Quality Coloured Laser Printer</i>	HW & SW	1					
	c	<i>Good Quality 40" LED TV Display Screen</i>	HW	1					
	d	<i>4 hours Backup Supply for O & M Desktop/OEM Hardware</i>	HW	1					
	3	<i>Calibration Charges</i>							

i	<i>Required yearly Calibration Charges for Warranty period of 2 years</i>	Calibration	2 years						
4	Manpower Charges								
i	<i>Required One Specialized & One Support Manpower during Warranty period of 2 years</i>	Manpower	2 x 2 years						
5	Training, Report & Certificate Generation								
a	<i>Generation of TEC Certification Certificate (in TEC Format)</i>	Certificate Generation Software							
b	<i>Reports Generation from obtained results of various testing</i>	Report Generation Software							
c	<i>Training on Access Lab BTS/ BSC/ NodeB & eNodeB HW equipments & SW in Indian Lab at site for 5 days; And at International Labs or at OEM HQ Lab or at Manufacturing Location - 7 days duration for 3 Persons including providing Documents & Manuals and its delivery to TEC. The Boarding and Lodging shall be born by buyer i.e TEC</i>	Training & Documentaion							
6	Five Year Annual Maintainance Contract for BTS/ BSC/ NodeB & eNodeB								
a	<i>First year AMC Charges after 2 Years of Warranty</i>	<i>Include Spares, HWs, SWs, Updates, Upgardes, due Calibration & Manpower</i>							
b	<i>Second year AMC Charges</i>								
c	<i>Third year AMC Charges</i>								
d	<i>Fourth year AMC Charges</i>								
e	<i>Fifth year AMC Charges</i>								

***Note:** *The test equipment and Software shall not have reached its end of life or shall not be reaching its end of life in the next 7 years.*

Miscellaneous items required in the Access Lab										
UNIT NO.	Miscellaneous Items in the Access Lab			Quantity	Cost/ Landed Price in INR	Applicable Custom Duty	Tax (GST)	Delivery Charges to TEC Premises	Total Cost	
1	2			3	4	5	6	7	8	
	Accessories and Furniture									
4	1	<i>LAN Switch as per Spec.</i>		HW & SW	1					
	2	<i>Laptop for Lab as per Spec.</i>		HW & SW	2					
	3	<i>Multi Media Projector as per Spec.</i>		HW & SW	1					
	4	<i>Smart Board</i>		HW & SW	1					
	5	<i>CCTV with Two Camera for Lab</i>		HW & SW	1					
	6	<i>8 Seat Conference Table & Chairs</i>		HW	1					
	7	<i>Revolving Chair for O & M/ RF Chamber</i>		HW	6					
	8	<i>Steel Almirah for Store/ O & M room</i>		HW	6					
	9	<i>Computer Table & Chair</i>		HW	4					
	Manpower Requirement for Coordination, In House Supervision, Data Storage and House Keeping									
	1	<i>Office Assistant (Secretarial + Certificate Generation)</i>		Coordination	1					
	2	<i>Office Assistant (Operations and Data Santity and Data Storage/Records)</i>		Operation	1					
	3	<i>Office Assistant (Lab Security)</i>		Computer Works	1					
	4	<i>Multi Tasking Staff (MTS)</i>		Staff	3					

