

**MODEL CONTRACT BOND**

*[On a non-judicial stamp paper of Rs.100/-]*

This bond is made with Telecommunication Engineering Centre (hereinafter referred to as the "TEC") by Mr./Ms. \_\_\_\_\_ (hereinafter referred to as the "Research Associate").

**Effective Date:**

This bond shall be effective from \_\_\_\_\_ day of \_\_\_\_\_ 20xx.

**Declaration:**

I, Mr./Ms. \_\_\_\_\_ hereby acknowledge and bind myself to the extent that I would serve TEC for a period of one year (extendable by another one year based on the assessment of output/outcome) and in any case not less than twelve months from the date of joining. I also agree that in case I terminate the engagement within a period of twelve months of my joining, I shall pay Rs. 1,00,000/- (Rupees One Lac only) to TEC. I also agree to serve a notice of minimum of one month or forfeit one months' remuneration in lieu of notice period if I decide to terminate the engagement with TEC.

**Witness:**

1) Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Contact No: \_\_\_\_\_

\_\_\_\_\_

2) Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Contact No.: \_\_\_\_\_

\_\_\_\_\_


(Signature of the Authorized Officer of TEC)

(Signature of Research Associate)



Annexure - V

**ASSESSMENT OF DIVISION-WISE PRESENT REQUIREMENT OF RESEARCH ASSOCIATES**

Sl. No.	Division (Field/Area)	Requirement of RA	Specific Areas	Expected Outcome
1.	Fixed Access (FA)	01	<ul style="list-style-type: none"><li>• Fixed Access Telecommunication Technology viz. Passive Optical Network (PON); point-to-point optical, and copper-based digital subscriber line technologies (DSL), including ADSL, VDSL, HDSL, SHDSL, G.fast and MGfast, etc.</li><li>• High-Capacity Optical Fibre Cable (OFC) Network Technology</li><li>• Broadband access over metallic conductors and OFC</li><li>• Green Telecom, renewable energy efficient telecommunication systems</li></ul>	<ul style="list-style-type: none"><li>• Research papers and technical reports in the Fixed Access Technology and Green Telecom areas through extensive literature study and consultations</li><li>• Inputs on the activities / work items undertaken by national / international standards organisations i.e. ITU, IEEE, ETSI, ISO, BIS, TSDSI, etc. and Telecommunication groups in the areas of Fixed Access Technology and Green Telecom systems for development of new products / test guides.</li><li>• Assisting in the and Annual Action Plan activities of FA Division.</li></ul>
2.	Future Networks (FN)	01	<ul style="list-style-type: none"><li>• Research in Operational aspects of service provision and telecommunication management for ITS-T SG2 working area.</li><li>• Study and research on 5G Small Cell deployment challenges and solutions.</li><li>• Research on 5G use cases in Smart Healthcare, Smart Transportation, Smart Water</li><li>• Research on Common Duct &amp; Post infrastructure along public pathways.</li><li>• Research on New</li></ul>	<ul style="list-style-type: none"><li>• Research and prepare a report on 5G use cases in Smart Healthcare Smart Transportation, Smart Water.</li><li>• Report on Common duct</li><li>• Study on New technological developments in 5G, AL, ML, Big Data, IoT, Blockchain etc.</li><li>• Inputs on Operational aspects of service provision and telecommunication management for ITU-T.</li></ul> 

			technologies such as AL, ML, Big Data, IoT, Blockchain etc.	
3.	Information Technology (IT)	01	<ul style="list-style-type: none"> <li>• Cloud computing, Quantum Computing, NFV, Data Centre, National Timing Synchronisation Plan, Routing Devices, Ethernet/IP Switching Devices, Network Security Products.</li> <li>• Development of intra TEC portal on LAN to share knowledge among TEC officers to work as institutional memory, Digitization of Sub DDC and DCC process for Divisions.</li> </ul>	<ul style="list-style-type: none"> <li>• Study Paper on Quantum Computing and Cloud infrastructure, Analysis of issues involving revision of GR and ER</li> <li>• Creation of TEC intranet portal</li> </ul>
4.	Internet of Things (IoT)	02	Assisting in Technical report related work, IoT experience center/ incubation center and related works.	As M2M/IoT is an emerging technology therefore outcome will be expected in line with the progress of work in M2M/IoT working groups and associated work
5.	Standardization (SD)	01	<ul style="list-style-type: none"> <li>• Standardization and pre-standardization work of the telecom and related Information and Communication Technology sector.</li> <li>• Coordination with other standardization bodies like Bureau of Indian Standards (BIS), TSDSI etc. and other external Ministries/ departments.</li> </ul>	<ul style="list-style-type: none"> <li>• RA is expected to study various Standardization and pre-standardization work of the telecom and related Information and Communication Technology sector.</li> <li>• RA is expected to contribute for formulation of policy for ratification/adoption of TSDSI and other International standards into National Standards</li> </ul>
6.	Telecom Security (TS)	01	<ul style="list-style-type: none"> <li>• Security lab related activities [Establishing the Security Test lab in TEC. The lab</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding of Security Testing tools, Analysis of reports, Analysis of Security including both known and</li> </ul>

			<p>will have the capability of performing Security Testing of Telecom Network elements along with end user devices, Continuous analysis of vulnerabilities in DUT and dynamically varying the test scenarios]</p> <ul style="list-style-type: none"> <li>• Security Audit of End User devices in TEC [activities include strengthen of the Cyber Security Posture of various DoT units/ Organizations, System Security audit of various End User devices , study and examination of new techniques for discovering the security vulnerabilities in end User devices of officials especially those handling security related works etc.]</li> </ul>	<p>unknown vulnerabilities, Creating of new test cases</p> <ul style="list-style-type: none"> <li>• Understanding of Security Vulnerabilities associated with end User devices, Analysis of newly discovered vulnerabilities associated with end user devices, Updating the Security auditing procedures as per latest discovered vulnerabilities</li> </ul>
7.	Next Generation Network (NGN)	01	<ul style="list-style-type: none"> <li>• Study the usage of new technologies/ AI</li> <li>• Study/secondary research in respect of technologies being adopted, policies being adopted, and best practices being followed</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of minutes/ briefs/ records of discussions etc in respect of the consultation sessions/ meetings held.</li> <li>• Matters related to creation &amp; maintenance of repository of standards/ contributions/ ERs/ IRs/ GRs/ TSTP etc.</li> <li>• Study of various RFC and preparation of study paper</li> </ul>
8.	Quantum Technology (QT)	01	<ul style="list-style-type: none"> <li>• To participate and contribute to Standardization bodies like ITU, ISO.IEC, ETSI, etc. in QC Technologies products in any others like in QKD, PQC, QRNG, Single photon Detector and</li> </ul>	<ul style="list-style-type: none"> <li>• To prepare test guide for PQC, QRNG, Single photon Source, Detector, and software defined QC technologies performance metrics and bench marking, etc.</li> <li>• To update the standards</li> </ul>

			<p>Receivers, etc. or any other as required in Quantum Technologies.</p> <ul style="list-style-type: none"> <li>To develop standards for QRNG, Single photon Source, Detector, and software defined QC technologies performance metrics and benchmarking, etc.</li> </ul>	<p>documents like QKD, PQC, etc.</p> <ul style="list-style-type: none"> <li>To carry out Technology/Type approval as per the TEC GR.</li> <li>To conduct Proof of Concepts (PoC) and Pilot test trials in the Indian networks.</li> <li>To prepare a pan India plan 'IndiaQCI' for securing existing and upcoming communication assets using quantum communication networks.</li> </ul>
9.	<b>Conformity Assessment (CA)</b>	<b>01</b>	<ul style="list-style-type: none"> <li>CAB Designation, Scheme for Designation of Certification Bodies (CBs), MRA related work, Updation of database of NSWS online portal of CAB Designation</li> </ul>	<p>RA is expected:</p> <ul style="list-style-type: none"> <li>to assist in designation of Domestic Conformity Assessment Bodies(CABs),</li> <li>designation of Certification Bodies(CBs) after finalisation of CB scheme in collaboration with QCI,</li> <li>In formulation of policy and procedure for creation of a Monitoring unit for monitoring the performance of CABs and CBs as per TEC CAB/CB Designation Scheme,</li> <li>assist in preparation of database of NSWS CAB Designation Portal,</li> <li>Holding of Workshop, Webinars, conferences, seminars and presentations related to CAB Designation.</li> </ul>
	<b>Total</b>	<b>10</b>		

**NON-DISCLOSURE AGREEMENT**

*[On a non-judicial stamp paper of Rs. 100/-]*

This Non-Disclosure Agreement (hereinafter referred to as the “Agreement”) is entered into on ..... (the “Effective Date”), by and between ..... Telecommunication Engineering Centre (hereinafter referred to as “TEC”) and ....., with an address of .....(hereinafter referred to as “Research Associate”) (collectively referred to as the “Parties”).

**CONFIDENTIAL INFORMATION**

The Research Associate agrees not to disclose, copy, clown or modify any confidential information related to the TEC and agrees not to use any such information without obtaining prior written permission.

Confidential information refers to any data and/or information that is related to the TEC, in any form, including, but not limited to, oral or written. Such confidential information includes, but is not limited to, any information related to work in TEC such as discovery, processes, techniques, programs, knowledgebase, customer list, potential customers, all stakeholders, know-how or any other services related to TEC.

**RETURN OF CONFIDENTIAL INFORMATION**

The Research Associate agrees to return all the confidential information to TEC upon the termination of this Agreement.

**OWNERSHIP**

This Agreement is not transferable.

**GOVERNING LAW**

This agreement shall be governed by and construed in accordance with the laws of the Government of India and as defined on the Notification issued for engagement of Research Associate including subsequent amendments, if any.

*(Signature of the Authorized officer of TEC)*

*(Signature of Research Associate)*

*Name & Designation:*

*Name:*

*Date:*

*Date:*

Desired Work Experience

S. no.	Name of field/area where RA to be deployed	Requirements
1.	Fixed Access(FA)	<ul style="list-style-type: none"> <li>• Having working knowledge / expertise in the areas of Standardisation and Research in the Telecommunications and related ICT domains.</li> <li>• Having experience in preparation of technical documents, white papers and study papers on Fixed Access telecommunication technology and Green Telecom.</li> </ul>
2.	Future Networks (FN)	<ul style="list-style-type: none"> <li>• Having experience of working in telecom/ICT field and knowledge of general coding.</li> </ul>
3.	Information Technology (IT)	<ul style="list-style-type: none"> <li>• IT expert having extensive familiarity with information technology products, processes or procedures.</li> <li>• Having necessary technical skills and experience of development of intranet portal.</li> </ul>
4.	Internet of Things (IoT)	<ul style="list-style-type: none"> <li>• Having experience of working M2M/IoT related technologies.</li> <li>• Should have published at least one research paper in M2M/IoT related field in reputed journal.</li> </ul>
5.	Next Generation Network(NGN)	<ul style="list-style-type: none"> <li>• Having good knowledge of telecom emerging technologies.</li> </ul>
6.	Standardization(SD)	<ul style="list-style-type: none"> <li>• Having working knowledge / expertise in the areas Standardization and pre-standardization work of the telecom and related Information and Communication Technology sector.</li> </ul>
7.	Telecom Security (TS)	<ul style="list-style-type: none"> <li>• Minimum one year experience in the field of Cyber Security/Information Security</li> <li>• The candidate should be certified by GIAC/ISCI/ISASCA/CWNP/CEH or any other equivalent security certification</li> </ul>
8.	Quantum Technology (TC)	<ul style="list-style-type: none"> <li>• Having knowledge of working in Quantum Cryptography.</li> </ul>

9.	Confimity Assessment(CA)	<ul style="list-style-type: none"><li>• Having experience in instrumentation &amp; testing and good knowledge of Telecom technologies.</li></ul>
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