



Pakistan Telecommunication Authority

**Framework for Test and Development of Future
Technologies (Particularly Fifth Generation (5G)
Wireless Networks) In Pakistan**

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Prepared By
Licensing Division,
PTA HQs.

1. Introduction

- i. The rapid growth in mobile data traffic and consumer demand for enhanced mobile broadband experience have led to an increasing emphasis on the upcoming fifth generation of mobile technology (“5G”). Seen as a comprehensive wireless-access solution with the capacity to address the demands and requirements of mobile communication for IMT-2020 and beyond, it is projected that this technology will operate in a highly heterogeneous environment and provide ubiquitous connectivity for a wide range of devices, new applications and use cases.

- ii. The scope of IMT-2020 is much broader than previous generations of mobile broadband communication systems. Use cases foreseen include enhancement of the traditional mobile broadband scenarios as well as ultra-reliable and low latency communications along with other applications detailed at 1.3. The ITU's work in developing the specifications for IMT-2020 in close collaboration with the whole gamut of 5G stakeholders is now well underway along with the associated spectrum management and spectrum identification aspects. IMT-2020 will be a cornerstone for all of the activities related to attaining the goals in the 2030 Agenda for Sustainable Development.

- iii. This framework enables the use of radio spectrum on trial basis for non-commercial purposes to carry out trials for innovative use of radio frequency spectrum, apparatus/equipment and academic purposes including but not limited to scientific research, radio concepts and new systems demonstrations. In this regard, Government of Pakistan’s (GoP) Policy Directive based Framework invites all stakeholders for participation and in subject trials. The document contains the terms and conditions which shall be complied by an entity/organization which intends to conduct trials, demonstrate systems and/or services in

Pakistan based on IMT 2020 for the purpose of demonstrating readiness for new technologies in Standalone (SA) and/or Non-Standalone (NSA) environment including but not limited to identified use cases of eMBB (Enhanced Mobile Broadband), uRLLC (Ultra-reliable and Low-latency Communications) and MMTC (Massive-Machine Type Communications) through Slicing, Orchestration and Management techniques, application and use case development etc. for better spectral efficiency and improved overall user experience.

2. Legal Provisions

Section 4 of the GoP's "Policy Directive for Test and Development of Future Technologies Particularly for Fifth Generation (5G) Wireless Networks in Pakistan" requires PTA to issue a framework for temporary Test and Development licenses/authorizations which shall include criteria for the provision of Authorization, conditions, duration, and other terms and conditions.

3. Eligibility Criteria

An entity registered with SECP (Securities and Exchange Commission of Pakistan) and/or PEC (Pakistan Engineering Council), R&D Organizations and Academic Institutions, Devices and/or Equipment manufacturers etc. shall be eligible to apply for test and development Authorization.

4. Application Process

- i.** The applicant shall apply for Authorization to PTA in accordance with the checklist at **Annex-A** of this framework.

- ii. PTA will analyze the application and may require any clarification or additional information from the applicant in a timely manner.
- iii. Once the application is complete in all aspects, PTA may forward the same to Frequency Allocation Board, under the Telecom Act Section 5(2) (c) read with Section 43(5).

5. Issuance of Test & Development Authorization

- i. FAB shall assign the spectrum to be used for subject trials as per the Act which shall become effective from the date of Authorization issued by PTA.
- ii. Mere assignment of spectrum by FAB would not give right to the applicant for use of the same until Authorization is obtained from PTA.
- iii. Upon assignment of spectrum by FAB, PTA will issue Authorization to the applicant consistent with terms and conditions at S. No. 7 below.
- iv. Grant of Authorization will be subject to fulfillment of all the codal formalities by the applicant.

6. Trial Model

- i. The Test & Development Authorization allows an applicant to use spectrum on non-exclusive, non-commercial basis temporarily for the purposes mentioned at 1.3 of this framework.
- ii. Applicants can propose spectrum for trial purpose which could inter-alia, include but not limited to the requisite spectrum blocks in 2.6

GHz, 3.6 GHz and other relevant bands amenable to millimeter wave (mmW) propagation

7. Terms & Conditions

i. Applicable Fee and Charges

- a.** There is no regulatory fee associated with subject non-commercial trial permission or the spectrum usage for this purpose.
- b.** If the trial network is connected to any licensed network, the Test & Development authorization holder could be liable for any charges from host/operators incurred during the trial however, users/consumers will not be charged for any services offered during the trial.

ii. Participants

- a.** Subscriber antecedents of the trial participants will be intimated to PTA along with test connection details as and when required.
- b.** PTA may visit customer premises along with Authorization holder where trials are being conducted for the purpose of assessment and compliance.

iii. Period of Trial

- a.** The trial shall last for the period of three (03) to Six (06) months or as stated in the Authorization issued by PTA.
- b.** Any request for reissuance/extension in the period of trials must be submitted to PTA for prior written approval.
- c.** PTA may determine a reasonable period for the extension in trial period, taking into consideration the proposed trial set-up and request will be processed as per the regulatory and standard provisions.

iv. Trial Publicity

- a. Trial publicity material must be submitted to PTA for information, prior to the commencement of trials.
- b. Authorization holders must not make any claim to be a service provider/operator on the basis of the test and development authorization.

v. Interconnection with the Public Telephone Network

Any proposed interconnection to a public telephone network or any other telecommunication network licensed by PTA shall be intimated to PTA before such arrangements are finalized.

vi. Geographic Coverage of Trial

- a. The exact geographic coverage/ GPS location of the trial area must be intimated to PTA.
- b. Spectrum for the trial will be available only at the designated test sites subject to localized restrictions (if any) due to National security issues.

vii. Precautions against Interference

- a. The permission is issued on a non-interference and non-protection basis.
- b. The radio communications stations/networks shall be subject to inspection by PTA/FAB where deemed necessary.
- c. The Authorization holder shall take all precautions necessary to ensure that there is no interference with any licensed networks. In case such interference is reported, the trials will be suspended on immediate basis and necessary measures will be taken in coordination with FAB.

- d. The Authorization holder shall also take necessary steps, at its own cost and on a timely basis, to rectify any interference problems.
- e. The Authorization holder shall provide information on radio frequency measurements to ascertain interference issues, if required.

viii. Changes to Trial

- a. Any changes to the initial trial details proposed by the Authorization holder must be submitted to PTA for prior written approval. PTA, in consultation with FAB (where required), may impose any additional terms and conditions as deemed necessary.
- b. Any proposed change in the details of the system (equipment details, location, usage etc.) must be notified two weeks in advance.
- c. Any change from the approved details made without prior approval from PTA/FAB may render operation of the equipment illegal.
- d. PTA reserves the right to require changes to be made to the technical trial. PTA, in consultation with FAB (where required), will give the Authorization holder at least two weeks' notice to implement the changes.

ix. Provision of Information

The authorization holder shall provide PTA/FAB with any documents or information on a timely basis and at its own cost, for exercise of functions and duties under the Act. The Authorization holder will undertake that any such documents and information provided shall be true, accurate and complete.

x. COC/Type Approval for Import of Equipment/Devices

COC/Type approval will be required in line with type approval technical standard regulations 2017 for applicable equipment.

xi. LI Monitoring Compliance

Trial of 5G system must be LI compliant on following conditions.

- a. When Licensee provides such facility to its subscribers on trial basis.
- b. In case Authorization holder provides services to its clients and the trial network is connected with any licensed network.

xii. Compliance with conditions

- a. The Authorization holder shall comply in true letter and spirit with the trial conditions provided herein.
- b. Service scenarios, deployment models and migration details in the current infrastructure and convergence of services (if any) will be shared prior to commencement of trials.

xiii. Termination of Trial

Where the Authorization holder has breached any of the terms and conditions herein and/or has failed to comply or to take appropriate corrective action on its own expenses, PTA may terminate the Authorization after giving due notice to the Authorization holder.

- a. PTA/FAB shall not be held liable for any loss suffered by trial participants or the Authorization holder, in the event of termination.
- b. Where the Authorization holder wishes to terminate the trial, PTA shall be informed of the decision, including the rationale of

the decision, a written notice shall be served to PTA with copy to FAB.

- c. In the event the trial is terminated, the Authorization holder will be obliged to suspend services immediately and remove all equipment at the premises of trial within two weeks unless, a time extension is obtained from PTA.
- d. In case the band made available for test purposes is up for auction, the trial period will cease immediately before the date of publication IM/advertisement.
- e. Test results and findings to be shared with PTA at regular intervals, the same will be published in Annual reports of PTA.

Declaration:

Authorization holder hereby affirms that;

- i.** All the details given in this application form are correct to the best of my knowledge.
- ii.** The company I represent, will be responsible for compliance with the Terms and Conditions and have control and that I have due authority to make this declaration and to sign this application on its behalf.
- iii.** The Authorization will be used in compliance with all the requirements of PTA, FAB and laws of the land pertaining to National Security, Emissions, Operational Frequencies, Site clearance/registration, Technical, Power and Aerial characteristics of equipment/devices.
- iv.** The Authorization will be used to conduct operations in a manner that it will not be a safety hazard and will not be in contravention with any law, rule or regulation including terms and conditions of the Authorization.
- v.** Compliance will be ensured for “Protection from Health Related Effects of Radio Base Station Antenna Regulations 2008 and its amendments thereto.”
- vi.** The course, depth, position or mode of attachment of any apparatus forming part of Authorized system which may cause hazard to environment, community, public interest and human life will not be used.
- vii.** Any change in any parameter of the Authorized system will be intimated to the Authority within (07) days.

Full name: _____ Signature: _____

Designation: _____ Organizations: _____

Date: _____

Annexure-A

PAKISTAN TELECOMMUNICATION AUTHORITY

HEAD QUARTERS, F-5/1 ISLAMABAD

<http://www.pta.gov.pk>

CHECK LIST FORM

(TO BE SUBMITTED WITH THE APPLICATION)

Note: A separate application form is required for each project.

Items	Check (√) (if applicable)
1. Applicant(s) profile (containing); <ul style="list-style-type: none">• Company Name:• Company Registration Number:• Website:• Address:• Postcode:• Tel:• Mobile:• Email:	
2. Contact Person (Primary): <ul style="list-style-type: none">• Name:• Designation/Job Title:• Address:• Postcode:• Email:	
3. Contact Person(Secondary): <ul style="list-style-type: none">• Name:• Designation/Job Title:• Address:• Postcode:• Email:	
4. Registration/Certificate <ul style="list-style-type: none">a. Certificate of Incorporation duly certified by SECP or PEC Registration Certificate (where required).b. For Academia, HEC or Concerned Authority affiliation letter is required.c. For R&D and other aspirants, Copy of mandate/scope/charter under which the proposed trials will be conducted.	
5. Identification Documents	

<ul style="list-style-type: none"> • Attested copies of Computerized National Identity Card for Pakistani National shareholders/directors/governing body members, etc. (as applicable). • Attested copies of Passport of foreign nationals submitted through Ministry of Foreign Affairs. 	
<p>6. Statement on Word of honor/declaration on company letterhead that:</p> <ul style="list-style-type: none"> i. Test & Development authorization holder will be responsible for conducting the trials ensuring true compliance of terms and conditions of the authorization. ii. Test & Development authorization holder shall not utilize authorization for the purpose of illegal/immoral and out of scope activities. iii. We understand that failing to comply with (i) & (ii) above will lead to termination of the authorization and any other legal proceedings as per applicable law. 	
<p>7. Bio-data of key management personnel</p>	
<p>8. Detailed description of the trial plan, including technical information.</p>	
<p>9. Trial Model Details.</p> <ul style="list-style-type: none"> i. Purpose of trial; ii. Potential outcomes from the trial; iii. Nature of the trial (indoor/outdoor, standalone/JV, others etc.; iv. Participant(s) details; v. Interconnect requirements (if any); 	

<ul style="list-style-type: none">vi. proposed start date(s) of the trial;vii. proposed end date(s) of the trial:viii. Exact geographic/GPS Location(s):ix. Equipment Details/Specs;x. Proposed Frequency Band(s);xi. Access spectrum requirements with duplex modexii. Backhaul spectrum requirementsxiii. Required Bandwidth:xiv. Duplexing Modexv. Fixed backhaul (without spectrum)	
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