



भारतीयदूरसंचारविनियामकप्राधिकरण
Telecom Regulatory Authority of India



Recommendations

on

**Encouraging Innovative Technologies, Services,
Use Cases and Business Models through
Regulatory Sandbox in Digital Communication
Sector**

New Delhi, India

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CHAPTER 1

INTRODUCTION

- 1.1. In an era marked by continuous technological evolution, the Digital Communication (DC) sector emerges as a dynamic epicentre of innovation, pioneering the way we connect and communicate. This sector serves as the lifeblood of the modern world, facilitating seamless connectivity, empowering businesses, and enabling individuals to access a myriad of information and services. Keeping pace with the ever-changing landscape of digital communication necessitates a regulatory framework that is not only adaptive but also fosters innovation.

- 1.2. DC sector is witnessing a transformative shift as innovations take centre stage, propelling business models into uncharted territories. However, these groundbreaking advancements encounter a formidable obstacle - the high cost of failure, particularly in the intricate and demanding market conditions of today. Recognizing this challenge, policymakers play a pivotal role in facilitating a solution. A way forward can be by providing a safe space for businesses and regulators to work together to understand how new technologies can be developed and regulated in a responsible and ethical way. By exploring and implementing near-real working conditions, policymakers can create sandboxes—controlled environments that mimic actual market scenarios. These sandboxes serve as invaluable testing grounds, mitigating the risks of failure during commercial deployment and fostering an ecosystem where innovation can thrive with reduced uncertainties. In essence, sandboxes emerge as a strategic instrument, aligning policy initiatives with the dynamic demands of a technology-driven economy. Regulatory sandboxes offer an accelerated route for market entry, offering a clear understanding of the challenges that both regulators and participants within the sandbox environment must navigate.

- 1.3. The concept of a Regulatory Sandbox (RS) has gained traction globally, with numerous countries recognizing its potential to drive innovation, economic growth, and consumer welfare. Today, nearly a quarter of countries across the globe have instituted regulatory sandboxes, serving as secure platforms for regulatory experimentation. However, in most of these countries regulations related to sandboxing are predominantly observed in the financial sector, specifically within financial technology (FinTech) and banking domains. The prevalence of such regulations is attributed to the sensitivity of financial data and transactions in these industries, where the potential risks of fraud, cyberattacks, and financial instability are significant. Given the complexity of real-world test conditions that cannot be fully replicated through conventional testing methods, innovators view sandboxing as a viable solution to address this challenge. Not only the developed countries but many developing countries have also established sandbox platforms in various sectors.
- 1.4. In India, Regulatory bodies in the financial sector, such as RBI¹ and SEBI², have already issued guidelines for the testing of innovative financial products within the framework of Regulatory Sandbox. In the FinTech industry, the sandboxing approach allows banks to test innovative products and services on real networks without risking the security of their existing systems and customers.
- 1.5. While sandboxing regulations have primarily gained prominence in the financial sector, their applicability extends to other industries also where new technologies and services may pose significant risks for the market if not tested properly. Sectors such as Digital Communication, healthcare, energy, and transportation are potential candidates for adopting sandboxing frameworks to facilitate innovation while mitigating risks. In the context of the DC sector, the use of sandboxing regulations is still relatively nascent compared to the FinTech sector.

¹ENABLINGFRAMEWORK815099571ACC411F8B9C0EB6534E681F.PDF

²SEBI | Revised Framework for Regulatory Sandbox

Telecom innovations may include large scale infrastructure changes, spectrum allocation in a specific band, changes in network functionalities, and requirement of large geographies etc., that are more complex and challenging to replicate in a confined testing environment. Despite the hurdles, there is a growing acknowledgment of the potential advantages associated with regulatory sandboxes in the DC sector. It's worth noting that contemporary emerging telecom technologies are both highly intricate and often entail substantial deployment costs. The potential of failure in commercial deployment or challenges in monetization at a later stage due to unpredictable product behaviour in real-world scenarios can significantly impact the market. Regulatory sandboxes in DC sector present an opportunity to mitigate this risk to a considerable extent.

- 1.6. Regulatory sandboxes in DC sector can offer a secure environment for real-time testing of emerging technologies like 5G/6G networks, communication tools powered by artificial intelligence (AI), and applications based on blockchain. The aim is to ensure that these technologies comply with pertinent regulations and safeguard consumer interests.

Present Consultation

- 1.7. The Department of Telecommunications, vide its letter dated 10.03.2023 (**Annexure-I**), *inter-alia*, sought the recommendations of TRAI on framework for regulatory sandbox for emerging technologies, services, and business models in DC sector. In recognition of the reference received from DoT, the TRAI released a Consultation Paper (CP) on June 19, 2023. The CP presented a "Draft Framework for Encouraging Innovative Technologies, Services, Use Cases, and Business Models through Regulatory Sandbox in the Digital Communication Sector" and requested stakeholders' comments on the same. The framework encompassed a range of salient features that aimed to create a conducive environment for innovation while ensuring

consumer protection and adherence to regulatory principles. To encourage early engagement and promote a culture of innovation within the sector, the framework proposed a streamlined application process for participation in sandbox testing.

- 1.8. A total of 13 comments and 2 counter comments (available at TRAI's website www.trai.gov.in) were received in response to CP. The comments ranged from the potential benefits of the RS to its practical implementation. An Open House Discussion (OHD), pertaining to this issue, with stakeholders was also organized on 18.03.2024.

Developments subsequent to the issuance of Sandbox CP on 19.06.2023

- 1.9. Telecommunication Act' 2023 notified on 24th December 2023- This act vide Section 27 of CHAPTER VI on INNOVATION AND TECHNOLOGY DEVELOPMENT stated:

“The Central Government may, for the purposes of encouraging and facilitating innovation and technological development in telecommunication, create one or more regulatory sandboxes, in such manner, and for such duration, as may be prescribed.

Explanation. — For the purposes of this section, the expression "regulatory sandbox" refers to a live testing environment where new products, services, processes, and business models which may be deployed, on a limited set of users, for a specified period of time, with certain relaxations from the provisions of this Act.”

- 1.10. Issue of Guidelines to establish and operate “Spectrum Regulatory Sandbox/ Wireless Test Zones (WiTe Zones)” on 11.03.2024 - Considering the requirements of emerging new radiocommunications technologies, to promote R&D activities, outdoor testing/experimentation in the field of wireless radiocommunications and also to promote Make in India in wireless products, the Government has issued these guidelines to establish and operate ‘Spectrum Regulatory Sandbox’ (SRS) or ‘WiTe Zones (Wireless Test Zones). Under the guidelines, an applicant is required to apply for a WiTe zone license

that would be valid for a period of 10 years, renewable in multiple of 5 years. Spectrum for testing may be allotted from assigned or unassigned band. However, such facility as established under the license shall not have any connectivity with PSTN/Public commercial network/satellite, for the purpose of testing/Research & Development (R&D).

- 1.11. In line with the definition of Regulatory Sandbox as provided in the Telecommunication Act' 2023, which emphasize on testing of new products, services, processes, and business models in live testing environment on a limited set of users for a specified period of time after obtaining certain regulatory relaxations, the Authority is making these recommendations.
- 1.12. These recommendations have been divided into three chapters. The first chapter provides a brief background on the issue of regulatory sandbox, and the process leading up to the framing of these recommendations. The framework for the Regulatory Sandbox for the DC sector that has been recommended by the Authority has been provided in the second chapter. The third chapter deals with the detailed analysis of the issues arising from the consultation paper released by the Authority, with due reference to the comments received from the stakeholders and explains the views of the Authority on the same.

CHAPTER 2

FRAMEWORK RECOMMENDED FOR ENCOURAGING INNOVATIVE TECHNOLOGIES, SERVICES, USE CASES, AND BUSINESS MODELS THROUGH REGULATORY SANDBOX (RS) IN DIGITAL COMMUNICATION SECTOR

I. THE REGULATORY SANDBOX (RS)

1. In view of new technological developments, varieties of competing technologies, number of probable product/service/application (hereinafter called product) providers and constantly evolving requirements, a test environment needs to be established where new technologies, functions and processes can be tested in live networks, or existing functions or processes can be refined. This live testing environment may also provide possibilities to explore new ways and means to meet regulatory requirements or new service offerings. Such test environments in regulatory space are commonly known as “Regulatory Sandboxes”.
2. The Telecommunication Act’ 2023 provides that *“the expression “regulatory sandbox” refers to a live testing environment where new products, services, processes, and business models which may be deployed, on a limited set of users, for a specified period of time, with certain relaxations from the provisions of this Act.”* This framework is being issued in line with the definition of Regulatory Sandbox provided in the Telecommunication Act’ 2023.
3. DoT has also issued guidelines on 11.03.2024 to establish and operate ‘Spectrum Regulatory Sandbox’ (SRS) or ‘WiTe Zones (Wireless Test Zones)’ to promote R&D activities, outdoor testing/experimentation in the field of emerging new radio communications technologies. However, these guidelines do not provide for any connectivity with PSTN/Public commercial network/satellite, for the purpose of testing/Research &

Development (R&D) i.e. testing in WiTe Zones does not allow exposure of products to live network environments.

4. Beyond offline/laboratory/WiTe Zone testing, there will be a requirement of testing of the products in actual live network environments. Also, apart from exemptions that are related to spectrum, some products may require other types of regulatory relaxations for testing in live network requirements. For all such live network testing requirements, the Telecom Service Providers (TSPs) and other innovators can apply under this RS framework. This framework is expected to give the Digital Communication industry's start-up ecosystem access to real network environments and other data of telecom networks to help test the reliability of new products before bringing them to market.

II. OBJECTIVES AND SCOPE:

5. The sandboxing framework for the Digital Communication (DC) sector in India is aimed at promoting innovation, protecting consumer interests, reduce regulatory burden, and mitigating potential risks associated with new technologies and business models.
6. The scope of the sandboxing framework includes any new digital communication service or technology that requires testing in a controlled live network environment where certain regulatory/licensing relaxations for the limited purpose of the testing are required. It is clarified that the products that are not impacted by any restrictions under licensing/regulatory norms and/or do not require any explicit permission/dispensation need not be tested under this RS and can be tested by Telecom Service Providers (TSPs) subject to fulfilment of Licensing conditions and other relevant rules/regulations/guidelines issued by any Government or regulatory agency.

III. ELIGIBILITY & OTHER ESSENTIAL CONDITIONS:

7. Any licensed Telecom Service Provider, called Principal Applicant, shall be eligible for testing in the Regulatory Sandbox subject to fulfilment of

laid down conditions. The other entities, called Applicant, willing to utilize the Sandboxing facilities of any licensed service provider may engage with Principal Applicants. In case licensed service providers are applying in their own capacity, they need to fulfil conditions meant for Principal Applicant and Applicant both. The Applicant can also apply for testing in the Regulatory Sandbox provided they attach an in-principal approval/consent from the Principal Applicant indicating the latter's consent to test the products on their network.

8. In cases where the Applicants are unable to secure consent of a Principal Applicant on reasonable terms for association OR the product does not necessitate associating with a Principal Applicant, the Applicant can apply directly attaching the documents showing efforts made for tying up with a Principal Applicant. After due evaluation of such applications, the deserving innovations that may have widespread impact on society, economy and technology, the licensor will have a right to mandate RS testing on a TSP's network, including important terms and conditions of such testing.
9. The essential conditions required for testing under Regulatory Sandbox and details to be provided in applications are as follows:
 - i. **Only Indian National or entities will be eligible:** Principal Applicant / Applicant should be an Indian National or entity incorporated as a company (as defined in Companies Act, 2013) or registered as a partnership firm (registered under section 59 of the Partnership Act, 1932) or a limited liability partnership (under Limited Liability Partnership Act, 2008) or such Research & Development (R&D) Institutions that have been listed in the latest directory³ of such institutes published by the Department of Science & Technology (DST).
 - ii. **Limited prior testing:** Before applying for testing in sandbox, limited testing of the product in offline/laboratory/WiTe Zone

³ <https://dst.gov.in/sites/default/files/R%20%26%20D%20Directory%202021.pdf>

environment should have been carried out by the Principal Applicant / Applicant. The details of the same should be provided in the application by the Principal Applicant / Applicant.

- iii. **Regulatory compliance & exemptions sought:** The Principal Applicant / Applicant should expressly spell out what exemptions from the existing regulatory regime pertaining to the product are sought under Sandbox testing, along with the specific testing period for which these exemptions are required. It should also mention the authority which is responsible for permitting the required exemptions. Any other facilitation or resource sought, including spectrum, for the sandbox testing must also be specified. For exemptions required from other ministries, autonomous bodies, or regulators outside of DoT's jurisdiction, DoT will establish an institutional mechanism to facilitate the acquisition of such permissions. The Principal Applicant / Applicant seeking these exemptions should follow a parallel process with the respective entities and provide them all necessary information as required by such entities.
- iv. **Scope of testing:** To prevent any negative impact on the wider telecom networks or the customers, the Sandbox environment should have a finite scope which is appropriate enough for testing the product. The Principal Applicant / Applicant must clearly define the scope of testing for the product. Scaling-up of the scope during the RS validity period can be permitted by DoT after due evaluation of the justification furnished along with such request.
- v. **Risk Mitigation:** The product should have proper risk management strategy to incorporate appropriate safeguards to mitigate and control potential risks to any market participants/users/customers/government that may arise from the testing of the product in live environment and shall propose appropriate safeguards to manage the risks and contain the consequences of failure.

- vi. **Consumer protection:** The Principal Applicant / Applicant should demonstrate in application as to how the Sandbox testing would prioritize the protection of consumer interests and prevent any harm to consumers. Customer onboarding and private/public data processing should align with the provisions of the Digital Personal Data Protection Act, 2023, and any applicable rules, regulations, or orders issued under this Act. If the case warrants, only such customers will be allowed to be on boarded who have given specific consent voluntarily.
 - vii. **Monitoring and evaluation:** The Principal Applicant / Applicant, should precisely define the test parameters, control boundaries, testing site, significant milestones, and anticipated outcomes for the proposal and include a mechanism for monitoring and evaluating the testing process to ensure that the objectives of the testing are met.
 - viii. **Exit strategy:** The Principal Applicant / Applicant should submit a clear exit strategy that outlines the process for exiting the testing phase.
10. **Generic RS exemptions to TSPs to carry out RS testing for multiple use cases requiring similar exemptions:** DoT may permit the Principal Applicant with a list of generic exemptions applicable to RS testing for multiple use cases, contingent on the fulfilment of specified conditions that the licensor or regulator may prescribe. Based on the generic exemptions provided, the Principal Applicant can enrol several Applicants for RS testing of various use cases within the ambit of such generic exemptions and will not be required to approach DoT for seeking permission for each use case of RS testing. However, the Principal Applicant will be required to intimate DoT about the details of each such RS use case, start of each individual RS testing and submit reports for each such RS testing. In case it is required to seek any specific regulatory exemption that extends beyond the generic exemptions for any particular RS testing, the Principal Applicant will be required to submit a separate

application in line with the procedure prescribed under this RS Framework.

IV. SUPPORTING DOCUMENTS REQUIRED TO BE SUBMITTED WITH APPLICATION

11. The supporting documents required to be submitted with applications are as follows:

- i. Certificate of Incorporation / Registration as a company (as defined in the Companies Act, 2013) or a partnership firm (registered under section 59 of the Partnership Act, 1932) or a limited liability partnership (under the Limited Liability Partnership Act, 2008. Individual Indian nationals will be required to submit any government issued identity document that is valid as KYC document for taking a telephone/mobile connection.
- ii. Details of what licensing/regulatory relaxations are sought for testing purposes.
- iii. Report on prior lab/field testing carried out on the product.
- iv. Details of the potential risks to market participants/users/customers/government due to any exemption granted or otherwise and risk management strategy and proposed safeguards to mitigate such potential risks.
- v. Testing plan, test parameters, control boundaries, testing site, significant milestones, anticipated outcomes, and monitoring and evaluation mechanism for the proposal.
- vi. Exit strategy outlining the process for exiting the RS testing phase.

V. APPLICATION, EVALUATION, AND APPROVAL PROCESS:

12. The application and approval process will be as follows:

- i. Principal Applicant and/or Applicant, as the case may be, desiring to test a product under Regulatory Sandbox in India shall make an application to the DoT electronically in the specified form. DoT shall put in place an **end-to-end digital process** to handle RS applications and all related activities including intimations, approvals, sharing of information, monitoring, reporting requirements etc.
- ii. The application shall be accompanied by a **non-refundable processing fee** of ten thousand rupees.
- iii. The necessary supporting documents and undertaking to substantiate its claim of fulfilment of eligibility and essential conditions as detailed under this RS framework should be provided with the application. The application form shall be signed by the officer duly authorized by the Company Board/Partner of the firm. The complete application must be submitted to: XXXXXX or by email at XXXXXX.
- iv. At the “**Application Stage**”, DoT shall review the application and inform any shortcomings to the Principal Applicant / Applicant within 7 working days. The Principal Applicant / Applicant will submit necessary documents to eliminate the shortcomings within the next 10 working days. DoT shall review the application and inform of its ‘**potential suitability**’ for a sandbox to Principal Applicant and/or Applicant, as the case may be, within 30 working days from the submission of the complete application.
- v. The application may be evaluated based on the eligibility conditions and the documents submitted in support thereof. At the “**Evaluation Stage**”, DoT shall work with the Principal Applicant / Applicant to determine the specific exemptions required from regulatory requirements and other conditions (including test parameters and control boundaries) to be applied to the proposed product in question. If the Principal Applicant /

Applicant is able and willing to meet the proposed regulatory requirements and conditions, permission will be granted to develop and test the proposed innovation(s) in the sandbox. DoT will establish a mechanism to complete the 'Evaluation Stage' within 45 days⁴ and communicate the permission or reasons for rejection. In certain cases, exemptions may be required from other ministries or sectoral regulators (including TRAI) or other entities, in such cases DoT shall establish a mechanism to approach such entities and coordinate for grant of exemptions to Principal Applicant / Applicant in a time bound manner preferably within 60 days⁵.

- vi. Upon approval, the Principal Applicant / Applicant shall proceed towards the "**Testing Stage**". DoT will designate one officer who will have primary responsibility of coordinating the sandbox testing. Each Principal Applicant / Applicant shall assign a contact person to coordinate with a designated officer of DoT. If during the testing stage, the Principal Applicant / Applicant is making any material changes to the product which may alter the conditions/undertakings under which the approval was granted, prior approval from DoT will have to be taken.

VI. **OTHER CONDITIONS**

13. **Testing data:** The Principal Applicant / Applicant shall be required to keep record of all testing steps/data/consent records for the period not less than one year after exit from Sandbox environment. Data generated during RS testing should be stored and disposed of in a secure manner.
14. **Publication of information:** The DoT shall reserve the right to publish any relevant and generic information about the Regulatory Sandbox

⁴from the date the Applicant / Principal Applicant is informed about 'potential suitability' of his application for RS testing

⁵from the date the Applicant / Principal Applicant is informed about 'potential suitability' of his application for RS testing

applicants on its website, for the purposes it deems fit, without revealing any proprietary/intellectual property rights related information.

15. **Statutory and Legal Issues:** DoT shall not be liable for any acts of omissions, commissions, breaches, or any kind of culpability arising out of or in relation to the sandbox process and any liability arising as such will be borne by the Principal Applicant and/or Applicant, as the case may be.
16. **Waivers or modifications to rules:** DoT shall have the right to waive or modify the conditions of this framework.

VII. **VALIDITY PERIOD**

17. The permission granted under the regulatory sandbox will have a validity period of up to 12 months for the Principal Applicant / Applicant to test its product. At the end of the validity period, Principal Applicant / Applicant will stop testing of the product. Commercial usage of the product tested by Principal Applicant / Applicant in the RS will not be allowed during the RS validity period.
18. An **extension of validity period** can be granted by competent authority based on prevalent conditions of tests, potential benefits, cost involved, complexity of test etc.
19. The Principal Applicant / Applicant can file for **early completion** of the testing before expiry of the validity period if the testing is completed successfully. The Principal Applicant / Applicant may also file for **early termination** of the proposal in DoT if it is felt that the proposal shall not be able to meet the desired objective. DoT shall consider the request on merits and advise the Principal Applicant / Applicant accordingly, subject to such conditions, as deemed fit.

VIII. **REVOCAION OF PERMISSION**

20. DoT may revoke the permission so granted for RS testing at any time if it is of the view that -

- i. The permitted Principal Applicant / Applicant is failing, or is likely to fail, to satisfy the conditions/undertakings established under this RS framework; that qualified it to the Regulatory Sandbox testing permission.
- ii. The permitted Principal Applicant / Applicant has committed a contravention of the regulations, or any rules, guidelines, or standards beyond the exemptions allowed, if any.
- iii. The conducted test conflicts with the public interest.
- iv. The Principal Applicant / Applicant has submitted forged undertakings/records/documents.

Provided that before revoking the permission, the Principal Applicant / Applicant shall be given an **opportunity of being heard**. In all cases of revocation of permission, appropriate reasons will be provided and the same will be communicated to the Principal Applicant / Applicant.

IX. **COMPLETION OF THE RS TESTING AND REPORTING**

21. To ensure effective oversight and assessment of the sandbox, the entity who has made the application and who has been granted permission to carry out RS testing must establish a monitoring and reporting mechanism as mentioned below:
 - a. **Periodic Reports:** An oversight and governance body will decide whether periodic reports are required to be submitted for a particular RS testing. If required, it will also decide the frequency and format of such periodic reports.
 - b. **Comprehensive report post RS testing completion:** On successful completion of testing or at the end of the validity period, the Principal Applicant / Applicant shall submit a comprehensive report to the DoT within 30 days. The final report submitted by the Principal Applicant / Applicant must explicitly state the results/outcomes of the RS testing performed, findings

related to the tested product, Customer feedback, complaints, concerns, and challenges during the testing period; Measures taken to overcome the challenges; consumer protection and risk management frameworks. The final report should also mention the details of wrapping up of all activities that were done in the RS testing phase along with the settlement of all obligations (contractual, financial, and other commitments) related to all stakeholders including customers.

22. All reports should preferably be signed jointly by the Principal Applicant and Applicant. In case of difference of viewpoint, separate reports may be submitted by Principal Applicant or Applicant.

X. OVERSIGHT AND GOVERNANCE BODY

23. The oversight and governance of the RS shall be done by the National Telecommunications Institute for Policy Research, Innovation, and Training (NTIPRIT). NTIPRIT should rope in representative(s) from the Telecom Engineering Centre (TEC) and Academic institutions, as required. This body has been referred to as the overseeing body hereinafter.
24. The evaluation of applications submitted for RS testing shall be done by DoT. Post approval of such applications, the Overseeing Body will monitor and evaluate the performance of each sandboxing project. For this purpose the Overseeing Body will meet periodically to examine reports submitted for all ongoing/completed RS testing. The Principal Applicant / Applicant must make necessary arrangements to make the Sandbox product accessible during testing, both physically and online, and provide access to all necessary tools, testers, and software necessary to monitor the product by the Overseeing Body. This will ensure that the sandboxing process is monitored transparently, and the Overseeing Body has the necessary resources to effectively oversee and evaluate the testing of innovative products.

25. Based on the learnings of each RS, the Overseeing Body can make recommendations, if any, to the Government on the changes required in policy/legal/licensing/regulatory framework.

XI. **FUNDING OF INNOVATION FOR INCLUSIVE SOCIETAL ADVANCEMENT AND GROWTH OF ECONOMY**

26. Government has already expanded the scope of Universal Service Obligation Fund created under the Indian Telegraph Act, 1885, by incorporating suitable provisions in the new Telecommunication Act' 2023 and calling it the "*Digital Bharat Nidhi*". Clause 25 of this Act states that "*the sums of money received towards the Digital Bharat Nidhi under section 24, shall first be credited to the Consolidated Fund of India, and the Central Government may, if Parliament by appropriation made by law in this behalf so provides, credit such proceeds to the Digital Bharat Nidhi from time to time for being utilised exclusively to meet any or all of the following objectives, namely:—*

- a. *Support universal service through promoting access to and delivery of telecommunication services in underserved rural, remote and urban areas;*
- b. *Support research and development of telecommunication services, technologies, and products;*
- c. *Support pilot projects, consultancy assistance and advisory support towards provision of service under clause (a) of this section;*
- d. *Support introduction of telecommunication services, technologies, and products."*

27. Hence Clause 25(b), (c) and (d) of the new Telecommunication Act extend the scope of *Digital Bharat Nidhi* to facilitate innovation and experimentation in the telecom sector by extending suitable financial support. Some innovative products that may have significant potential to bridge digital divide and bring socio-economic advancement to under-privileged sections may not be able to get sufficient funding from market sources. DoT may consider eligibility of such products to get funding

support for testing under RS Framework under Clause 25(b), (c) and (d) of the new Telecommunication Act⁶. The decision to provide such a funding support will rest with the authority governing the *Digital Bharat Nidhi*.

28. The Principal Applicant / Applicant who desires to avail such funding may indicate so in the application along with the details of funding sought. However, the Principal Applicant / Applicant may note that proposals that do not seek Government funding will have higher chances of acceptance and therefore Principal Applicant / Applicant should preferably make their own arrangements for funding the proposal.

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⁶ Relevant provisions will be required to be incorporated in the rules that are to be notified by the Government.

CHAPTER 3

COMPREHENSIVE ANALYSIS OF STAKEHOLDERS' INSIGHTS AND REFINEMENTS OVER THE DRAFT REGULATORY SANDBOX FRAMEWORK PROPOSED IN TRAI'S CONSULTATION PAPER OF 19.06.2023

- 3.1 As part of the Consultation Paper (CP) dated 19.06.2023 on “Framework for Encouraging Innovative Technologies, Services, Use Cases, and Business Models through Regulatory Sandbox in the Digital Communications Sector”, the Authority had attached a draft Regulatory Sandbox framework. The Authority had sought comments of stakeholders on the draft Regulatory Sandbox framework. The following sections delve into the received comments/counter comments, their analysis, and the resulting refinements made in the draft RS framework that was proposed as part of the CP.
- 3.2 Based on the insights provided by the stakeholders; the Authority has followed certain broad principles while refining the draft framework. At the outset, the Authority has kept in mind that the RS Framework will further help in promoting innovation and start-up culture in the country, and therefore, the conditions of the framework should not be onerous on entities involved. At the same time, the Authority has also kept in mind that testing in live networks requires ensuring security of the networks as well as protecting interest of the customers who would be onboarded for the RS testing. Therefore, to ensure that the customer interests are protected, and the RS testing does not adversely affect the working of live networks, certain conditions have been retained in the recommended RS framework. To promote ease of doing business, the requirements have been kept as minimal as possible, and therefore the finally recommended framework has several refinements over the draft framework that was proposed in the CP. Furthermore, where future technological innovations are involved, it is difficult to predict all

scenarios and prescribe all possible requirements beforehand. Therefore, rather than adopting an ex-ante heavily prescriptive approach, the Authority is of the view that, to start with, the framework should be as light touch as possible. As we learn and become wiser during the course in time, modifications can always be incorporated. To address stakeholder concerns, enhance effectiveness, and increase acceptance by potential participants, the RS Framework that is now being recommended, either simplifies or removes several relatively onerous conditions from the draft that was proposed in CP.

3.3 For sake of clarity, subsequent sections in this chapter have been structured as following:

- 1) Section Heading as was provided in the draft RS framework that was floated for consultation in CP.
 - A. Text of section(s) that was proposed in draft RS framework that was attached with the CP for seeking comments of the stakeholders.
 - B. Views of stakeholders on the section.
 - C. Analysis of the issues and views of the Authority on the section.
 - D. Final text proposed for the sections by the Authority as part of the recommended framework.

1) “The Regulatory Sandbox framework” - Section I and “Objectives and Scope”- Section II

3.4 In the draft RS framework that was attached with the CP, an introductory section detailed how the establishment of a RS is foundational for fostering innovation in the Digital Communication sector. A well-defined scope helps prevent ambiguity, offering a roadmap for participants and regulators alike. Another section defined the objectives and scope of the RS framework and set the direction for innovation within the Regulatory Sandbox.

3.5 The text on the Regulatory Sandbox framework and Objectives and Scope that was proposed in the draft CP, the comments of the stakeholders on the same, and the views of the Authority thereof are summarized in the paras below.

A) Text that was proposed for these sections in draft RS framework of CP.

I. THE REGULATORY SANDBOX

1. *In view of new technological developments, varieties of complementing technologies, number of probable product/service/application providers and constantly evolving requirements, a test environment needs to be established where new functions and processes can be tested, or existing functions or processes can be refined. This test environment may also provide possibilities to explore new ways and means to meet regulatory requirements or new service offerings. Such test environments in regulatory space are commonly known as “Regulatory Sandboxes”.*
2. *The Regulatory Sandbox (RS) usually refers to live testing of new product/service/application in a controlled/test regulatory/licensing environment for which regulators/licensors may (or may not) permit certain regulatory/licensing relaxations for the limited purpose of the testing. The Regulatory Sandbox allows the regulators/licensor, the innovators, the service providers (as potential deployers of the technology) and the customers (as final users) to conduct field tests to collect evidence on the benefits and risks of new innovations, while carefully monitoring and containing their risks. It can provide a structured avenue for the Licensor/Regulator to engage with the ecosystem and to develop innovation-enabling or innovation-responsive framework that facilitate delivery of relevant, low-cost service products. The Regulatory Sandbox is an important tool which enables more dynamic, evidence-based regulatory/licensing environments which learn from, and evolve with, emerging technologies.*

II. OBJECTIVES AND SCOPE:

3. *The sandboxing framework for the Digital Communication (DC) sector in India is aimed at promoting innovation, protecting consumer interests, and mitigating potential risks associated with new technology and business models. The objectives of the framework are to encourage innovation, reduce regulatory burden on small and medium-sized enterprises (SMEs), and ensure consumer protection. Under this sandbox framework, entities shall be granted certain facilities and flexibility to experiment with telecom products/services/application in a live environment and on limited set of real customers for a limited time frame. These features shall be fortified with necessary safeguards for customer protection*

and risk mitigation. Various stakeholders can prototype product/service/ application solutions and evaluate processes and functions in the test environment.

4. *The scope of the sandboxing framework includes any new DC service or technology that requires testing in a controlled environment. This framework is applicable to all entities or individuals concerned to test products or services or applications related to DC technology.*

B) Views of stakeholders on the Introductory section and on Objectives and Scope of RS framework

- 3.6 Several stakeholders have emphasized that the RS presents an opportunity to facilitate and empower the testing and successful introduction of innovative business models, products, applications, and services (hereinafter referred to as innovative products) in the market. It helps in gaining valuable insights from a regulatory and policy perspective. Another stakeholder has endorsed the concept of RS in the telecommunications sector, contending that integrating the sandbox within the regulatory framework provides legal certainty and clarity to participants. This fosters transparency and accountability not only to the government and market players but also to consumers. Additionally, it enables regulators to strike the right balance between innovation and safeguarding public interest. Through the creation of a live but controlled environment for experimentation, regulators and policy makers can adeptly manage risks, promote responsible innovation, and ensure both consumer protection and market stability.
- 3.7 One of the stakeholders has stated that there's no need for an RS framework for Telecom Service Provider (TSP) products and services that are compliant with the existing regulatory framework. If the Authority insists on RS, this stakeholder proposes a dual approach involving TSP-controlled RS and Government RS. It further argues that RS is more extensively used in the financial sector due to policymakers' aim to enhance financial inclusion. The RS framework in the telecom sector is considered nascent, and alternatives like innovative testbeds, trial environments, and experimentation platforms may continue to be used.

3.8 On the contrary, a couple of stakeholders have emphasized the necessity of RS despite the availability of conventional testing methods. Stakeholders have stated that RS is deemed crucial in the Digital Communication sector as traditional testing lacks exemptions from regulations and licensing, and conventional methods fall short in utilizing live telecom resources and real-time data. The RS framework provides an alternative method, offering access to a live environment and real-time data with minimal compliance with regulatory requirements.

C) Analysis of the issues and views of the Authority

3.9 It is crucial to recognize that the RS offers a controlled environment for live experimentation while addressing limitations of traditional testing methods such as offline data, non-real testing environments, and restricted scale. The RS framework ensures legal clarity, transparency, and risk management associated with innovation, serving as a vital tool for the evolving DC sector. RS Framework approach can help strike a balance between regulatory requirements and the imperative for fostering innovation in the DC sector.

3.10 In the realm of technology, companies often employ beta testing as a strategic approach to assess and refine their products before official launches. Beta testing entails deploying a pre-release version of the product to a select group of real customers, enabling the company to gather valuable insights, identify potential issues, and gauge user experiences in a real-world environment. This hands-on engagement with end-users provides technology companies with a unique advantage, offering first-hand feedback on usability, performance, and any unforeseen challenges. By involving real customers in the live testing phase, companies can uncover nuances that might not be apparent in controlled environments, leading to more robust and user-friendly final products. Additionally, this iterative feedback loop enhances customer satisfaction, builds anticipation, and establishes a sense of co-creation, fostering stronger relationships between the

company and its user base. Ultimately, the practice of beta testing contributes significantly to the success and continuous improvement of technology products in the dynamic and competitive landscape of the information technology sector.

- 3.11 Adopting this beta testing approach in the DC sector has the potential to revolutionize innovation and competition. By involving real customers in the testing phase, telecom companies can gain valuable insights into user preferences, network performance, and the practicality of new services. This user-centric approach not only enhances the quality of offerings but also builds a stronger rapport with consumers. Drawing inspiration from technology companies, the telecom sector can foster a culture of continuous improvement, adaptability, and customer-centricity. This shift towards real-world testing allows telecom companies to stay ahead in the dynamic landscape, rapidly adapting to market demands, and competing effectively with technology companies. In doing so, the telecom industry can unlock new avenues for innovation, ensuring that their products and services resonate with end-users, fostering a competitive edge in the ever-evolving digital ecosystem.
- 3.12 The Authority therefore is of the view that creation of a new framework for authorizing entities to establish, operate, engage with other authorized entities, and test innovative use cases in the RS is necessary. The Government should, therefore, immediately come up with a RS framework for the DC sector to encourage and test innovative technologies, services, use cases, and business models.
- 3.13 On December 24, 2023, the Telecommunications Act, 2023 was announced, which included several provisions aimed at encouraging innovation in the telecommunications industry. One of such provisions is related to Sandbox. Clause 27 of Chapter VI, titled "Innovation and Technology Development," stated:

“The Central Government may, for the purposes of encouraging and facilitating innovation and technological development in telecommunication, create one or more regulatory sandboxes, in such manner, and for such duration, as may be prescribed. Explanation. —For the purposes of this section, the expression “regulatory sandbox” refers to a live testing environment where new products, services, processes and business models which may be deployed, on a limited set of users, for a specified period of time, with certain relaxations from the provisions of this Act.”

Since the Act explicitly outlined the Regulatory Sandbox, which was non-existent during the time of floating the CP, it has been incorporated into the Introduction paragraph of revised RS framework and the section has been revised accordingly.

- 3.14 The Authority of the view that the objective of RS framework should be to promote the development and testing of innovative technologies, services, use cases, and business models in the DC Sector. The Authority is also of the view that under this framework, entities should receive certain facilities and regulatory flexibility to experiment with telecom products in a live environment, including, but not limited to, access to a limited set of real customers (provisioned on the network of any licensed TSP) for a defined period. These activities will be carried out with essential safeguards in place to protect customers’ interests and manage associated risks effectively. The framework shall enable various stakeholders to prototype their product solutions and evaluate its processes and functions in a controlled but live test environment. Accordingly, the Authority in the now recommended RS framework has adopted a more concise and focused objective statement and scope.
- 3.15 As far as submission of some of the stakeholders that innovative products which can be tested under existing licensing or regulatory restrictions should not be included under the scope of RS framework is concerned, the Authority would like to clarify that the objective of RS framework is to test only such innovative products that require

regulatory exemption(s). However, to make this explicitly clear, changes have been introduced in the “Objectives & Scope” section of the RS framework that was floated for consultation. It has now been incorporated that the product falling in the category that are not impacted by any restrictions under licensing/regulatory norms and/or does not require any explicit permission/dispensation will be out of scope for the RS and can be tested by Telecom Service Providers (TSPs) subject to fulfilment of Licensing conditions and other relevant rules/regulations/guidelines issued by any Government or regulatory agency.

D) Recommendations of the Authority

- 3.16 The **Authority recommends the following text to be adopted under section I. THE REGULATORY SANDBOX and II. OBJECTIVE AND SCOPE:**

I. THE REGULATORY SANDBOX (RS)

1. *In view of new technological developments, varieties of competing technologies, number of probable product/service/application (hereinafter called product) providers and constantly evolving requirements, a test environment needs to be established where new technologies, functions and processes can be tested in live networks, or existing functions or processes can be refined. This live testing environment may also provide possibilities to explore new ways and means to meet regulatory requirements or new service offerings. Such test environments in regulatory space are commonly known as “Regulatory Sandboxes”.*
2. *The Telecommunication Act’ 2023 provides that “the expression “regulatory sandbox” refers to a live testing environment where new products, services, processes, and business models which may be deployed, on a limited set of users, for a specified period of time, with certain relaxations from the provisions of this Act.” This framework is being issued in line with the definition of Regulatory Sandbox provided in the Telecommunication Act’ 2023.*

3. DoT has also issued guidelines on 11.03.2024 to establish and operate 'Spectrum Regulatory Sandbox' (SRS) or 'WiTe Zones (Wireless Test Zones)' to promote R&D activities, outdoor testing/experimentation in the field of emerging new radio communications technologies. However, such facility as established under the aforementioned guidelines shall not have any connectivity with PSTN/Public commercial network/satellite, for the purpose of testing/Research & Development (R&D). Thus, testing in WiTe Zones does not allow exposure of products to live network environments.
4. Beyond offline/laboratory/WiTe Zone testing, there will be a requirement of testing of the products in actual live network environments. Also, apart from exemptions that are related to spectrum, some products may require other types of regulatory relaxations for testing in live network requirements. For all such live network testing requirements, the Telecom Service Providers (TSPs) and other innovators can apply under this RS framework. This framework is expected to give the Digital Communication industry's start-up ecosystem access to real network environments and other data of telecom networks to help test the reliability of new products before bringing them to market.

II. **OBJECTIVES AND SCOPE:**

5. The sandboxing framework for the Digital Communication (DC) sector in India is aimed at promoting innovation, protecting consumer interests, reduce regulatory burden, and mitigating potential risks associated with new technologies and business models.
6. The scope of the sandboxing framework includes any new digital communication service or technology that requires testing in a controlled live network environment where certain regulatory/licensing relaxations for the limited purpose of the testing are required. It is clarified that the products that are not impacted by any restrictions under licensing/regulatory norms and/or do not require any explicit permission/dispensation need not be tested under this RS and can be tested by Telecom Service Providers (TSPs) subject to fulfilment of Licensing conditions and other relevant rules/regulations/guidelines issued by any Government or regulatory agency.

2) Eligibility - Section III, “Essential Conditions to be Fulfilled by Principal Applicant & Applicant” - Section IV, and “Supporting Documents Required to be Submitted with Application” - Section V

3.17 Establishing eligibility criteria is vital for ensuring participants genuine need for live testing of innovative solutions and to ascertain whether they are equipped to navigate the complexities of the sandbox environment. The essential conditions act as the foundation for responsible participation in the sandbox. Furthermore, these conditions are crucial for ensuring that innovations are tested in a manner that prioritizes consumer protection, network security & stability, and adheres to regulatory standards. A well-defined requirement for supporting documents that are to be submitted with applications enhances transparency and thoroughness in the evaluation process. These documents provide the decision makers with the necessary information to assess the potential impact, risks, and benefits of the proposed innovations.

3.18 The text on Eligibility, Essential Conditions to be Fulfilled by Principal Applicant & Applicant, and Supporting Documents Required to be Submitted with Application that was proposed in the draft CP, the comments of the stakeholders on the same, and the views of the Authority thereof are summarized in the paras below.

A) Text that was proposed for these sections in draft RS framework of CP

III. ELIGIBILITY:

5. *Any licensed Service Provider, called Principal Applicant, shall be eligible for testing in the regulatory sandbox subject to fulfillment of laid conditions. The other entities, called Applicant, willing to utilize the Sandboxing facilities of any licensed service provider may engage with it as Principal Applicants. In case licensed service providers are applying in their own capacity they need to fulfill conditions meant for Principal Applicant and Applicant both.*

6. *In cases where the Applicants find difficulty in associating with a Principal Applicant OR the product/service/application does not necessitate associating with a Principal Applicant, the Applicant can apply directly. However, in such cases they will have to give sufficient justifications for applying directly. The Applicant will also be required to provide documents indicating the efforts made by them to tie-up with a Principal Applicant.*

IV. ESSENTIAL CONDITIONS TO BE FULFILLED BY PRINCIPAL APPLICANT AND APPLICANT:

7. *The essential conditions required for testing under Sandbox regulations and details to be provided in applications are as follows:*
- i. **Only Indian entities eligible:** *Principal Applicant/ Applicant should be a company incorporated and registered in India.*
 - ii. **Required financial and technological capability:** *Applicant shall have a minimum net worth of Rs. 25 lakhs as per its latest audited balance sheet. In addition, Applicant/Principal Applicant should demonstrate in the application that they possess the required financial and technological resources to take part in the sandboxing process.*
 - iii. **Genuineness of innovation:** *The product/service/application should be innovative enough to add significant direct or indirect value to the existing offering in the market. The same should be explicitly brought out in the application by the Applicant/Principal Applicant*
 - iv. **Genuine need to test:** *The Applicant/Principal Applicant should have a genuine need for live testing the product/service/application on real customers. Further, the Applicant/Principal Applicant should demonstrate that the product/service/application cannot be developed without relaxing certain regulations, if any, being sought.*
 - v. **Limited prior testing:** *Before applying for testing in sandbox, limited offline testing of the product/service/application should have been carried out by the applicant. The details of the same should be provided in the application by the Applicant/Principal Applicant.*
 - vi. **Direct benefits to users:** *The product/service/application should offer identifiable benefits (direct or indirect) to the retail or enterprise customers. The same should be explicitly brought out in the application by the Applicant/Principal Applicant.*
 - vii. **Risk Mitigation:** *The product/service/application should have proper risk management strategy to incorporate appropriate safeguards to mitigate and control potential risks to any market participants/users/customers/government that may arise from the testing of the product/service/application and shall propose appropriate safeguards to manage the risks and contain the consequences of failure. In case any deviation in the behavior of the product/service/application is observed during trial, compared to*

- the expected behavior, the Applicant/Principal Applicant must clearly specify the measures that may be required to be undertaken to contain the impact within the live system.*
- viii. **Scope of testing:** *To prevent any negative impact on the wider telecom market or the customers, the Sandbox environment should have a finite scope which is appropriate enough for testing the application/product/service.*
 - ix. **Realistic scenarios:** *The Sandbox testing environment should simulate realistic scenarios and conditions that the product/service/technology is likely to face in the real world. The same should be explicitly brought out in the application by the Applicant/Principal Applicant.*
 - x. **Transparency:** *The application for regulatory sandbox for a product/service/application should provide transparency to all stakeholders, including customers, about the nature and scope of the testing. Since there may be uncertainties involved in testing these new products/services/technologies, the transparency requirements, if any, should be clearly spelt out in the application by Applicant/Principal Applicant.*
 - xi. **Regulatory compliance& exemptions sought:** *The Applicant / Principal Applicant should expressly spell out what regulatory requirements are being complied with and what exemptions from the existing regulatory regime pertaining to the product/service/application are sought under Sandbox testing. It should also mention the authority which is responsible for permitting the required exemptions. Any other facilitation or resource sought, including spectrum, for the sandbox testing must also be specified.*
 - xii. **Consumer protection:** *Applicant/Principal Applicant should demonstrate in application as to how the Sandbox testing would prioritize the protection of consumer interests and prevent any harm to consumers. If the case so requires, only such customers will be allowed to be on boarded who have given specific consent voluntarily. The Principal Applicant/Applicant shall be required to undertake indemnity insurance of an adequate amount and period, to safeguard the interest of the consumers. The adequacy of insurance cover shall depend on determination of the maximum liability based on, among others, the following factors – (A) maximum exposure to a single consumer (B) the number of claims that could arise from a single event (C) number of claims that may be expected during the policy coverage period. The policy cover shall extend to the period beginning from the start of testing stage and end two months after exit from the regulatory sandbox.*
 - xiii. **Demonstrate additional protections needed:** *The Applicant/Principal Applicant should sufficiently describe the various protections that will be required to put in place in addition to those prescribed herein.*
 - xiv. **Monitoring and evaluation:** *The Applicant/Principal Applicant should precisely define the test parameters, control boundaries,*

testing site, significant milestones, and anticipated outcomes for the technological proposal. The Sandbox testing should include a mechanism for monitoring and evaluating the testing process to ensure that the objectives of the testing are met and to identify any areas for improvement. The Applicant/Principal Applicant should provide an acceptable reporting schedule to report to the Licensor/Regulator on the status and progress of development and testing of its technological proposal.

- xv. **Testing readiness of the product/service/application:** For conducting tests scientifically, test protocols and outcome indicators must be designed and set in advance. The interoperability of networks and services with envisaged functions and changes required, if any, needs to be identified for the testing. The Applicant/Principal Applicant should have the necessary resources to support testing in the sandbox and must demonstrate well developed testing plans with clear objectives, parameters, and success criteria. During the testing phase, additional steps which may be required to be taken to address regulatory concerns (when the system goes live) may also be identified and spelt out in advance.
 - xvi. **Exit strategy:** The Sandbox regulations should include a clear exit strategy that outlines the process for exiting the testing phase and launching the product/ service/technology in the wider market. The impact of exit on on-boarded customers should be clearly defined in application and also be informed to such customers. Documented proof of the same will be required.
 - xvii. **Deployment post-testing:** Applicant/Principal Applicant should demonstrate the intention and ability to deploy the product/ service/ application on a broader scale. To this effect the Applicant/Principal Applicant should share a proposed transition strategy along with sandbox exit strategy.
 - xviii. **Statutory and Legal Issues:** DoT/TRAI is not and shall not be liable for any acts of omissions, commissions, breaches, or any kind of culpability arising out of or in relation to the sandbox process and any liability arising as such will be borne by the Principal Applicant/Applicant. The Principal Applicant/Applicant will be required to submit an undertaking to this effect.
 - xix. **Publication of information:** The Regulator/Licensor shall reserve the right to publish any relevant and generic information about the Regulatory Sandbox applicants on its website, for the purposes it deems fit, which may include, but are not limited to, knowledge transfer, collaboration with other national and international regulatory agencies, etc., without revealing any proprietary/intellectual property rights related information. Principal Applicant/Applicant would be required to submit an undertaking to this effect and/or should submit details of such information which can't be put under public domain.
8. Applicant must provide necessary supporting documents and undertaking to substantiate its claim of fulfillment of above Essential

Conditions. However mere fulfillment of Essential Conditions doesn't automatically qualify Principal Applicant/Applicant for Sandbox testing. An application fulfilling all essential conditions can be rejected even later at Evaluation Stage post assessment of various aspects including potential risks, exemptions sought, direct/indirect benefits etc.

V. SUPPORTING DOCUMENTS REQUIRED TO BE SUBMITTED WITH APPLICATION

- i. Certificate of Incorporation and Registration with the Registrar of Companies of Principal Applicant/Applicant.
- ii. The latest audited Balance Sheet showing a net worth of at least Rs. 25 lakhs of Principal Applicant/Applicant.
- iii. Document explicitly bringing out the innovation and identifiable benefits (direct or indirect) of the product/service/application offered to retail or enterprise customers.
- iv. Explanation of the need for live testing and how certain licensing/regulations need to be relaxed for testing purposes.
- v. Provide the complete list of regulatory and/or licensing exemptions required and the extent of such exemptions.
- vi. Report on prior lab/field testing carried out on the product/service/application.
- vii. Explanation as to how the product/service/application offers identifiable benefits to retail or enterprise customers.
- viii. Details of the potential risks to market participants/users/customers/government due to any exemption granted or otherwise and Risk management strategy and proposed safeguards to mitigate such potential risks.
- ix. Details of Scope of the Sandbox environment and its limitations.
- x. Details of realistic scenarios and conditions that the product/service/technology is likely to face in the real world and how these conditions are to be simulated during Sandbox testing.
- xi. Details of the process for taking customer and other participants consent and conditions to be communicated to such customer and other participants before taking consent.
- xii. Details of safeguards planned for protection of consumer interests and prevents any harm to consumers.
- xiii. Testing plan, test parameters, control boundaries, testing site, significant milestones, and anticipated outcomes for the technological proposal.
- xiv. Exit strategy and proposed transition plan after Sandbox testing.
- xv. Details of the impact of Sandbox exit on on-boarded customers.
- xvi. Details of proposed transition strategy and ability to deploy the product/service/application on a broader scale.
- xvii. Undertaking indemnifying DoT/TRAI about any risk or damage caused to any stakeholder due to any direct or indirect action taken by principal applicant/applicant during sandbox testing.

B) Views of the stakeholders

i. Views of the stakeholders on eligibility requirements

- 3.19 Most stakeholders have suggested that Principal applicant /Applicant should only be a licensed entity. The eligibility criteria should be defined to ensure that only eligible and licensed entities can apply for the RS as 'Applicant'. Further, there should not be any mandate on licensed service providers to partner any entity for testing any product/service under RS. The stakeholders have proposed that entities seeking participation in the RS for testing products should be obligated to enter into an agreement with an Indian TSP. Only after forming this agreement, they should be allowed to jointly apply for the RS. One of the stakeholders has suggested a dual approach involving TSP-controlled RS and Government-controlled RS. One stakeholder asserted that TSPs are already obligated under the licensing framework to extensively test and comply with standards before launching new products and services and therefore they shouldn't be subjected to those stringent conditions mentioned in the draft RS framework of CP. It was also suggested that other entities, (referred as Applicant) testing their innovations should approach TSP to access network resources.
- 3.20 On the contrary, the stakeholders representing the consumers were of the opinion that RS should not remain limited to TSPs. There are several challenges around service usage, including QoS, grievance redressal, fraud detection & prevention, dispute resolution etc. A range of other entities (not limited to TSPs) might be interested in working on innovations in these areas. The sandbox must provide opportunities to such entities as independent users of RS and must not be forced to tie up with TSPs. Another stakeholder argued against putting additional obligations for Applicants to justify direct application for RS testing and proving efforts to collaborate with an existing TSP might not be conducive for newer or unlicensed businesses to flourish.

3.21 One stakeholder expressed the view that if startups or innovators apply for testing, they should receive guidance throughout the entire procedure. Agreements between them and the TSPs must be executed through a draft Reference Interconnect Offer (RIO) or an agreement under the oversight of the Regulator/Licensor.

ii. Views of the stakeholders on essential conditions to be fulfilled by Principal Applicant/Applicant

3.22 In response to the CP, the stakeholders have submitted their comments on some of the essential conditions that are to be fulfilled by Principal Applicant and Applicant. The noteworthy submissions and the views of the Authority on the same have been discussed in subsequent paragraphs. The comments of the stakeholders for discussion purpose have been grouped into following:

- i. Minimum Net-worth Criteria
- ii. Scope of Testing
- iii. Data Protection/Privacy
- iv. Consent from participating customers
- v. Generic Exemptions to TSPs
- vi. Other conditions covering - Genuineness of Innovation, Genuineness of testing, Direct benefit to user, Realistic scenario, Transparency, Demonstrate additional protection, Testing readiness, Deployment post testing, Statutory & legal issues and Publication of information.

3.23 **Minimum Net-worth Criteria:** The draft RS framework that was floated for consultation of stakeholders had mentioned that Applicant shall have a minimum net worth of Rs. 25 lakhs as per its latest audited balance sheet. One of the stakeholders has submitted that the minimum net worth requirement for participating in a sandbox may be counterproductive to the objective of facilitating innovations. Depending on the proposed innovation, if the applicant possesses required financial

and technical resources to conduct the RS testing, it should be allowed RS testing without looking into its net worth criteria. Another stakeholder has put forward a view that there should not be any net worth criteria for startup/MSME/students. Another stakeholder has suggested that the proposed minimum net worth may be reviewed downward to Rs 5 lakh.

- 3.24 **Scope of Testing:** A few stakeholders have submitted that the operation of RS should be on a non-protection and non-interference basis i.e., it should not affect or interfere with the live operations of networks. If any such event occurs, RS should be immediately shut down. A stakeholder has further recommended that RS-based testing may be conducted on a technologically limited and restricted basis. For instance, for a particular project, a maximum of up to 30 BTSs/eNodeBs/gNodeBs (cumulative) and 500 User Equipment (UEs) should be permitted per LSA under RS testing. The amount of Optical Fiber Cables (OFC) laid, Data Centre capacity employed, and cable landing station used should be decided on a case-by-case basis by DoT.
- 3.25 **Data Protection and Privacy:** Few stakeholders have emphasized the need to safeguard the privacy of users' personal information. They have stressed the importance of securely storing and disposing of data generated during sandbox testing. It has also been suggested that data sets used within the sandbox environment be anonymized.
- 3.26 **Consent from participating customers:** One of the stakeholders has stated that prior consent of customers of TSPs should be taken by the concerned TSP for its product or solution under test if such a need arises for any use case. However, another stakeholder has expressed the contrary view and has stated that the Principal Applicant/Applicant should not be mandated for obtaining explicit consent from the selected customers as the product/service offered to them are only for testing purposes and moreover associated risk of using such product is also being conveyed to such customers.

3.27 **Generic Exemptions to TSPs:** A stakeholder has expressed the view that the approval-based mechanism for every RS may lead to delays and queues. Once a TSP establishes and manages an RS end-to-end, it should be exempt from the requirement of approvals for individual test cases. The stakeholder further suggested that, following the permission to set up the RS, the TSP should not require additional approval for testing use cases and a straightforward notification to relevant authorities should suffice.

3.28 **Other conditions covering - Genuineness of innovation, Genuineness of testing, Direct benefit to user, Realistic scenario, Transparency, Demonstrate additional protection, Testing readiness, Deployment post testing, Statutory & legal issues and Publication of information:** Many stakeholders have opposed introduction of these clauses in essential conditions on the ground that these are quite onerous and providing supporting documents will be difficult for Principal Applicants / Applicants. One of the stakeholders has stated that the Regulator should specify the rationale of how it determines whether the solution is innovative enough and there is a genuine need to test. TRAI should lay down standards in advance so that entities have clarity on when to approach a sandbox. Another stakeholder suggested that to judge the genuineness of innovation, certain parameters like impact of innovation on society, technological achievement, team capability, market knowledge and consumer welfare should be clearly mentioned. Stakeholders have thus expressed that the conditions on genuineness of innovation and/or genuine need for testing; realistic scenarios etc. should be retracted and there should be a free flow of ideas and thought processes in the Regulatory Sandbox.

C) Analysis of the issues and views of the Authority

i. Analysis of the issues and views of the Authority on eligibility requirements.

- 3.29 While the Authority anticipates that most RS applicants will be able to collaborate with TSPs, it also envisages scenarios where an Applicant, despite possessing a strategically significant innovation for testing, may not be able to tie-up with a TSP. To facilitate the entry of such startups and innovators, the Authority has incorporated a provision encouraging these entities to establish Regulatory Sandboxes by directly approaching the approving authority. In cases where DoT deems an innovation to have widespread impact on society, economy, and technology, they can intervene and ask the TSPs to provide the RS testing facility to such deserving innovations. However, this might result into a situation where a large number of entities may opt to approach DoT directly. To discourage this, Applicants are obligated to furnish sufficient justifications for applying directly, along with documents indicating their efforts to establish ties with a Principal Applicant.
- 3.30 Acknowledging the inputs shared by the stakeholders regarding the eligibility requirements, and after internal deliberations, the Authority has incorporated some amendments in the Eligibility & Essential Conditions to be fulfilled by the Principal Applicant and Applicant. The Authority is of the view that for sake of simplicity both of these sections shall be merged and named as “Eligibility & Other essential Conditions”. The revised framework now allows Applicants to request sandbox testing, contingent upon their submission of an in-principal approval/consent from the Principal Applicant to test the products on their network. Furthermore, licensor's discretion to mandate RS testing on a TSP's network may be incorporated, only for exceptionally deserving innovations which may have potential widespread impact on society, economy, and technology.

ii. Analysis of the issues and views of the Authority on essential conditions to be fulfilled by principal applicant and applicant.

- 3.31 In the draft RS framework attached with the CP, the Authority had proposed a minimum net worth of Rs. 25 lakhs to discourage non-serious players. However, the Authority agrees with stakeholders' comments that such requirements can act as barriers in promoting innovation. For SME sector and start-up companies or for the entities that are mainly involved in research activities and have no commercial operations, it will create an artificial entry barrier. The Authority has therefore removed the minimum net-worth criteria in the framework that is being recommended as part of these recommendations.
- 3.32 The Authority agrees with the stakeholders' suggestions on the need to define a finite scope for the sandbox environment as the RS operations can have potential impact on the broader telecom networks and customer experiences. The Authority has accordingly refined the concerned text in the framework that is being recommended as part of these recommendations.
- 3.33 To address concerns of few stakeholders about data privacy and security, the Authority in the draft RS framework had suggested that applicants must maintain records of all testing steps and data for at least one year after exiting the sandbox environment. This measure ensures transparency and accountability. As Government has recently created a new legal framework for protection of Personal Data, the Authority has also incorporated conditions in the revised RS framework that the storage and disposal of data generated during RS testing should align with the Digital Personal Data Protection Act, 2023, and any applicable rules, regulations, or orders issued under this Act. The Authority is of the view that Principal applicant /Applicant should demonstrate in application as to how the Sandbox testing would prioritize the protection of consumer interests and prevent any harm to consumers. If the case requires, only such customers should be allowed to be on board who have given consent voluntarily.

3.34 After reviewing stakeholder comments, the Authority recognizes that there can be several use cases that can be tested by getting common exemptions. Granting individual RS approvals for such exemptions in each case could impose unnecessary administrative burdens and stifle innovation. To address this issue, a provision of granting a set of Generic Exemptions (GE) to TSPs for conducting RS tests for multiple use cases under specified conditions has been incorporated in the RS framework that is now been recommended. This approach will simplify the RS approval process and also lessen the administrative load on decision makers as well as applicants by eliminating the need for separate application/permission for each use case. Accordingly, in the RS framework that is being recommended as part of these recommendations, the Authority has made amendments to include provision of granting a set of Generic Exemptions to TSPs for conducting RS tests for multiple use cases requiring similar exemptions. The incorporated provision also acknowledges that some specific use case RS testing scenarios may still require further regulatory exemptions beyond the generic ones already granted. In such instances, applicants will be required to submit separate applications following the prescribed procedure. This provision ensures that, while providing generic exemptions, regulatory authorities can still address further specific exemption needs, if any, on a case-to-case basis. It strikes a balance between streamlining the process for generic requirements and retaining the flexibility to address distinct situations.

3.35 Several stakeholders' have commented against inclusion of the clauses of genuineness of testing, direct benefit to user, realistic scenario, transparency, demonstrate additional protection, and testing readiness – which were earlier incorporated in the draft RS framework that was floated for consultation. The Authority agrees with the submissions made by the stakeholders that such clauses in 'essential conditions' will make the conditions quite onerous. Further, evaluating applications objectively based on these criteria may be challenging and can include

a high degree of subjectivity and therefore, could potentially result in disputes, hindering the effective operation of the RS framework. Therefore, the Authority has refined the recommended RS framework by removing some of these clauses to simplify the evaluation process, reduce subjectivity, and ensure smoother implementation. The Authority is also of the view that at the stage of RS testing, the requirement to submit a transition strategy (on deployment post testing), is not required and accordingly the same has been removed from the application requirement.

3.36 For further simplification and ease of understanding of the RS framework clauses ‘Statutory & legal issues’ and ‘Publication of information’ have been shifted to a new section “Other Conditions”.

iii. Analysis of the issues and views of the Authority on supporting documents required to be submitted with application.

3.37 In the draft RS framework attached with the CP, the Authority mandated the submission of several supporting documents along with application. Since the requirement of the documents is basically to support eligibility of Principal applicant / Applicant for RS testing, the same has now been refined in line with the reduced/simplified eligibility conditions. The RS framework that is now been recommended has reduced the number of supporting documents required to be submitted with application. The Authority is of the view that this will help small innovators and start-up companies as a tedious documentation requirement for proving their eligibility might dissuade them from participating in RS testing.

3.38 The Authority in the draft RS framework that was attached with CP for seeking views of the stakeholders has used DoT/TRAI at several places as it was envisaged that either DoT or TRAI, both can entertain applications for RS testing of products. However, the Authority is of the view that to avoid stakeholder confusion and to facilitate them with a single front interface for RS testing, only one authority should be responsible for granting permissions in the RS framework. Therefore,

instead of DoT/TRAI, the Authority has used only DoT in the framework that is now recommended.

D) Recommendations of the Authority

- 3.39 Based on the aforesaid, **the Authority recommends the following text to be adopted under sections III. ELIGIBILITY AND OTHER ESSENTIAL CONDITIONS and IV. SUPPORTING DOCUMENTS REQUIRED TO BE SUBMITTED WITH APPLICATION:**

III. ELIGIBILITY & OTHER ESSENTIAL CONDITIONS:

7. *Any licensed Telecom Service Provider, called Principal Applicant, shall be eligible for testing in the Regulatory Sandbox subject to fulfilment of laid down conditions. The other entities, called Applicant, willing to utilize the Sandboxing facilities of any licensed service provider may engage with Principal Applicants. In case licensed service providers are applying in their own capacity they need to fulfil conditions meant for Principal Applicant and Applicant both. The Applicant can also apply for testing in the Regulatory Sandbox provided they attach an in-principal approval/consent from the Principal Applicant indicating the latter's consent to test the products on their network.*
8. *In cases where the Applicants are unable to secure consent of a Principal Applicant on reasonable terms for association OR the product does not necessitate associating with a Principal Applicant, the Applicant can apply directly attaching the documents showing efforts made for tying up with a Principal Applicant. After due evaluation of such applications, the deserving innovations that may have widespread impact on society, economy and technology, the licensor will have a right to mandate RS testing on a TSP's network, including important terms and conditions of such testing.*
9. *The essential conditions required for testing under Regulatory Sandbox and details to be provided in applications are as follows:*
 - i. **Only Indian National or entities will be eligible:** *Principal Applicant / Applicant should be an Indian National or entity incorporated as a company (as defined in Companies Act, 2013) or registered as a partnership firm (registered under section 59 of the Partnership Act, 1932) or a limited liability partnership (under Limited Liability Partnership Act, 2008) or such Research*

& Development (R&D) Institutions that have been listed in the latest directory⁷ of such institutes published by the Department of Science & Technology (DST).

- ii. **Limited prior testing:** Before applying for testing in sandbox, limited testing of the product in offline/laboratory/WiTe Zone environment should have been carried out by the Principal Applicant / Applicant. The details of the same should be provided in the application by the Principal Applicant / Applicant.*
- iii. **Regulatory compliance & exemptions sought:** The Principal Applicant / Applicant should expressly spell out what exemptions from the existing regulatory regime pertaining to the product are sought under Sandbox testing, along with the specific testing period for which these exemptions are required. It should also mention the authority which is responsible for permitting the required exemptions. Any other facilitation or resource sought, including spectrum, for the sandbox testing must also be specified. For exemptions required from other ministries, autonomous bodies, or regulators outside of DoT's jurisdiction, DoT will establish an institutional mechanism to facilitate the acquisition of such permissions. The Principal Applicant / Applicant seeking these exemptions should follow a parallel process with the respective entities and provide them all necessary information as required by such entities.*
- iv. **Scope of testing:** To prevent any negative impact on the wider telecom networks or the customers, the Sandbox environment should have a finite scope which is appropriate enough for testing the product. The Principal Applicant / Applicant must clearly define the scope of testing for the product. Scaling-up of the scope during the RS validity period can be permitted by DoT after due evaluation of the justification furnished along with such request.*
- v. **Risk Mitigation:** The product should have proper risk management strategy to incorporate appropriate safeguards to mitigate and control potential risks to any market participants/users/customers/government that may arise from the testing of the product in live environment and shall propose*

⁷ <https://dst.gov.in/sites/default/files/R%20%26%20D%20Directory%202021.pdf>

appropriate safeguards to manage the risks and contain the consequences of failure.

- vi. **Consumer protection:** The Principal Applicant / Applicant should demonstrate in application as to how the Sandbox testing would prioritize the protection of consumer interests and prevent any harm to consumers. Customer onboarding and private/public data processing should align with the provisions of the Digital Personal Data Protection Act, 2023, and any applicable rules, regulations, or orders issued under this Act. If the case warrants, only such customers will be allowed to be onboarded who have given specific consent voluntarily.*
 - vii. **Monitoring and evaluation:** The Principal Applicant / Applicant, should precisely define the test parameters, control boundaries, testing site, significant milestones, and anticipated outcomes for the proposal and include a mechanism for monitoring and evaluating the testing process to ensure that the objectives of the testing are met.*
 - viii. **Exit strategy:** The Principal Applicant / Applicant should submit a clear exit strategy that outlines the process for exiting the testing phase.*
- 10. Generic RS exemptions to TSPs to carry out RS testing for multiple use cases requiring similar exemptions:** *DoT may permit the Principal Applicant with a list of generic exemptions applicable to RS testing for multiple use cases, contingent on the fulfilment of specified conditions that the licensor or regulator may prescribe. Based on the generic exemptions provided, the Principal Applicant can enrol several Applicants for RS testing of various use cases within the ambit of such generic exemptions and will not be required to approach DoT for seeking permission for each use case of RS testing. However, the Principal Applicant will be required to intimate DoT about the details of each such RS use case, start of each individual RS testing and submit reports for each such RS testing. In case it is required to seek any specific regulatory exemption that extends beyond the generic exemptions for any particular RS testing, the Principal Applicant will be required to submit a separate application in line with the procedure prescribed under this RS Framework.*

IV. SUPPORTING DOCUMENTS REQUIRED TO BE SUBMITTED WITH APPLICATION

11. *The supporting documents required to be submitted with applications are as follows:*

- i. Certificate of Incorporation / Registration as a company (as defined in the Companies Act, 2013) or a partnership firm (registered under section 59 of the Partnership Act, 1932) or a limited liability partnership (under the Limited Liability Partnership Act, 2008. Individual Indian nationals will be required to submit any government issued identity document that is valid as KYC document for taking a telephone/mobile connection.*
- ii. Details of what licensing/regulatory relaxations are sought for testing purposes.*
- iii. Report on prior lab/field testing carried out on the product.*
- iv. Details of the potential risks to market participants/users/customers/government due to any exemption granted or otherwise and risk management strategy and proposed safeguards to mitigate such potential risks.*
- v. Testing plan, test parameters, control boundaries, testing site, significant milestones, anticipated outcomes, and monitoring and evaluation mechanism for the proposal.*
- vi. Exit strategy outlining the process for exiting the RS testing phase.*

3) “Application Evaluation Criteria” - Section VI and “Application and Approval Process” - Section VII

3.40 A clear and efficient application and approval process is essential for encouraging participation. The criteria for evaluating applications serve as a benchmark for gauging the merit of proposed innovations. A well-defined set of evaluation criteria ensures that innovations align with the overall objectives of the RS. It also streamlines the entry of innovative entities into the sandbox, reducing barriers to experimentation. Keeping this in mind and to encourage a diverse range of stakeholders to contribute to the sandbox ecosystem, the Authority, in the draft RS

framework that was floated for consultation with stakeholders, had suggested a well-defined application and approval process and application evaluation criteria.

3.41 The text on Application Evaluation Criteria and Application and Approval Process that was proposed in the draft CP, the comments of the stakeholders on the same, and the views of the Authority thereof are summarized in the paras below.

A) Text that was proposed for these sections in draft RS framework of CP

VI. APPLICATION EVALUATION CRITERIA

9. *The applicant may be evaluated based on the parameters given below:*
- i. Complete Application form along with all supporting documents*
 - ii. Profile of the applicant*
 - iii. Arrangement between Principal Applicant and Applicant, if any.*
 - iv. Required financial and technological capability to take part in the sandboxing process.*
 - v. How the innovative product/service/application adds significant direct or indirect value to the existing offering in the market.*
 - vi. Identifiable benefits (direct or indirect) to the retail or enterprise customers.*
 - vii. Potential benefits of the product/service/application to the disadvantaged sections of the society, such as women and tribal populace, role of the said product/service/application in empowerment of the masses, and the impact of product/service/application in furthering digital inclusion.*
 - viii. Offline testing of the product/service/application and results thereof prior to requesting sandbox.*
 - ix. Defined mechanism for monitoring and evaluating the testing process including the test parameters, control boundaries, testing site, significant milestones, and anticipated outcomes*
 - x. Proposed strategy for exiting the testing phase and launching the product/service/technology in the wider market.*
 - xi. Ability to deploy the product/service/application on a broader scale and proposed transition strategy for same.*
 - xii. Defined grievance redressal mechanism and user rights.*
 - xiii. Mechanisms suggested for disclosure of the potential risks to participating users and process suggested to take explicit consent from participants.*
 - xiv. Any other factors considered relevant by DoT/TRAI.*

Provided that failure to fulfill one, or more than one, of the essential eligibility conditions as outlined in Part IV above, may entail outright rejection of the sandbox application.

Provided further that DoT/TRAI or its designated agency, may waive off any essential condition(s) on need basis if it finds that the product/service/application may have substantial positive impact on society/economy, if deployed on wider scale after successful sandbox testing.

VII. APPLICATION AND APPROVAL PROCESS:

10. *The application and approval process will be as follows:*
 - i. *Applicant or Principal Applicant, as the case may be, desiring to test under Regulatory Sandbox in India shall make an application to the DoT/TRAI electronically in the specified form.*
 - ii. *The application shall be accompanied by a non-refundable processing fee of ten thousand rupees.*
 - iii. *The Principal Applicant/ Applicant shall ensure that the specified eligibility criteria are satisfied while submitting the application to DoT/TRAI. The necessary supporting documents and undertaking to substantiate its claim of fulfillment of Essential Conditions as detailed above should be provided with the application. The application form shall be signed by the officer duly authorized by the company board. The complete application must be submitted to: XXXXXX or by email at XXXXXX.*
 - iv. *DoT/TRAI will transparently communicate with the applicant during evaluation phase of the sandbox application, and during the testing phase.*
 - v. *At the “**Application Stage**”, DoT/TRAI shall review the application and inform of its potential suitability for a sandbox within 30 working days from the submission of the complete application. DoT/TRAI may issue appropriate instructions to the Principal Applicant/ Applicant according to the specific characteristics and risks associated with the proposed product/service/application. DoT/TRAI, if necessary, may also consult Service Providers, domain experts, etc. to evaluate the application. If the product/service/application has significant impact on any sector, then consultations may be held with the concerned ministries and sectoral regulators also.*
 - vi. *At the “**Evaluation Stage**”, DoT/TRAI shall work with the Principal Applicant/ Applicant to determine the specific regulatory requirements and conditions (including test parameters and control boundaries) to be applied to the proposed product/service/application in question. The Principal Applicant/ Applicant shall then assess if it is able to meet these requirements. If the Principal Applicant/ Applicant is able and willing to meet the proposed regulatory requirements and conditions, the applicant shall be granted permission to develop and test the proposed innovation(s) in the sandbox. However, in case there are certain conditions licensing or regulatory which may not be fulfilled due to design aspect of that product/service/application, DoT/TRAI shall evaluate the possibility of granting exceptions for limited period so that to fulfill testing requirements. DoT/TRAI will establish a mechanism to grant such exemptions expeditiously, if feasible, within 45 days or communicate the reasons of rejection. The*

exemptions are to be granted considering potential of product/service/application, risk of causing potential harm to consumer or government interests, risk of misusing the exemption etc. In certain cases, exemptions may be required from other ministries or sectoral regulators or other entities, in such cases DoT/TRAI shall establish mechanism to approach such entities and coordinate for grant of exemptions to Principal Applicant/Applicant in time bound manner preferably 60 days. However, Applicant or Principal Applicant may not claim any right on an exemption granted by any entity on pretext that it has been granted in a previous case. DoT/TRAI decision on granting exemptions by itself or by other entities and duration for granting such exemptions, shall be final.

- vii. Upon approval, the application shall proceed towards the “**Testing Stage**”. The participant shall disclose to its users that the product/service/application shall operate in a sandbox and the potential key risks associated with the product/service/application. The Principal Applicant is also required to obtain the user’s acknowledgement that they have read and understood the risks. The Principal Applicant shall define a clear mechanism to take explicit consent of participating users, if required. Documentary proofs of such communications/consents may be submitted to Licensor/Regulator.
- viii. During the testing stage, the applicant shall take prior approval from DoT/TRAI to affect material changes, if any, to the product/service/application.
- ix. DoT/TRAI will designate one officer who will have primary responsibility of coordinating the sandbox testing. Each applicant shall assign a contact person to coordinate with a designated officer of DoT/TRAI.
- x. The duration of the sandbox testing stage shall be a maximum of twelve months. In exceptional cases which demonstrate requirement for longer durations in their application, the duration of more than twelve months maybe allowed. On request of the applicant, DoT/TRAI can extend the duration on case-to-case basis after detailed examination.
- xi. In case an application is rejected at any stage, the applicant shall be informed accordingly. The reasons for rejection could include failure to meet the objective of the sandbox or any of the eligibility criteria. The applicant may re-apply for the sandbox when it is ready to meet the objective and eligibility criteria of the sandbox, subject to an appropriate cooling off period, if any, as decided by DoT/TRAI.
- xii. Principal Applicant/ **Applicant** must undertake to keep record of all testing steps/consent records for the period not less than one year after exit from Sandbox environment.

B) Views of the stakeholders

- 3.42 The issue of the non-refundable processing fee for the RS garnered significant attention from stakeholders, leading to diverse perspectives on the proposed fees for sandbox testing. In the CP's draft RS framework, a non-refundable processing fee of INR 10,000 was suggested for depositing with the application. Stakeholders presented varying views on this fee, with some advocating for a reduction or elimination to promote greater participation emphasizing that a minimal entry barrier would encourage more individuals and organizations to explore the potential of the sandbox. In contrast, one stakeholder recommended a fivefold increase in the proposed processing fee, aiming to ensure the commitment and seriousness of participants. This stakeholder's submission was based on the rationale that a higher fee would create a more focused and productive environment, leading to substantial outcomes and efficient resource utilization within the sandbox.
- 3.43 One of the stakeholders emphasized that the complete processes should be end-to-end digitized, including application submission, notifications, approval protocols, and the exchange of requirements. In the discourse on refining the application process, a stakeholder suggested that the TRAI/DoT should explicitly outline the obligation to communicate with the Principal applicant/Applicant, providing an opportunity to rectify any deficiencies in the application, such as supplying additional information. They emphasized the necessity of specifying a definite timeline within which these identified shortcomings should be rectified.

C) Analysis of the issues and views of the Authority

- 3.44 The varied perspectives of stakeholders on the processing fee underscore the importance of determining the optimal fee for RS testing. While a lower fee may encourage broader participation, it carries the risk of diluting the sandbox's focus and resources by admitting non-serious players. Conversely, a higher fee might discourage some

potential participants but could ensure a more committed and effective utilization of the sandbox. Recognizing the need for balance, the Authority acknowledges that finding the right equilibrium is vital for optimizing the sandbox's impact and ensuring its long-term success. As the processing fee of ten thousand rupees proposed in the draft framework is considered not excessively high, the Authority has retained the same. This approach seeks to strike a balance that maximizes participation without compromising the quality and effectiveness of the sandbox program.

3.45 The authority has taken note of the feedback provided by stakeholders regarding the imperative for complete digitalization of the processes involved in the RS operation. This proposal also resonates with the authority's understanding of the evolving landscape and the ongoing government emphasis on digitalizing the Government to Government (G2G), Government to Business (G2B) and Government to Citizen (G2C) services. Therefore, changes have been introduced into the “Application, Evaluation & Approval Process” of the RS framework that is now being recommended as part of these recommendations. It is incorporated in the RS framework that the DoT shall put in place an end-to-end digital process to handle RS applications and all related activities including intimations, approvals, sharing of information, monitoring, reporting requirements etc.

3.46 Few stakeholders have pointed out that the proposed draft RS framework did not explicitly provide for an opportunity for the Principal Applicant /Applicant to rectify the defects in the application, if any. The Authority agrees with the input from stakeholders, emphasizing the significance of granting the Principal Applicant /Applicant an opportunity to rectify any deficiencies in their application. In light of the suggestions put forth by stakeholders, the Authority has introduced a mechanism to address this concern and the updated framework now specifies that at the “Application Stage”, DoT shall review the application and inform any shortcomings to the Principal Applicant /Applicant

within 7 working days. The Principal Applicant /Applicant will submit necessary documents to eliminate the shortcomings within the next 10 working days.

3.47 The Authority has also merged sections VI and VII of draft RS framework namely - “APPLICATION EVALUATION CRITERIA” and “APPLICATION AND APPROVAL PROCESS” into one section which is been called as “APPLICATION, EVALUATION, AND APPROVAL PROCESS” in the RS framework that has now been recommended. Furthermore, the Authority is of the view that some clauses present in the "Application & Approval Process" section of the draft RS framework of CP need to be shifted under other sections of the revised framework to enhance clarity and coherence. This restructuring, where each section of the framework accurately reflects its respective content, will help stakeholders to better understand the framework.

D) Recommendations of the Authority

3.48 The **Authority recommends the following text to be adopted under sections V. APPLICATION, EVALUATION, AND APPROVAL PROCESS:**

V. APPLICATION, EVALUATION, AND APPROVAL PROCESS:

12. *The application and approval process will be as follows:*

- i. Principal Applicant and/or Applicant, as the case may be, desiring to test a product under Regulatory Sandbox in India shall make an application to the DoT electronically in the specified form. DoT shall put in place an **end-to-end digital process** to handle RS applications and all related activities including intimations, approvals, sharing of information, monitoring, reporting requirements etc.*
- ii. The application shall be accompanied by a **non-refundable processing fee** of ten thousand rupees.*
- iii. The necessary supporting documents and undertaking to substantiate its claim of fulfilment of eligibility and essential*

conditions as detailed under this RS framework should be provided with the application. The application form shall be signed by the officer duly authorized by the Company Board/Partner of the firm. The complete application must be submitted to: XXXXXX or by email at XXXXXX.

- iv. At the “**Application Stage**”, DoT shall review the application and inform any shortcomings to the Principal Applicant / Applicant within 7 working days. The Principal Applicant / Applicant will submit necessary documents to eliminate the shortcomings within the next 10 working days. DoT shall review the application and inform of its ‘**potential suitability**’ for a sandbox to Principal Applicant and/or Applicant, as the case may be, within 30 working days from the submission of the complete application.
- v. The application may be evaluated based on the eligibility conditions and the documents submitted in support thereof. At the “**Evaluation Stage**”, DoT shall work with the Principal Applicant / Applicant to determine the specific exemptions required from regulatory requirements and other conditions (including test parameters and control boundaries) to be applied to the proposed product in question. If the Principal Applicant / Applicant is able and willing to meet the proposed regulatory requirements and conditions, permission will be granted to develop and test the proposed innovation(s) in the sandbox. DoT will establish a mechanism to complete the ‘Evaluation Stage’ within 45 days⁸ and communicate the permission or reasons for rejection. In certain cases, exemptions may be required from other ministries or sectoral regulators (including TRAI) or other entities, in such cases DoT shall establish a mechanism to approach such entities and coordinate for grant of exemptions to Principal Applicant / Applicant in a time bound manner preferably within 60 days⁹.
- vi. Upon approval, the Principal Applicant / Applicant shall proceed towards the “**Testing Stage**”. DoT will designate one officer who will have primary responsibility of coordinating the sandbox testing. Each Principal Applicant / Applicant shall assign a contact person to coordinate with a designated officer of DoT. If during the testing stage, the Principal Applicant / Applicant is making any

⁸from the date the Applicant / Principal Applicant is informed about ‘potential suitability’ of his application for RS testing

⁹from the date the Applicant / Principal Applicant is informed about ‘potential suitability’ of his application for RS testing

material changes to the product which may alter the conditions/undertakings under which the approval was granted, prior approval from DoT will have to be taken.

4) “Waivers or Modifications to Rules” - Section VIII, “Validity Period” - Section IX, and “Revocation of Permission”- Section X of draft RS framework of the CP

- 3.49 **Waivers or Modifications to Rules:** The provision for waivers or modifications to rules acknowledges the dynamic nature of innovation. This flexibility allows regulators to adapt to unique circumstances and challenges presented by innovative technologies by allowing DoT the right to waive or modify conditions for the purpose of the test on a case-to-case basis. It strikes a balance between adhering to regulatory standards and accommodating the evolving needs of the DC sector.
- 3.50 **Validity Period:** Setting a validity period for sandbox participation ensures a structured timeframe for testing and evaluation. This time-bound approach encourages timely progress, prevents indefinite experimentation, and facilitates the efficient use of resources. The validity period is crucial for maintaining focus and achieving meaningful outcomes within a reasonable timeframe.
- 3.51 **Revocation of Permission:** The provision for revocation of permission adds a layer of accountability to sandbox participants. It establishes consequences for non-compliance, ensuring that innovations adhere to ethical, legal, and regulatory standards. The possibility of revocation acts as a deterrent against irresponsible experimentation and reinforces the importance of responsible innovation. Accordingly, the draft RS framework that was floated for consultation detailed various possibilities where DoT may revoke the permission granted for RS testing.

3.52 The text on waivers or modifications to rules, validity period, and revocation of permission that was proposed in the draft CP, the comments of the stakeholders on the same, and the views of the Authority thereof are summarized in the paras below.

A) Text that was proposed for these sections in draft RS framework of CP

VIII. WAIVERS OR MODIFICATIONS TO RULES

11. *DoT/TRAI shall have the right to waive or modify conditions for the purpose of the test on a case-to-case basis.*

IX. VALIDITY PERIOD

12. *The permission granted under the regulatory sandbox will have a validity period of up to 12 months for the applicant to test its product/service/application. At the end of the validity period, the applicant will stop testing his product/service/application. The approval of product/service/application for testing under regulatory sandbox does not mean (or guarantee) approval from DoT/TRAI to use this product/service/application after the testing period.*

13. *An extension of validity period can be granted by competent authority based on prevalent conditions of tests, potential benefits, cost involved, complexity of test etc.*

X. REVOCATION OF PERMISSION

14. *DoT/TRAI may revoke the permission so granted at any time if it is of the view that-*

- i. The permitted applicant is failing, or is likely to fail, to satisfy the conditions established above; that guarantee qualification to the Regulatory Sandbox.*
- ii. The permitted applicant has committed a contravention of the regulations, or any rules, guidelines, or standards or exemptions allowed if any.*
- iii. The conducted test conflicts with the exigencies of the public interest.*
- iv. The activities carried out do not meet the conditions given in the permission letter or are in violation of the provisions of the applicable laws.*
- v. The Applicant/Principal Applicant has submitted forged undertakings/records/documents.*

Provided that before revoking the permission, the applicant shall be given an opportunity of being heard.

15. *An applicant may also file for early termination of the proposal in DoT/TRAI if it is felt that the proposal shall not be able to meet the desired objective. DoT/TRAI shall consider the request on merits and advise the applicant accordingly subject to such conditions as it deems fit.*

B) Views of Stakeholders

- 3.53 One stakeholder has emphasized the importance of limiting the usage and scaling-up of services offered by TSPs within the RS during its validity period, strictly for testing purposes. They strongly advocated for prohibiting any commercial utilization or scaling-up of these services throughout the RS validity duration. Furthermore, the stakeholder proposed that considering the RS operates within the existing regulatory framework and operates on a limited trial basis, a maximum validity period of 6 months should adequately accommodate the testing requirements.
- 3.54 Another stakeholder expressed its concern regarding the “revocation of permission” section of the proposed draft of the RS framework. The stakeholder has emphasised on the importance of providing clear and publicly accessible explanations in cases where permission is revoked. Furthermore, they advocated for a higher level of transparency, proposing that the regulatory body should disclose reasons for rejecting an application in the public domain.

C) Analysis of the issues and views of the Authority

- 3.55 Few stakeholders have advocated for empowering TSPs themselves to exercise authority in waiving or modifying conditions on a case-by-case basis, albeit with prior intimation to the DoT. However, after careful deliberation and recognizing the sensitivity and significance of this aspect within the RS framework, the Authority has retained its stance that the discretion for waivers or modifications should remain vested solely with the DoT or any other entity authorized by it. This decision is grounded in the need to maintain a structured and regulated environment within the RS, ensuring that the process remains under the purview of DoT, thereby upholding the integrity of the regulatory and licensing framework. Further, the Authority has already provided for an alternative where generic exemptions can be taken and multiple

use cases can be tested under the same. This will give the TSPs the required flexibility to modify conditions on case-to-case basis within the overall generic exemptions granted to them.

- 3.56 Acknowledging the inputs shared by the stakeholders regarding the commercial usage or scaling-up of services during RS testing, the Authority has incorporated some amendments in the " Validity Period" section of the RS framework that is now being recommended as part of these recommendations. The revised framework now explicitly prohibits any commercial usage or scaling-up of services tested by TSPs during the RS validity period, aligning with stakeholders' feedback.
- 3.57 To address the stakeholder concern regarding maximum validity period of RS testing, the Authority maintained its position on a 12-month validity period while offering further clarity. The Authority explicitly clarified in the "Validity Period" section of revised RS framework that an applicant can file for early completion of the testing before expiry of the validity period if the testing is completed successfully. This clarification offers applicants the flexibility to expedite their testing and successfully accomplish their objectives within a shorter timeframe. Simultaneously, the Authority's retention of the 12-month validity period with possibility of further extension on case-to-case basis, provides applicants an extended duration in case they require further comprehensive testing and thorough evaluation of their products within the RS framework.
- 3.58 Recognizing the concerns articulated by stakeholders regarding the transparency surrounding the "revocation of permission" section in the proposed draft RS framework of CP, the Authority has introduced desired refinements. In the RS framework that has now been recommended as part of these recommendations, it is incorporated that "In all cases of revocation of permission, appropriate reasons will be provided and the same will be communicated to the Principal Applicant and/or Applicant, as the case may be." This amendment aligns with the stakeholders' aspirations for transparency, ensuring that reasons for revocation are transparently communicated and that applicants have

an opportunity to voice their views, thus establishing a balanced and just process within the RS ecosystem.

3.59 As has been explained in para 3.2, the Authority has refined and simplified the framework. For better understanding, some of the sections have been merged with other sections or brought under a different section - “Other Conditions”. In line with this approach, “Waiver or Modification to Rules” has been brought under the new section “Other Conditions”. Certain clauses like the one related to maintaining records of testing data, publication of information, statutory and legal issues that were present under different sections of the draft RS framework, have also been brought under section Other Conditions in RS framework that is now been recommended.

D) Recommendations of the Authority

3.60 The **Authority recommends the following text to be adopted under clause VI. OTHER CONDITIONS, VII. VALIDITY PERIOD, VIII. REVOCATION OF PERMISSION:**

VI. OTHER CONDITIONS

13. **Testing data:** *The Principal Applicant / Applicant shall be required to keep record of all testing steps/data/consent records for the period not less than one year after exit from Sandbox environment. Data generated during RS testing should be stored and disposed of in a secure manner.*
14. **Publication of information:** *The DoT shall reserve the right to publish any relevant and generic information about the Regulatory Sandbox applicants on its website, for the purposes it deems fit, without revealing any proprietary/intellectual property rights related information.*
15. **Statutory and Legal Issues:** *DoT shall not be liable for any acts of omissions, commissions, breaches, or any kind of culpability arising out of or in relation to the sandbox process and any liability arising as such will be borne by the Principal Applicant and/or Applicant, as the case may be.*
16. **Waivers or modifications to rules:** *DoT shall have the right to waive or modify the conditions of this framework.*

VII. **VALIDITY PERIOD**

17. *The permission granted under the regulatory sandbox will have a validity period of up to 12 months for the Principal Applicant / Applicant to test its product. At the end of the validity period, Principal Applicant / Applicant will stop testing of the product. Commercial usage of the product tested by Principal Applicant / Applicant in the RS will not be allowed during the RS validity period.*
18. *An **extension of validity period** can be granted by competent authority based on prevalent conditions of tests, potential benefits, cost involved, complexity of test etc.*
19. *The Principal Applicant / Applicant can file for **early completion** of the testing before expiry of the validity period if the testing is completed successfully. The Principal Applicant / Applicant may also file for **early termination** of the proposal in DoT if it is felt that the proposal shall not be able to meet the desired objective. DoT shall consider the request on merits and advise the Principal Applicant / Applicant accordingly, subject to such conditions, as deemed fit.*

VIII. **REVOCATION OF PERMISSION**

20. *DoT may revoke the permission so granted for RS testing at any time if it is of the view that -*
 - i. *The permitted Principal Applicant / Applicant is failing, or is likely to fail, to satisfy the conditions/undertakings established under this RS framework; that qualified it to the Regulatory Sandbox testing permission.*
 - ii. *The permitted Principal Applicant / Applicant has committed a contravention of the regulations, or any rules, guidelines, or standards beyond the exemptions allowed, if any.*
 - iii. *The conducted test conflicts with the public interest.*
 - iv. *The Principal Applicant / Applicant has submitted forged undertakings/records/documents.*

*Provided that before revoking the permission, the Principal Applicant / Applicant shall be given an **opportunity of being heard**. In all cases of revocation of permission, appropriate reasons will be provided and the same will be communicated to the Principal Applicant / Applicant.*

5) Completion of Testing & Reporting - Section XI

- 3.61 Specifying a clear and comprehensive procedure for the completion of testing and reporting by RS applicants within the draft RS framework serves as a structured roadmap, guiding applicants about the process to be followed for conclusion of their testing phase and also about the subsequent reporting obligations. By outlining a systematic approach, the framework ensures uniformity and consistency in how participants conclude their RS initiatives. This is instrumental not only for the efficient administration of the sandbox but also for the regulatory oversight and evaluation of the RS outcomes. Accordingly, the draft RS framework that was floated for consultation detailed procedure for the completion of testing and reporting requirements for RS testing.
- 3.62 The text on Completion of Testing & Reporting that was proposed in the draft CP, the comments of the stakeholders on the same, and the views of the Authority thereof are summarized in the paras below.

A) Text that was proposed for these sections in draft RS framework

XI. COMPLETION OF THE RS TESTING AND REPORTING

16. *On completion of the allocated time or size of the proposal specified, the applicant shall submit a report to the DoT/TRAI within 60 days on how the proposal met the objectives along with feedback from the stakeholders and such other information or details as specified. The applicant shall also submit a plan of action as to what amendments in the extant licensing/regulatory framework are required, along with a time frame for proposed commercial launch of the product/service/application.*

B) Views of Stakeholders

- 3.63 Few stakeholders have proposed that the participant should be required to submit the final report to the Advisory Committee consisting of the Regulator, TSPs and licensor. The standard template for report submission by Principal Applicant /Applicant should be issued by DoT. Another stakeholder stated that Applicants should be mandated to send

status reports on a periodic basis in a standard template through an online portal, enabling DoT intervention only if specific issues arise, aiming to avoid delays in the commercial rollout.

C) Analysis of the issues and views of the Authority

- 3.64 The Authority underscores the need for a comprehensive reporting mechanism to effectively oversee the progress of RS initiatives. Structuring the capture and analysis of critical data points in reports, allows policy makers to evaluate the impact, challenges, and successes of sandbox projects. A thorough report should encompass key performance indicators, adherence to predefined objectives, and any encountered deviations during the testing phase. This data not only aids licensor/regulator in assessing the efficacy of the RS but also facilitates evidence-based decision-making for future regulatory considerations. Furthermore, a robust reporting mechanism fosters open communication, enabling regulators to promptly address concerns and make informed adjustments to the sandbox framework, ultimately protecting the interests of participants, consumers, and the broader industry.
- 3.65 Accordingly, the Authority has made some refinements in the draft RS framework that was floated for consultation of stakeholders. In the framework that is now being recommended along with these recommendations, the Authority has introduced reporting requirements comprising of periodic and comprehensive reports. The Oversight and Governance body (referred to as Overseeing Body in the RS framework) has been given the discretion to decide whether periodic reports are required to be submitted for a particular RS testing. If required, it will also decide the frequency and format of such periodic reports. However, in all cases, after successful completion of testing or at the end of the validity period, the applicant shall submit a comprehensive report to the DoT within 30 days, detailing how the proposal met the objectives, along with feedback from stakeholders and any other specified information or details. The final report submitted by the applicant must also explicitly

state the results/outcomes of the RS testing performed, findings related to the tested service/product/application, KPIs customer feedback, complaints, concerns, and challenges during the testing period; Measures taken to overcome the challenges; A detailed description about the technology and network limitations, consumer protection and risk management frameworks; A summary of recommendations and findings about the testing experience shall also be included.

3.66 In the comprehensive report, a provision has been made for the applicant to submit a plan of action as to what amendments in the extant licensing/regulatory framework are required, along with a time frame for proposed commercial launch of the product. The final report should also mention the details of wrapping up of all activities that were done in the RS testing phase along with the settlement of all obligations (contractual, financial, and other commitments) related to all stakeholders including customers. It might happen that the dominant partner may ignore important concerns of the other partner and do not incorporate them in the report. To take care of such a possibility, the Authority had made a provision that all reports should preferably be signed jointly by the Principal Applicant and Applicant. In case of difference of viewpoint, separate reports may be submitted by Principal Applicant or Applicant.

D) Recommendations of the Authority

3.67 The Authority recommends the following text to be adopted under sections **IX. COMPLETION OF THE RS TESTING AND REPORTING:**

IX. COMPLETION OF THE RS TESTING AND REPORTING

21. *To ensure effective oversight and assessment of the sandbox, the entity who has made the application and who has been granted permission to carry out RS testing must establish a monitoring and reporting mechanism as mentioned below:*

- a. **Periodic Reports:** *An oversight and governance body will decide whether periodic reports are required to be submitted for a particular RS testing. If required, it will also decide the frequency and format of such periodic reports.*
- b. **Comprehensive report post RS testing completion:** *On successful completion of testing or at the end of the validity period, the Principal Applicant / Applicant shall submit a comprehensive report to the DoT within 30 days. The final report submitted by the Principal Applicant / Applicant must explicitly state the results/outcomes of the RS testing performed, findings related to the tested product, Customer feedback, complaints, concerns, and challenges during the testing period; Measures taken to overcome the challenges; consumer protection and risk management frameworks. The final report should also mention the details of wrapping up of all activities that were done in the RS testing phase along with the settlement of all obligations (contractual, financial, and other commitments) related to all stakeholders including customers.*

22. *All reports should preferably be signed jointly by the Principal Applicant and Applicant. In case of difference of viewpoint, separate reports may be submitted by Principal Applicant or Applicant.*

6) Oversight and governance body - Section XII

- 3.68 The establishment of an oversight and governance body is crucial for maintaining the integrity of the sandbox environment. This body plays a supervisory role, ensuring that the sandbox operates within defined parameters and adheres to ethical and regulatory standards. The oversight and governance body acts as a neutral arbiter, fostering trust among participants and regulators. In the draft RS framework oversight and governance structure for the RS testing were detailed and floated for consultation of stakeholders.
- 3.69 The text on oversight and governance body that was proposed in the draft CP, the comments of the stakeholders on the same, and the views of the Authority thereof are summarized in the paras below.

A) Text that was proposed for these sections in draft RS framework

XII. OVERSIGHT AND GOVERNANCE BODY

17. *DoT/TRAI or any other entity so authorized by it will oversee the sandboxing process and ensure that it is conducted in a transparent and accountable manner.*
18. *The oversight and governance of the sandboxing framework will be crucial to ensure its effectiveness and accountability. The overseeing body will establish a monitoring and evaluation framework to assess the performance of each sandboxing project and provide recommendations for improvement. The overseeing body may also provide necessary directions on potential regulatory implications of an innovative product or business model that is at an early stage of development. The Principal Applicant/Applicant must make necessary arrangements to make the Sandbox product/service/application accessible during testing, both physically and online, and provide all necessary tools, testers, and software necessary to monitor the product/service/application by the overseeing body. This will ensure that the sandboxing process is conducted transparently, and the overseeing body has the necessary resources to effectively oversee and evaluate the testing of innovative product/service/application.*

B) Views of the Stakeholders

- 3.70 Some stakeholders submitted that the oversight and governance body of RS should be set up as an Advisory Committee and not as a formal government body or department. It should be modular, with equal participation from the Regulator, the Licensor, and the TSPs. It should work based on needs, applications received and assessments of applications. The experts should gather whenever a decision on or review of a proposal needs to be taken. Another stakeholder has submitted that specific authority responsible for the oversight & governance mechanism of sandbox should be explicitly provided in the framework.

C) Analysis of the issues and views of the Authority

- 3.71 The success of the RS program is fundamentally tied to fostering innovation, the very support that energizes the startup ecosystem. Thus, it's critical to entrust the governance of the RS to an entity possessing expertise within the startup landscape. National Telecommunications Institute for Policy Research, Innovation, and

Training (NTIPRIT)'s mandate to work in area of policy research and innovation and its involvement with the startup ecosystem positions it as an ideal candidate to spearhead the oversight and monitoring of RS testing. Accordingly, the Authority suggests that post approval of applications for RS testing, the oversight, monitoring, and coordination of the RS testing should be entrusted to the National Telecommunications Institute for Policy Research, Innovation, and Training (NTIPRIT). To optimize the effective and smooth facilitation of the RS, the Authority recommends the involvement of representatives from the Telecom Engineering Centre (TEC) in the overseeing body as TEC possesses extensive expertise in telecommunications technologies and standards. TEC can also offer technical support to both the overseeing body and RS participants, addressing any technical issues that may arise during testing and ensuring alignment with the latest technological advancements. The Authority has also provided in the recommended RS framework that if required, representative(s) can also be drawn from Academic institutions. This will give flexibility to incorporate relevant academic expertise on emerging technologies.

- 3.72 The Overseeing Body will also establish a monitoring and evaluation framework to assess the performance of each sandboxing project and provide recommendations for improvement. For the same the overseeing body will meet periodically (not later than a month) to examine reports submitted for all ongoing/completed RS testing. Based on the learning from each RS, the overseeing body can also make recommendations, if any, to the Government on the changes required in policy/legal/licensing/ regulatory framework.

D) Recommendations of the Authority

3.73 The Authority recommends the following text to be adopted under clause

X. OVERSIGHT AND GOVERNANCE BODY:

X. OVERSIGHT AND GOVERNANCE BODY

23. *The oversight and governance of the RS shall be done by the National Telecommunications Institute for Policy Research, Innovation, and Training (NTIPRIT). NTIPRIT should rope in representative(s) from the Telecom Engineering Centre (TEC) and Academic institutions, as required. This body has been referred to as the overseeing body hereinafter.*
24. *The evaluation of applications submitted for RS testing shall be done by DoT. Post approval of such applications, the Overseeing Body will monitor and evaluate the performance of each sandboxing project. For this purpose the Overseeing Body will meet periodically to examine reports submitted for all ongoing/completed RS testing. The Principal Applicant / Applicant must make necessary arrangements to make the Sandbox product accessible during testing, both physically and online, and provide access to all necessary tools, testers, and software necessary to monitor the product by the Overseeing Body. This will ensure that the sandboxing process is monitored transparently, and the Overseeing Body has the necessary resources to effectively oversee and evaluate the testing of innovative products.*
25. *Based on the learnings of each RS, the Overseeing Body can make recommendations, if any, to the Government on the changes required in policy/legal/licensing/regulatory framework.*

7) Funding of Innovation for Inclusive Societal

Advancement and Growth of Economy - Section XIII

3.74 The government can play a crucial role in promoting innovations in DC sector for the advancement of society. Lack of adequate funding support may lead to premature death of some innovations which might be very promising and have potential to bridge the digital divide and bring socio-economic advancement to underprivileged sections of society. Therefore,

it is imperative to include provisions of funding support from Government to deserving products/services/applications during Sandbox Testing.

3.75 The text on funding of innovation for inclusive societal advancement and growth of economy that was proposed in the draft CP, the comments of the stakeholders on the same, and the views of the Authority thereof are summarized in the paras below.

A) Text that was proposed for these sections in draft RS framework

XIII. FUNDING OF INNOVATION FOR INCLUSIVE SOCIETAL ADVANCEMENT AND GROWTH OF ECONOMY

The government can play a crucial role in promoting innovations in Digital Communication sector for the advancement of society. Some innovations, which might be very promising, may lack adequate funding support. Financial incentives and operational support needs to be provided to innovative products/services/applications having potential to bridge the digital divide and bring socio-economic advancement to underprivileged sections of society, if deployed on a wider scale. Therefore, DoT/TRAI are open to proposals for providing funding support to deserving products/services/applications during Sandbox Testing. The Applicants who desire to avail such funding may indicate so along with the details of funding sought. Such proposals will be evaluated by a panel of experts appointed by DoT/TRAI. The Applicants may note that proposals that do not seek Government funding will have higher chances of acceptance and therefore Applicants should make their own arrangements for funding the proposal. Proposals not found deserving enough for funding support, will be summarily rejected.

B) Views of Stakeholders

3.76 Some stakeholders proposed the inclusion of a provision for financial aid through Government grants or budgetary support to facilitate the establishment and operation of the RS. This support would be contingent on market viability, customer interest, and the potential to enhance India's digital landscape. On the contrary, another stakeholder contended that TRAI should refrain from offering funding for selected proposals under the "Sandbox Project".

C) Analysis of the issues and views of the Authority

3.77 Innovation is the lifeblood of any thriving digital economy. Recognizing the substantial advantages that innovation brings, the Government has taken a significant step forward with the new Telecommunication Act' 2023. The Act strategically expanded the scope of the Universal Service Obligation Fund (USOF), now renamed the Digital Bharat Nidhi, by incorporating provisions to support innovation in the telecom sector. Clause 25 of the new Telecommunication Act' 2023 says: *“25. The sums of money received towards the Digital Bharat Nidhi under section 24, shall first be credited to the Consolidated Fund of India, and the Central Government may, if Parliament by appropriation made by law in this behalf so provides, credit such proceeds to the Digital Bharat Nidhi from time to time for being utilised exclusively to meet any or all of the following objectives, namely:—*

- a. Support universal service through promoting access to and delivery of telecommunication services in underserved rural, remote and urban areas;*
- b. Support research and development of telecommunication services, technologies, and products;*
- c. Support pilot projects, consultancy assistance and advisory support towards provision of service under clause (a) of this section;*
- d. Support introduction of telecommunication services, technologies, and products.”*

3.78 Hence Clause 25(b), (c) and (d) of the new Telecommunication Act' 2023 extend the scope of Digital Bharat Nidhi (earlier USOF) to areas connected to objectives of RS. This strategic move unlocks crucial financial support for promising telecom innovations that might otherwise struggle to secure funding from traditional market sources.

3.79 In line with the provisions of the Clause 25 (b), (c) and (d) of the Telecommunication Act' 2023, the Authority has provided in the recommended framework that the DoT will also consider offering

financial assistance to innovative products, having potential, but lacking adequate market funding, to foster their development and implementation within the RS environment.

- 3.80 The Authority has incorporated provision in the recommended RS framework for such cases that otherwise qualify for RS testing and that have significant potential to bridge digital divide and bring socio economic advancement to underprivileged sections of society if deployed on a wider scale, to be made eligible for funding consideration under clause 25(b), (c) and (d) of the Telecommunication Act' 2023. The Principal Applicant / Applicant seeking such funding can express their interest and specify the required funding details. The final decision in this regard shall be taken by the authority administering Digital Bharat Nidhi. The Government will have to incorporate suitable conditions as per aforesaid in rules to be notified.
- 3.81 The inclusion of a provision for funding innovation underscores the importance of leveraging the sandbox for broader societal advancement. By earmarking funds for innovative projects that contribute to inclusive growth, the framework aligns sandbox initiatives with national development goals. This provision encourages the development of solutions that address societal challenges and promote economic growth.
- 3.82 However, caution is warranted to prevent the development of a culture where reliance is placed on government funding for innovation growth. And therefore, a provision has been added in the RS framework that is being recommended as part of these recommendations whereby the Principal Applicant / Applicant that do not seek Government funding will have higher chances of acceptance and therefore Principal Applicant / Applicant in general course should make their own arrangements for funding the proposal.

D) Recommendations of the Authority

3.83 The Authority recommends the following text to be adopted under sections **XI. FUNDING OF INNOVATION FOR INCLUSIVE SOCIETAL ADVANCEMENT AND GROWTH OF ECONOMY:**

XI. FUNDING OF INNOVATION FOR INCLUSIVE SOCIETAL ADVANCEMENT AND GROWTH OF ECONOMY

26. *Government has already expanded the scope of Universal Service Obligation Fund created under the Indian Telegraph Act, 1885, by incorporating suitable provisions in the new Telecommunication Act' 2023 and calling it the "Digital Bharat Nidhi". Clause 25 of this Act states that "the sums of money received towards the Digital Bharat Nidhi under section 24, shall first be credited to the Consolidated Fund of India, and the Central Government may, if Parliament by appropriation made by law in this behalf so provides, credit such proceeds to the Digital Bharat Nidhi from time to time for being utilised exclusively to meet any or all of the following objectives, namely:—*
- a. Support universal service through promoting access to and delivery of telecommunication services in underserved rural, remote and urban areas;*
 - b. Support research and development of telecommunication services, technologies, and products;*
 - c. Support pilot projects, consultancy assistance and advisory support towards provision of service under clause (a) of this section;*
 - d. Support introduction of telecommunication services, technologies, and products."*
27. *Hence Clause 25(b), (c) and (d) of the new Telecommunication Act extend the scope of Digital Bharat Nidhi to facilitate innovation and experimentation in the telecom sector by extending suitable financial support. Some innovative products that may have significant potential to bridge digital divide and bring socio-economic advancement to under-privileged sections may not be able to get sufficient funding from market sources. DoT may consider eligibility of such products to get funding support for testing under RS Framework under Clause 25(b), (c) and (d) of*

the new Telecommunication Act¹⁰. The decision to provide such a funding support will rest with the authority governing the Digital Bharat Nidhi

28. *The Principal Applicant / Applicant who desires to avail such funding may indicate so in the application along with the details of funding sought. However, the Principal Applicant / Applicant may note that proposals that do not seek Government funding will have higher chances of acceptance and therefore Principal Applicant / Applicant should preferably make their own arrangements for funding the proposal.*

3.84 In line with the discussions presented in this chapter, **the Authority recommends that to encourage innovative technologies, services, use cases, and services business models, the Government should immediately adopt and implement a Regulatory Sandbox in the Digital Communication Sector as per the framework provided in Chapter-II of these recommendations.**

¹⁰ Relevant provisions will be required to be incorporated in the rules that are to be notified by the Government.

REFERENCE RECEIVED FROM DoT

F No. 20-405/2013 AS-I (Vol.-V)
Ministry of Communications
Department of Telecommunications
(Access Service Wing)
20, Ashoka Road, Sanchar Bhawan, New Delhi

Dated the 10th March 2023

Subject: Seeking recommendations of TRAI on licensing of telecommunication services - reg.

Department of Telecommunications in consultation with stakeholders has identified certain areas of further reforms, which could facilitate orderly growth of the sector. Accordingly, it has been decided to seek recommendations of TRAI, under Section 11 (1) (a) of the TRAI Act 1997, on the following issues:

I. Promote small enterprises in the telecommunication services sector:

To facilitate competition and promote efficiency in the telecommunication services sector, so as to facilitate growth in such services, additional measures may be required to be taken. One such measure could be to promote small enterprises in the telecommunication services sector. Presently, irrespective of the size and services being provided by the licensees, their compliance obligations including financial, reporting and other obligations, are more or less similar. For example, a smaller licensee having annual Gross Revenue (GR) of say less than Rs. 10 Crore faces the similar licensing and regulatory compliance obligations as a licensee that has an annual GR in excess of Rs.10,000 crores. Such symmetric cost of compliance to the asymmetric sized licensees may be making services of smaller licensees non-competitive in the market place and creating entry barriers for small enterprises.

Such smaller licensees could play a significant role in serving niche markets, creating jobs, and promoting healthy competition in the sector. In many other countries, smaller licensees are given benefits such as nil license fee if their GR is below certain threshold and exempted from certain other compliance obligations relating to reporting etc. In India also, reduced compliance obligations and certain benefits are extended to Micro, Small and Medium Enterprises (MSMEs) in other sectors. Accordingly, the recommendations of TRAI is sought on following:

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- i. Measures that are required to be taken to facilitate competition and promote efficiency in the telecommunication services sector so as to facilitate growth in such services;
- ii. What could be the parameters and their threshold value which could be used to classify such smaller licensees. If annual GR is to be taken as one such parameter to classify smaller licensees, then what could be the threshold value of annual GR and what types of benefits could be extended to such smaller licensees;
- iii. Exemption of any licensing obligations including financial, reporting and other obligations, without compromising the national security, for such smaller licensees; and
- iv. Necessary measures which should be taken by the Department to ensure that such benefits are not misused.

II. Allowing benefits of convergence in areas such as IP-PSTN switching:

As per the extant Unified License (UL) conditions, other than Access Service authorization, under all other authorizations of UL, connectivity of internet with PSTN/PLMN/GMPCS networks is prohibited in the country. With the evolution of technology, not only monitoring the compliance of this prohibition is difficult, but also it may be restricting benefits arising out of convergence of technologies. In certain scenarios, like dissemination of promotional or transactional messages through aggregators, IP-PLMN switching may be taking place at aggregators end, which is not licensed presently. In the NDCP-2018 it is envisaged that benefits of convergence in areas such as IP-PSTN switching need to be allowed. To avail such benefits, existing Unified License (UL) and UL (VNO) license terms and conditions restricting IP-PSTN/PLMN/GMPCS switching need to be examined and amended, if necessary.

In addition to the above, with digitalisation of the socio-economic activities in the country, demand for Unified Communication Services (un-tethered from underlying access network) (UCS) may be increasing. The scope of such Unified Communication Services (UCS) may include internet telephony, audio and video conferencing with IP-PSTN/ PLMN switching facility, contact centre solutions hosted in the private cloud, integration of web-portals like CRM, ERP etc. with contact centres, provisioning or reselling of virtual telecom resources to enterprises etc. To promote innovations and

(2)

start-ups in the country, such services could be authorised under UL (VNO) with 'National' Service Area. Further, to avoid duplicity of authorizations, the Audio Conferencing/ Audiotex/ Voice Mail Service authorization under UL could be subsumed in the proposed authorization chapter for Unified Communication Services under UL (VNO). Accordingly, the recommendations of TRAI is sought on following:

- i. Various authorizations of the existing Unified License (UL) or UL (VNO) or both licenses in which IP-PSTN/PLMN/GMPCS switching could allowed to avail benefits of convergence at networks, services, and devices level, without compromising the national security. Terms and conditions for such amendments in the licenses/ authorizations may also be specified.
- ii. Terms and conditions for a separate authorization on Unified Communication Services (un-tethered from underlying access network) under UL (VNO) with 'National' Service Area.
- iii. How the existing Audio Conferencing/ Audiotex/ Voice Mail Service licensees can be migrated to Unified Communication Services authorization under UL (VNO).

III. Increasing the service area of Internet Service 'Category C' and Access Service 'Category B' authorizations:

Presently the authorization for Internet Service under the UL or UL(VNO) has three different categories namely 'Category A' with National Area, 'Category B' with Telecom Circle/Metro area and 'Category C' with Secondary Switching Area (SSA) as service areas. Primary objective of having different categories of authorizations for Internet Service was to proliferate Internet in the country through multiple sized service providers and having sufficient competition so that customers get affordable and quality service. It is pertinent to note here that for different category of Internet Service authorizations under the UL or UL(VNO), the compliance obligations are same.

However, based on feedback from field units, it has been observed that service area boundaries of 'Category C' authorization for Internet Service under the UL or UL(VNO) are practically difficult to demarcate clearly. Therefore, it is very difficult to monitor compliance of such authorization's terms and conditions. Many times, it creates unnecessary disputes. Further, to expand in the adjoining areas, the 'Category C' Internet Service licensees are required to seek additional 'Category C' authorizations or upgrade

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to 'Category B' authorizations frequently. Restricting operations of Internet Service 'Category C' licensees to Secondary Switching Area (SSA) may be limiting the growth of internet services in the country also. Accordingly, keeping in view the NDCP-2018 objective of increasing fixed-line broadband penetration in the country, if the entry level requirements for Internet Service 'Category B' could be made easier and Internet Service category 'C' authorization under the UL/ UL(VNO) is discontinued than most of these issues may get addressed. Similar issues are being faced in the case of Access Service Category B authorizations in UL (VNO) also.

Accordingly, the recommendations of TRAI is sought on following:

- i. Entry level requirements for Internet Service 'Category B' authorization and recommendations on discontinuation of Internet Service category 'C' authorization under the UL and UL(VNO).
- ii. How the existing Internet Service category 'C' can be migrated to Internet Service 'Category B' authorization under the UL and UL(VNO).
- iii. Should the service area of Access Service Category B authorization in UL (VNO) be expanded to Telecom Circle/Metro area level? If yes, terms and conditions for such amendments in the authorizations may also be specified.
- iv. How the existing Access Service Category B licensees can be migrated to amended Access Service Category B authorization with expanded service area.

IV. Recommendation on framework for Regulatory sandbox for emerging technologies, services, and business models in telecom sector

A regulatory sandbox can be provided to telecom startups/ telecom technology developers/ innovative service providers / institutions to test out newer concepts and innovations in the controlled environment before launching it in the open market. Regulatory bodies in many countries have set up sandbox framework for telecom tech innovation. Sandboxes operate under specific regulatory exemptions, allowances, or limited time-bound exceptions. It manages the contentions between regulators' urge to motivate and facilitate innovation and regulatory goals such as economic resilience and consumer protection. A good example of such concept in financial sector could be RBI's Sandbox regulatory framework. Accordingly, the recommendations of TRAI is sought on following:

(4)

- i. Framework for regulatory sandbox for emerging technologies, services, and business models in telecom sector.

V. Authorization for 'Resale of IPLC' under UL (VNO) may be combined into ILD (VNO) authorization

Presently, under UL(VNO), two separate authorizations namely 'International Long Distance Service' and 'Resale of IPLC service' exists. The scope of each of these authorizations is limited and many times two separate authorizations in one ILD segment create confusions of scope also. It is felt that these two authorizations could be combined into one under the head of 'International Long Distance Service'. Accordingly, the recommendations of TRAI are sought on following:

- i. Terms and conditions for combined 'International Long Distance Service' authorization under UL(VNO).
 - ii. How the existing 'International Long Distance Service' and 'Resale of IPLC service' licensees can be migrated to combined 'International Long Distance Service' authorization.
2. In this regard, TRAI is requested to kindly examine above issues and submit its recommendations under Section 11 (1) (a) of TRAI Act, 1997 (as amended).
 3. This has the approval of competent authority.


10/05/2023

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To
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List of Acronyms

S. No.	Acronym	Complete Text
1.	5G	Fifth Generation
2.	6G	Sixth Generation
3.	AI	Artificial Intelligence
4.	BTSs	Base Transceiver Stations
5.	CP	Consultation Paper
6.	DC	Digital Communication
7.	DoT	Department of Telecommunications
8.	DST	Department of Science & Technology
9.	EoDB	Ease of doing business
10.	GE	Generic Exemptions
11.	KPIs	Key Performance Indicators
12.	LEA	Law Enforcement Agencies
13.	LSA	Licensed Service Area
14.	MSME	Micro, Small & Medium Enterprises
15.	NTIPRIT	National Telecommunications Institute for Policy Research, Innovation, and Training
16.	OHD	Open House Discussion
17.	QoS	Quality of Service
18.	RBI	Reserve Bank of India
19.	R&D	Research & Development
20.	RIO	Reference Interconnect Offer
21.	RS	Regulatory Sandbox
22.	SEBI	Securities Exchange Board of India
23.	SRS	Spectrum Regulatory Sandbox
24.	TEC	Telecommunication Engineering Centre

25.	TRAI	Telecom Regulatory Authority of India
26.	TSP	Telecom Service Provider
27.	UEs	User Equipments
28.	USOF	Universal Service Obligation Fund
29.	WiTe	Wireless Testing Zones

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