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TRAI

TRAI Organises Workshop on 'Quantum Safe Communication', Focuses on National Security, Standardisation and Migration Pathways

The **Telecom Regulatory Authority of India (TRAI)** today organised a Workshop on **"Quantum Safe Communication"** at the TRAI Headquarters, New Delhi. The workshop brought together senior representatives from national security institutions, scientific bodies, standardization organisations, industry associations, and emerging quantum technology enterprises to deliberate on policy, security, and operational approaches for strengthening the resilience of telecommunications networks in the quantum era.

The programme served as a platform for structured deliberations on national security preparedness, post-quantum cryptographic transition strategies, global standardisation initiatives, and ecosystem coordination required for migration towards quantum-secure communication networks. Discussions emphasised the importance of early and coordinated engagement to address long-term risks to conventional cryptographic systems used in telecom infrastructure.

The session commenced with the inaugural segment and welcome address by **Dr. Abdul Kayum, Advisor (BB&PA), TRAI**, followed by the Opening Address by **Shri Anil Kumar Lahoti, Chairman, TRAI**. In his remarks, Shri Lahoti observed, "Advancements in quantum computing present both opportunities and challenges for telecommunications networks. While innovation must continue, it is equally important to anticipate security implications. Transition towards quantum-safe communication will require coordinated efforts across policy, standards, technology development and industry adoption. A consultative and phased approach will be essential to ensure network resilience and protection of consumer interests."

The workshop featured focused technical presentations addressing critical dimensions of quantum security integration in telecom networks.

The first session on **"National Security Requirements in the Quantum Era"** was delivered by **Shri G. Narendra Nath, Joint Secretary, National Security Council Secretariat (NSCS)**, examining strategic considerations and long-term cryptographic risks in the evolving security landscape.

This was followed by **Dr. Rajkumar Upadhyay, Chief Executive Officer, C-DoT**, who presented on **"C-DoT's Initiatives in Quantum Safe Communication,"** outlining indigenous research and deployment pathways in quantum communication technologies.

Dr. JBV Reddy, Scientist-F and Head, Quantum Technology Cell, DST, delivered a presentation on **"National Quantum Mission of India,"** providing an overview of India's roadmap for advancing quantum technologies and strengthening national capabilities.

A session on **"Standardisation & Testing of Quantum Safe Products & Solutions"** was presented by **Shri Syed Tausif Abbas, Senior DDG & Head, Telecommunication Engineering Centre (TEC)**, highlighting the role of standards development, testing frameworks, and alignment with international initiatives.

Subsequently, **Shri Vinayak Godse, Chief Executive Officer, Data Security Council of India (DSCI)**, presented on **"Migration to Quantum-secure Ecosystem,"** focusing on structured transition strategies, compliance considerations, and ecosystem preparedness for post-quantum cryptography.

The final technical session titled **"Quantum-Safe Communication Networks"** was delivered by **Shri Dilip Singh, Chief Technology Officer (CTO), QNu Labs**, who discussed implementation perspectives, infrastructure considerations, and evolving architecture models for enabling quantum-resilient communication systems.

Across sessions, deliberations examined the emerging **"harvest now, decrypt later"** threat model and potential vulnerabilities across telecom infrastructure, including core networks, 5G and future 6G architectures. The discussions also referenced global developments in post-quantum cryptography standardisation and the need for phased migration strategies aligned with national security and regulatory priorities.

The workshop witnessed participation from officers of TRAI, young professionals, and consultants in physical mode, while officials from TRAI Regional Offices participated virtually. The discussions reinforced the importance of collaborative and consultative approaches to ensure that the evolution of telecom networks remains secure, resilient, and aligned with public interest objectives.

The deliberations from this workshop form part of TRAI's continued engagement with emerging technologies that have regulatory, security, and consumer protection implications, supporting a forward-looking approach to secure communication in the country.

For further information or clarification, please contact:
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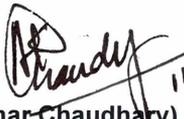
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(Atul Kumar Chaudhary)
Secretary

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