

National Quantum Mission achieves 1,000-km secure communication milestone in under 3 years of its launch: Dr. Jitendra Singh

Quantum Mission expands startup support to 17, backs 9 new deep-tech ventures

Deep-tech funding gains traction as TDB draws about 100 proposals, BIRAC nears 200 biotech applications

Dr. Jitendra Singh reviews progress off 'Quantum Mission', status of RDI Funding

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Under the National Quantum Mission, a 1,000-km quantum communication network—one of the longest in the world—has been successfully demonstrated within less than two years of its launch, marking rapid progress against the mission’s target of achieving 2,000 km over an eight-year period, Union Minister for Science & Technology Dr. Jitendra Singh was informed during a review of the Department of Science and Technology (DST) here today.

The milestone, achieved using indigenous technology developed by QNu Labs—a startup supported under the mission and focused on quantum-safe cybersecurity solutions—represents one of the longest quantum key distribution (QKD) deployments globally since the mission’s launch in October 2024. Secretary, DST, Dr. Abhay Karandikar described it as “a landmark advancement in secure quantum communication,” noting that it reflects progress ahead of envisaged timelines.

The development is expected to strengthen secure communication capabilities across defence, financial systems and critical infrastructure, while advancing India’s broader push towards a secure digital ecosystem. The technology, officials noted, is designed to work across challenging terrains, including underwater and underground networks, expanding its potential civilian and strategic applications.

In a parallel push to deepen the country’s quantum ecosystem, the government has expanded support under the National Quantum Mission to nine additional startups, taking the total number of supported ventures to 17. The move is aimed at accelerating indigenous capabilities across quantum computing, communication, sensing and materials. The newly supported startups are working on areas ranging from quantum biosensors for disease detection and photon sensing technologies to quantum positioning systems, atomic memory and precision electronic systems. The newly supported startups include SenseXT, ORVISSEMI, QuBeats, Quantum AI Global, bloq, GDQ Labs, Quantum Biosciences, Bumble Bee Instruments Pvt. Ltd., and SAS Qute Electronics Pvt. Ltd.

The review also highlighted progress under the Research, Development and Innovation (RDI) funding framework, where the Technology Development Board (TDB) and Biotechnology Industry Research Assistance Council (BIRAC) are functioning as second-level fund managers. TDB has received over 100 proposals within two months of issuing a call, indicating growing industry interest in research and development financing. Six companies recommended by the investment committee are being taken forward, while additional proposals are under consideration, reflecting increasing participation in government-supported innovation initiatives.

The biotechnology segment, supported through BIRAC, is also witnessing increased activity, with nearly 200 applications received under recent calls, including projects in cancer research, gene therapy and bio-manufacturing.

Officials emphasized the use of new financial instruments such as optionally convertible debt (OCD), designed to support startups without immediate equity dilution and to attract private investment alongside public funding. The government is seeking to ensure both innovation and scalability in emerging sectors such as 6G, advanced manufacturing, space technologies and biotechnology.

During the meeting, Dr. Jitendra Singh underscored the need for transparency, structured evaluation and wider outreach to improve participation and awareness of government-backed R&D funding. He also called for coordinated communication strategies to amplify key scientific achievements, including the quantum milestone, and to position India's emerging technology ecosystem more prominently.

Senior officials including DST Secretary Dr. Abhay Karandikar, TDB Secretary Rajesh Kumar Pathak and BIRAC Managing Director Dr. Jitendra Kumar were present at the review.

The developments come amid a broader policy push to strengthen India's deep-tech capabilities through mission-mode programmers, blended financing models and startup support frameworks, with quantum technologies emerging as a key strategic frontier alongside biotechnology and advanced communications.





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