

Field tests of QKD on 100km commercial fiber (Indigenously, first in the country)

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A joint team of DRDO & IIT-Delhi scientists for the first time in the country, successfully demonstrated Quantum Key Distribution link between Prayagraj and Vindhyachal, UP, a distance of more than 100 kms: DRDO



The logo of the Defence Research and Organisation (DRDO) is circular with a blue border. Inside, there's a white circle containing a yellow shield with a blue anchor and wings. The text 'डी आर डी ओ' (Dee Aar Dee O) is at the top, 'DEFENCE R&D ORGANISATION' is in the middle, and 'रक्षा मंत्रालय' (Ministry of Defence) and 'DRDO' are at the bottom.

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With Eye on China, India Joins Race To Weaponise Quantum Tech in Future Military Conflicts



The diagram shows a green padlock on a black background with binary code. To its right is the DRDO logo.

With the leaps made by China in the quantum computing space, there is a fear of Chinese military developing offensive and neutralising capabilities using quantum technology.

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ARIJUN GARGEYAS

The DRDO stated that a joint team of DRDO and IIT-Delhi successfully demonstrated a Quantum Key Distribution (QKD) link for the very first time. Representational Image. [Photo: psa.gov.in]

DRDO & IIT Delhi scientists successfully test QKD between two cities 100 kilometres apart

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The visualization shows two glowing blue spheres connected by a network of lines, representing quantum entanglement or communication.

DRDO & IIT Delhi scientists successfully test QKD between two cities 100 kilometres apart

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NEWS / IN A FIRST, DRDO DEMONSTRATES QUANTUM COMMUNICATION OVER DISTANCE OF 100KM

In a first, DRDO demonstrates quantum communication over distance of 100km

TIMESOFINDIA.COM | Updated: Feb 23, 2022, 18:14 IST

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28 FEBRUARY 2022

India demonstrates Quantum Key Distribution capabilities

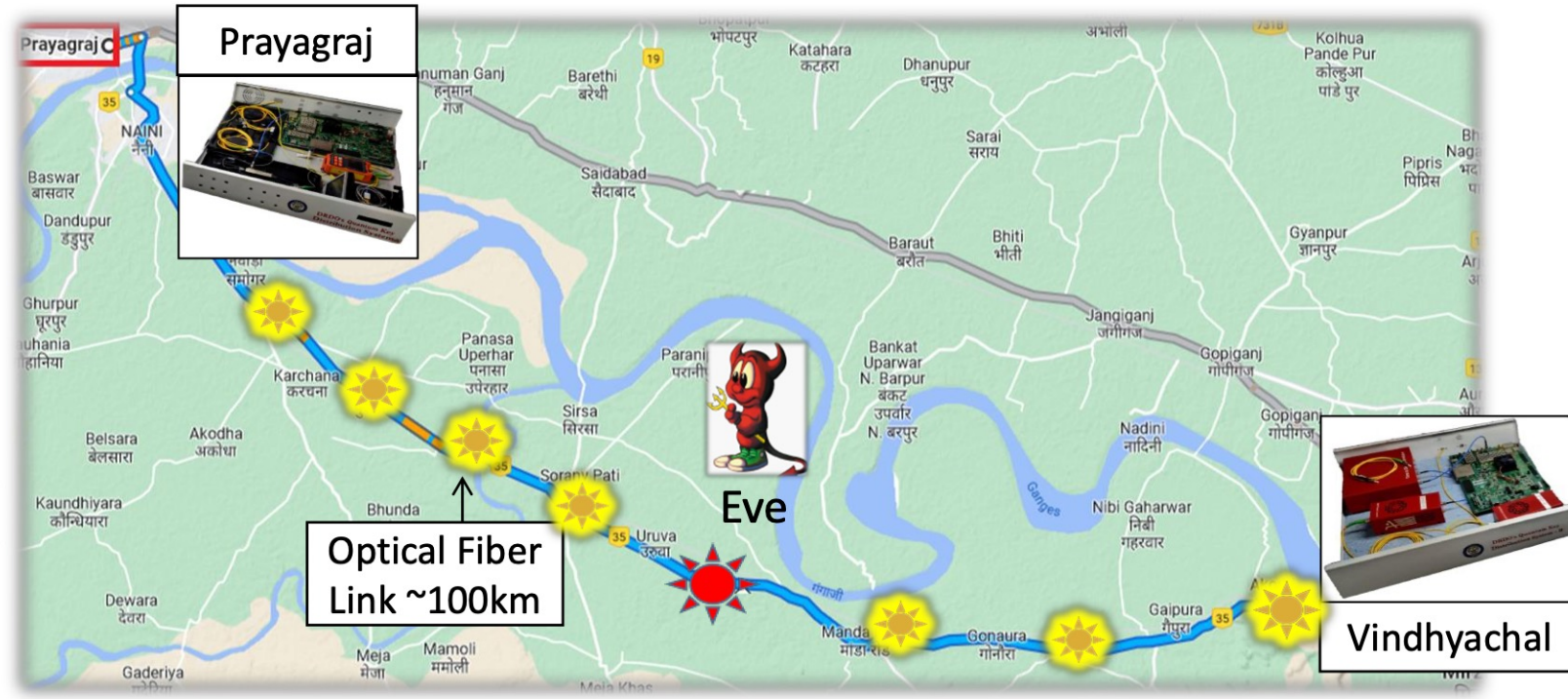
by Oishee Majumdar

India, for the first time, has demonstrated Quantum Key Distribution (QKD) links over a distance of more than 100 km, the Indian Ministry of Defence (MoD) has said.

According to a media release by the MoD on 23 February, this QKD capability was demonstrated between the cities of Prayagraj and Vindhyachal, both in the northern state of Uttar Pradesh.

Field Testing of Quantum Communication between Two Cities

- DRDO in collaboration with IIT Delhi have successfully field demonstrated secure Quantum Key Distribution (QKD) over a distance of ~100 km commercial grade Fibre Optic cable between Prayagraj and Vindhyachal.
- Two QKD protocols have been demonstrated during the field trial. Satisfactory performance was achieved with Quantum Bit Error Rate (QBER) of typically 6%-9% and a sifted key rate of 8-10 kHz. Attack on quantum communication was simulated and presence of eavesdropping was successfully detected
- This is a significant step toward achieving reliable, unconditionally secure, information theoretic, future safe communication in an ever-evolving and increasingly vulnerable environment for Military and National Security.
- The indigenous capability thus achieved may be utilized to extend the progress towards designing and implementation of quantum network to connect multiple user nodes by exploring suitable Quantum network architecture & technology and quantum internet to connect multiple quantum computing platforms communication nodes and sensors in a secure network.



Media Coverage

News Papers:

<https://pib.gov.in/PressReleasePage.aspx?PRID=1800648>

<https://twitter.com/ANI/status/1496449514584305667?t=Zww3ZOLocJkgA2KbIBZr9w&s=08>

<https://timesofindia.indiatimes.com/home/science/in-a-first-drdo-demonstrates-quantum-communication-over-distance-of-100km/articleshow/89775251.cms>

<https://www.businesstoday.in/technology/news/story/drdo-iit-delhi-demonstrate-quantum-communication-between-prayagraj-vindhyachal-323676-2022-02-23>

<https://www.jagran.com/news/national-drdo-successfully-tests-quantum-key-distribution-tech-between-2-cities-100-km-apart-22493925.html>

<https://indianexpress.com/article/explained/explained-what-is-quantum-tech-demo-by-drdo-and-iit-delhi-all-about-7789057/>

<https://www.aeromagonline.com/2022/02/24/drdo-iit-delhi-scientists-demonstrate-quantum-key-distribution-between-2-cities-100km-apart/>

<https://newsonair.com/2022/03/02/drdo-iit-delhi-scientists-successfully-test-qkd-between-two-cities-100-kilometres-apart/>

<https://theprint.in/india/drdo-iit-delhi-successfully-demonstrated-quantum-communication-between-prayagraj-vindhyachal/844906/>

Defence Magazine:

<https://www.janes.com/defence-news/news-detail/india-demonstrates-quantum-key-distribution-capabilities>

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