

# China to launch world's first quantum communication network

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Credit: AI-generated image ([disclaimer](#))

As malicious hackers find ever more sophisticated ways to launch attacks, China is about to launch the Jinan Project, the world's first unhackable computer network, and a major milestone in the development of quantum technology.

Named after the eastern Chinese city where the [technology](#) was developed, the [network](#) is planned to be fully operational by the end of August 2017. Jinan is the hub of the Beijing-Shanghai quantum network due to its strategic location between the two principal Chinese metropolises.

"We plan to use the network for national defence, finance and other fields, and hope to spread it out as a pilot that if successful can be used across China and the whole world," commented Zhou Fei, assistant director of the Jinan Institute of Quantum Technology, who was speaking to Britain's *Financial Times*.

By launching the network, China will become the first country worldwide to implement [quantum technology](#) for a real life, commercial end. It also highlights that China is a key global player in the rush to develop technologies based on quantum principles, with the EU and the United States also vying for world leadership in the field.

The network, known as a [quantum key distribution](#) (QKD) network, is more secure than widely used electronic [communication](#) equivalents. Unlike a conventional telephone or internet cable, which can be tapped without the sender or recipient being aware, a QKD network alerts both users to any tampering with the system as soon as it occurs. This is because tampering immediately alters the information being relayed, with the disturbance being instantly recognisable. Once fully implemented, it will make it almost impossible for other governments to listen in on Chinese communications.

In the Jinan network, some 200 users from China's military, government, finance and electricity sectors will be able to send messages safe in the knowledge that only they are reading them. It will be the world's longest land-based quantum communications network, stretching over 2 000 km.

Also speaking to the *Financial Times*, quantum physicist Tim Byrnes, based at New York University's (NYU) Shanghai campus commented: "China has achieved staggering things with quantum research... It's amazing how quickly China has gotten on with quantum research projects that would be too expensive to do elsewhere... quantum communication has been taken up by the commercial sector much more in China compared to other countries, which means it is likely to pull ahead of Europe and US in the field of quantum communication."

However, Europe is also determined to also be at the forefront of the 'quantum revolution' which promises to be one of the major defining technological phenomena of the twenty-first century. The EU has invested EUR 550 million into quantum technologies and has provided policy support to researchers through the 2016 Quantum Manifesto.

Moreover, with China's latest achievement (and a previous one already notched up from July 2017 when its quantum satellite—the world's first—sent a message to Earth on a quantum communication channel), it looks like the race to be crowned the world's foremost [quantum](#) power is well and truly underway.

Provided by CORDIS

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