SK Telecom Continues to Protect its 5G Network with Quantum Cryptography Technologies

- SK Telecom applied Quantum Random Number Generator (QRNG) to the subscriber authentication center of its 5G network

- SK Telecom plans to apply Quantum Key Distribution (QKD) technology to the Seoul-Daejeon section of its LTE and 5G networks to prevent hacking and eavesdropping

- SK Telecom is playing a pivotal role in global standardization of QKD and QRNG technologies at ITU-T.

Seoul, Korea, March 18, 2019 - SK Telecom (NYSE:SKM) today announced that it has applied ID Quantique's Quantum Random Number Generator (QRNG) to its 5G authentication center (AuC) to prevent hacking and ensure quantum-safe security. The QRNG is a device that constantly generates quantum random numbers, which are used as the foundation of strong keys that are not biased and cannot be predicted.

** ID Quantique, based in Switzerland, is the global leader in the field of quantum cryptography communication. SK Telecom invested USD 65 million in ID Quantique in February 2018 to further strengthen its technological capabilities.*

The subscriber authentication process is the first and essential step in verifying a mobile device user before he/she is granted access to any voice and video data service, SMS, etc. Security in this process is crucial since the leakage of authentication key value can lead to serious crimes such as eavesdropping and hacking.

Moreover, SK Telecom plans to install QRNG to AuC of its LTE network in April 2019.

Next month, SK Telecom will also apply ID Quantique's Quantum Key Distribution (QKD) technology to the Seoul-Daejeon section of its 5G and LTE networks, to strengthen the security of 5G and LTE data transmission and reception. This is the section of the network with the most data traffic concentration in Korea.

QKD provides ultimate cryptographic security based on the laws of quantum mechanics. It enables two parties to produce a shared random secret key known only to them, which can then be used to encrypt and decrypt messages.

Going forward, SK Telecom plans to expand the application of quantum cryptography technologies by stages to further enhance the safety and security of its mobile networks.

Furthermore, SK Telecom is playing a pivotal role in global standardization of QKD and QRNG technologies at ITU-T. In February 2019, SK Telecom's two new technologies related to QKD have been selected as work items by ITU-T's Study Group 17 (SG17), which coordinates security-related work across all ITU-T Study Groups. Combining these two work items with the two on-going work items on QKD and QRNG technologies it proposed in July 2018, SK Telecom is currently leading a total of four meaningful work items in SG 17.

In addition, Sim Dong-hi, a delegate from SK Telecom, is serving as associate-rapporteur on quantum technology in SG17.

"As security emerges as one of the most important issues in the 5G era, SK Telecom is determined to provide the most secure 5G network and focus on expanding the ecosystem by developing quantum cryptography technologies," said Park Jin-hyo, the Chief Technology Officer of SK Telecom.

About SK Telecom

SK Telecom is the largest mobile operator in Korea with nearly 50 percent of the market share. As the pioneer of all generations of mobile networks, the company has launched the fifth generation (5G) network on December 1, 2018. The company is not only leading innovations in the field of mobile network, but is also creating unprecedented value in areas such as media, security and commerce. In the Fourth Industrial Revolution, SK Telecom will inspire the world, building a future beyond expectations.

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