

Quantum Dice and SpeQtral Unveil Quantum Communication Developments with Zenith QRNG for SpeQtral-1 Mission

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EINPresswire.com/ -- [Quantum Dice](#), a spinout from the University of Oxford's quantum optics laboratory, and [SpeQtral](#), a leading quantum communications technology company, proudly announce the launch and use of the Zenith Quantum Random Number Generator (QRNG), a product designed for space, to enable secure quantum communication technologies in the upcoming SpeQtral-1 satellite mission.



SpeQtral-1, SpeQtral's second quantum key distribution (QKD) satellite, builds on the ongoing work on the SpeQtre mission as well as on technologies demonstrated on the 2019 SpooQy-1 CubeSat. It will serve as a commercial pathfinder and demonstrator to define the future of global quantum secure communication services. This pioneering mission features Quantum Dice's Zenith QRNG, SpeQtral's entanglement and weak coherent quantum payloads, and a laser communications system in a 16U CubeSat. This will allow SpeQtral to showcase and experiment with different quantum-secure protocols, including QKD based on entanglement, weak coherent pulses, as well as alternative higher-speed key delivery techniques. The range of methods will address various end-user requirements and applications, establishing SpeQtral-1 as a leader in compact quantum-safe key distribution satellites.

The Zenith QRNG is Quantum Dice's first-ever space product. Crafted to deliver a high-rate, robust, and low Size, Weight, and Power consumption (SWaP) solution, the Zenith QRNG features Quantum Dice's proprietary DISCTM protocol. Boasting a world-leading data rate of 200 to 1000 Mbps, it sets a pioneering benchmark for secure quantum communication in space.

Marko von der Leyen, Quantum Dice CTO, remarked: "Quantum Dice's Zenith device has been

engineered to withstand harsh environments in space without compromising on the security standards of the continuous live verification of our quantum randomness. We are proud to be a partner on the SpeQtral mission with our ultra-fast Gbps-class system, supporting an important domain of future communications.”

SpeQtral Co-Founder and CEO, Lum Chune Yang, further emphasised: “SpeQtral-1 is a testament to our commitment to pushing the boundaries of secure communication in space. With Quantum Dice's cutting-edge technology, we're not just launching a satellite; we're pioneering a new era of quantum communication, providing a range of quantum-safe key distribution capabilities. Our mission is to redefine the possibilities of secure communication, and SpeQtral-1 is a crucial step in that journey.”

About SpeQtral:

SpeQtral is a pioneer in quantum communications, with a vision to build and deploy global quantum networks. SpeQtral develops quantum-secure products and services designed to protect sovereign and enterprise telecommunication networks against classical, as well as future quantum-based cyber-attacks on cryptography. Combining both terrestrial and space-based solutions, SpeQtral aims to secure the world's networks against the threats posed by the imminent quantum revolution and drive innovation in quantum communications that will serve as the building blocks for the future quantum internet.

For more information, visit: <https://speqtral.space/>

About Quantum Dice:

Quantum Dice aims to protect a connected future by harnessing the fundamental quantum properties of light to enable secure encryption. Leveraging its patented source-device independent self-certification (DISC™) protocol, Quantum Dice is developing the world's first compact, high-speed, and continuously self-certifying quantum random number generator (QRNG). Its technology is suitable for a wide range of applications ranging from protecting terrestrial networks to providing quantum-secure entropy for satellite and IoT systems. Founded in April 2020, Quantum Dice is an award-winning venture-backed spinout from the University of Oxford's world-renowned quantum optics laboratory. It's there where the architecture for its innovative quantum source of entropy was originally invented. Its mission is to provide trusted and secure randomness leveraging the unique properties of quantum systems along with its patented DISC™ protocol.

For more information, visit: <https://www.quantum-dice.com>

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