Telefónica and Halotech integrate post-quantum encryption into IoT devices

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Telefónica and Halotech Digital Services announce the launch of an innovative IoT solution for secure communication based on post-quantum encryption for safety-critical environments, such as mining, healthcare or industrial sectors, among others. The solution called TU Quantum Encryption has been developed based on the proof of concept (PoC) IoT Quantum Ready for Halotech AI helmets, applied to Halo I and Halo III smart devices.

The new solution, based on Quantum Ready Secure Communication, focuses on providing a higher level of secure communication to smart devices, such as the Halo I connected helmets and the Halo III smart bracelet. Both devices are equipped with GPS, emergency SOS button, fall detector and advanced sensors that measure the quality of the work environment, such as noise level, temperature, humidity, pressure, air quality and thermal stress, among other critical factors, which improve safety and working conditions for operators in demanding environments. Telefónica provides connectivity through NB-IoT and LTE-M networks (networks with low power consumption and wide coverage range), ensuring optimal coverage and reliability even in hard-to-reach areas.

The solution is managed through Telefónica Tech's Kite platform, a managed connectivity IoT platform that allows users to monitor and control their devices in real time and remotely from anywhere in the world. Thanks to the incorporation of post-quantum cryptography, an extra layer of security is added, protecting critical information against future threats derived from quantum computing.

With this collaboration, Telefónica reinforces its commitment to innovation in security and technology, while Halotech AI positions itself as a leading reference in the integration of advanced technologies for operational security in critical sectors. The alliance

not only seeks to protect sensitive information, but also to optimize operational performance in what are called ‘tactical operations bubbles’, where the safety of operators and agents is a priority.

Antonio Guzmán, Director of Discovery at Telefónica Innovación Digital, says:

> We have worked with Telefónica Tech to integrate, under a hybrid model, the most advanced post-quantum security in Telefónica’s IoT Data Ready Service systems. In this way, all critical information is encrypted using classical and post-quantum algorithms. With this integration, we effectively mitigate the current threats to the secrecy of information, derived from the impact that quantum computing will have on current cryptography. This solution, which anticipates and solves real problems, has been brought into production together with our partner HaloTechs

Manu Marín, CEO of Halotech Digital Services, comments

> This collaboration with Telefónica marks a before and after for Halotech AI, allowing us to offer our customers, both in industry and law enforcement, a technology that not only optimizes security in critical environments, but also ensures the protection of information with the highest security standards. Both the Halo I helmet and the Halo III armband, connected to our platform, allow us to govern security in tactical operations efficiently and with total confidence

Telefónica Innovation Day: October 17th

On October 17 will be held in Distrito Telefónica (Madrid) the Telefónica Innovation Day event, an event that will bring together the latest technology and innovation and technology of the company, which will have a relevant agenda and a part of demos where the solution developed by Telefónica and Halotechs will be shown.

Visitors will be able to see in real time how quantum encryption works through a panel that will monitor the location of the operators equipped with the Halo I and Halo III devices, the environmental parameters and the impact of thermal conditions on their health, which will allow measuring thermal stress, as well as tracking alerts such as SOS signals from injured operators. It will also be possible to

see how the system will provide information on the movements of the operators, both as a group and individually, all this information encrypted by the TU Quantum Encryption service.

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