TU Kaiserslautern successfully tests automatic eSIM Download for Private 5G Standalone Networks

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In a European-first, the Technical University of Kaiserslautern (TUK) has conducted an automatic eSIM download to a smartphone via a private 5G standalone network. The exercise demonstrates the interoperability of G+D's eSIM management with Nokia's 5G network technology.

The TUK's test scenario comprised a Samsung Galaxy S21 smartphone, G+D's AirOn eSIM management platform and a standalone private 5G network, based on Nokia technology. The network, located on the TUK campus, uses Nokia's Digital Automation Cloud (DAC) and was provided by Nokia's European reseller Smart Mobile Labs.

The 5G standalone parameters were provided by Nokia. G+D then created the eSIM profiles which are required to connect the smartphone to the network. These profiles were then imported into the G+D AirOn management portal for the test. From there, the smartphone could download the profile automatically and securely "over the air". To start the download, a QR code simply needed to be scanned.

In a separate scenario, the university successfully tested on-the-fly switching between two networks. As the smartphone transitioned from one private Nokia 5G standalone network to the other, it was able to seamlessly connect to the second network. To achieve this, the local profile assistant (LPA) on the smartphone was used, enabling the smartphone to manage multiple eSIM profiles and switch automatically.

The next phase of the project will see TUK test switching between 5G standalone networks from different manufacturers.

The TUK initiative is funded by the German Federal Ministry of Digital Affairs and Transport through the "5x5G Strategy" program (project number VB5GFKAISE), designed to enable the testing of innovative 5G applications and support the efficient introduction of new mobile technology.

The eSIM scenarios tested by the TUK enable numerous practical applications. For example, automatic profile download via QR code scanning allows visitors to conference centers or stadiums to easily connect to private 5G networks in those environments. Meanwhile, seamless connection switching across multiple networks can support intralogistics applications in which autonomous vehicles connect to each of the various 5G networks on a company's premises in turn as they move between different areas.

"Automatic downloads of eSIM profiles play a critical role in delivering frictionless services on non-public 5G networks. They enable more flexible use of these networks and support a wide variety of use cases," explains Prof. Dr. Hans Schotten from the Chair of Wireless Communication and Navigation at the TUK. "That's why we are very pleased to be able to test and demonstrate this concept alongside our partners."

"Our Nokia Digital Automation Cloud Offering combines high-performance wireless networking with resilient and secure local edge computing. As a true end-to-end solution, Nokia DAC also incorporates user equipment, an easy to use, powerful management portal and makes ready-to-run applications available with both 4G and 5G technology," says Alexander Kirchner, Head of Nokia Enterprise Business Center.

Carsten Ahrens, CEO of G+D Mobile Security, adds: "The impressive tests at the Technical University of Kaiserslautern demonstrate that G+D and Nokia have an interoperable system. This greatly simplifies the deployment of private 5G networks for system integrators and enterprises. As a leading provider of eSIM technology, we will continue to support private mobile networks with our solutions and expertise."

About Giesecke+Devrient
Giesecke+Devrient (G+D) is a global security technology group headquartered in Munich. As a trusted partner to customers with the highest demands, G+D secures the essential values of the world with its solutions. The company develops technology with passion and precision in four major playing fields: payment, connectivity, identities and digital infrastructures. G+D was founded in 1852. In the fiscal year 2021, the company generated a turnover of 2.38 billion euros with around 11,800 employees. G+D is represented by 81 subsidiaries and joint ventures in 33 countries. Further information: www.gi-de.com.

About Nokia
At Nokia, we create technology that helps the world act together. As a trusted partner for critical networks, we are committed to innovation and technology leadership across mobile, fixed and cloud networks. We create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs. Adhering to the highest standards of integrity and security, we help build the capabilities needed for a more productive, sustainable and inclusive world. For further information please visit www.nokia.com ↗or follow us on twitter at @nokiaindustries.

About TU Kaiserslautern
Technische Universität Kaiserslautern (TUK) is an engineering and science-focused research university with international rapport. It offers its students future-oriented degree programs and fundamental scientific education with modern infrastructure and practical relevance. In addition to excellent in-house research, the TUK hosts numerous basic science collaborative research centers and trans-regional partnerships funded by the German Research Foundation. Application-oriented research is conducted in close cooperation with 10 research institutes on site. By combining its research strength with knowledge and technology transfer, the TUK builds bridges between science, industry and society. Situated on the edge of the Palatinate Forest, the compact campus is characterized by a close-knit community, a spirit of partnership, and a quality of life and work that is close to nature.