

STMicroelectronics powers up next-gen digital access control with Aliro-compliant wireless and secure technologies

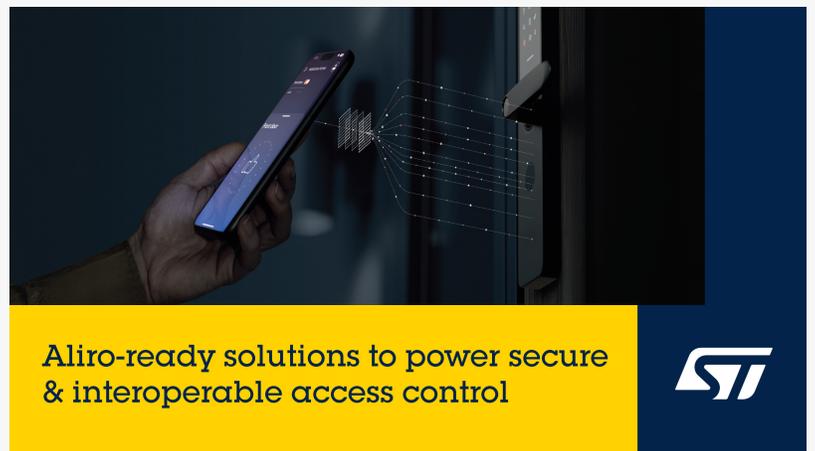
ST contributed expertise and helped shape the new industry standard for smartphones, wearables, and reader devices to unlock doors and openings

GENEVA, SWITZERLAND, February 27, 2026 /EINPresswire.com/ --

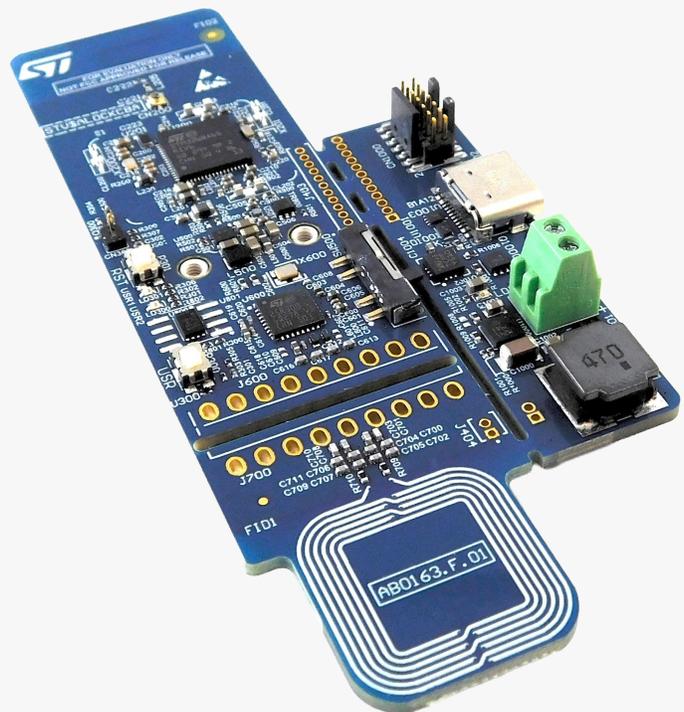
STMicroelectronics has revealed its contribution to accelerating widespread availability of secure, interoperable access-control technology to unlock doors and openings with smartphones, wearables, and other access-control devices.

On February 26, the Connectivity Standards Alliance (Alliance) published Aliro 1.0, giving the industry a standardized protocol to exchange access credentials between digital devices. As a member and active contributor to the Aliro Working Group within the Alliance, ST has now made available engineering resources that accelerate design of Aliro readers and ease compliance testing for market-ready products. The reader device is critical for smart locks to check digital wallet credentials.

Compared to mechanical keys, PIN-pads, and contactless cards, access



ST Aliro development package



ST Aliro reference design

control with Aliro using smartphones, wearables, or other devices combines wireless convenience and flexible operating range with strong electronic security. In addition, Aliro systems can provide hands-free convenience and intelligent localization-related responses, with essential application-level advantages of digital keys, such as privacy, shareability, and configurable user privileges.

Aliro leverages established near-field communication (NFC), Bluetooth® LE, and ultra-wideband (UWB) technologies to provide the underlying platform for wireless communications. Benefiting from ubiquity, as all are supported in smartphones already in users' hands, these technologies permit flexible use cases operating over distances from a few centimeters to 100 meters or more.

"We are ready to give device makers everything they need to build Aliro-compliant products. ST offers the complete portfolio of connectivity and security solutions to support all three Aliro configurations, from NFC-only to NFC + Bluetooth® Low Energy up to NFC + Bluetooth® LE + UWB for hands-free access," said Luca Verre, Group Vice President, Microcontrollers, Digital ICs and RF products Group Strategy, STMicroelectronics. "With our Aliro technology expertise, long-term solution availability and decades of experience in security and connectivity, we enable customers to accelerate development and confidently bring next-generation access solutions to market."

"STMicroelectronics has been instrumental in making Aliro real — not just through their contributions to the specification, but by investing in the reference designs and development tools that make it easier for the entire industry to build to the standard. That's exactly what accelerates adoption: removing complexity so companies can get to market faster. We're proud to work alongside ST in delivering this foundation," said Tobin Richardson, Alliance President and CEO, Connectivity Standards Alliance.

Accelerating time to market for product developers and manufacturers, ST's engineering package available today includes the [X-CUBE-ALIRO](#) software package, now integrated in STM32Cube, together with a reference design ([STEVAL-ALOCKCB](#)) that leverages ST microcontrollers and wireless connectivity products to help customers build their Aliro-compliant devices.

The X-CUBE-ALIRO package provides a reference software implementation of CSA Aliro 1.0 protocol for reader devices, compliant with technical and interoperability requirements defined by the standard, envisioning also the integration in Matter for provisioning. Completing the Aliro-enablement toolset for reader makers, the reference design including the board layout is proven and tested, documented with CAD files and bill of materials, and can be customized if required.

ST's microcontroller and wireless connectivity portfolio including ST25 NFC readers, multiple types of STM32 microcontrollers including Bluetooth-enabled devices, and ultra-wideband (UWB) ICs, offers a one-stop-shop for Aliro-ready devices to support all the specified wireless

technology configurations. The Aliro offer from ST also includes the STSAFE-A embedded secure element for digital key storage.

ST's engineering package connects developers with support and resources, including the reference design, software package, and hardware. In addition to easing design and overcoming known RF-system design challenges such as board layout through SoC integration, ST hardware and software tools ease end product testing for compliance and interoperability, enabling developers to rapidly certify their new products.

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At embedded world 2026, Nuki Home Solutions will showcase a complete solution for Aliro, based on ST's reference design and software package on the ST booth. "The Aliro protocol and ST's associated developer package enable smart door locks to deliver a seamless, secure unlock experience. Our mission is to adapt these global technologies to the specific needs of European doors, ensuring that future residential access solutions deliver peak performance," said Jürgen Pansi, Chief Innovation Officer, Nuki Home Solutions.

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