

Thales Luna HSMs and nTropy Help Secure Wearable Medical Sensors

A leading Healthcare Wearable Technology Producer needed to adhere to FDA-mandated industry security standards for their Wearable Medical Sensors. These sensors tend to be small and are typically worn on someone's wrist, arm, or stomach. They enable patients to monitor their health in real-time using biosensors that continuously collect patient data. Use case examples include monitoring a patient's heart rate, blood sugar levels, or blood pressure.

The challenges

Being able to track, analyze, and use accurate information from Wearable Medical Sensors is critical to ensuring a patient's well-being. Each sensor continuously measures and transmits a patient's health data to a receiver or compatible smart devices such as a phone or application. Unfortunately, wireless data transmission is often vulnerable to hackers or other bad actors.

The solution

To protect against data security threats, this Wearable Technology Producer sought the expertise of nTropy to help both design and implement a solution.

nTropy is a Thales Technology Partner providing both advisory and implementation services. They specialize in solving complex PKI and IoT problems for industries including MedTech, FinTech, and manufacturing.

Acting as a trusted adviser, nTropy designed a comprehensive security solution. The first step in this process was to inject unique key material into the sensors during production. Their client's manufacturers could easily bulk-load PKI certificates (leveraging EJBCA) and symmetric key materials into each wearable sensor by deploying pre-configured Thales Luna Network HSM clusters.

Additionally, this could all be done on the production floor without connectivity or the need for any isolated manufacturing processes since each of the Luna HSMs were deployed with hundreds of thousands of pre-generated key stores for on-demand use.

The results

The Wearable Technology Producer enhanced security for both their medical sensors and patient data by leveraging solutions from Thales and nTropy in a seamless, high-capacity, and trusted manufacturing architecture.

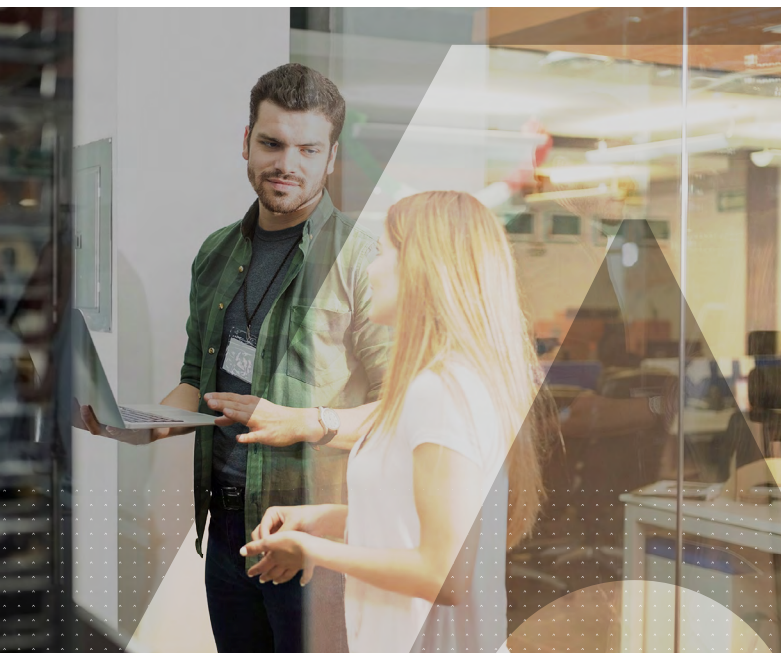
Medical sensors can now ensure proper authentication to other devices, provide end-to-end encryption, and then derive keys to decrypt data when it arrives at a verified location.

Thanks to the novel key injection architecture designed by nTropy, the way this solution was architected, sensor key injection happened 20X faster than previously possible. It also reduced manufacturing production time by 95% despite a lack of connectivity.



nTropy rTery

rTery is a scalable, key-injection engine with built-in HSM redundancy that processes large batches of crypto-key bundles. Key bundles are staged for installation on hardware and software components during production time and can fully integrate with traditional manufacturing schemas. For facilities with connectivity issues, rTery can be leveraged as an on-premises service. The tool is CA agnostic and can be used with EJBCA, including offerings from other Thales Technology Partners such as Keyfactor.



Thales Luna HSM

Luna HSMs provide high-assurance protection for cryptographic keys used by applications in on-premises, virtual, cloud environments, and across hybrid environments. Luna HSMs are often leveraged as the secure root of trust for data storage and transfer. Luna HSMs can be deployed to protect the cryptographic infrastructure by securely managing, processing, and storing cryptographic keys inside a hardened, FIPS 140-2 Level 3 tamper-resistant device.

Manufacturers around the globe rely on Luna HSMs as their foundation of trust when preparing for post-quantum crypto solutions, protecting SSL certificates, code signing, and PKI infrastructure, and supporting smart manufacturing and other use cases where confidentiality, integrity, and availability are paramount.

About Thales

The people you rely on to protect your privacy rely on Thales to protect their data. When it comes to data security, organizations are faced with an increasing number of decisive moments. Whether the moment is building an encryption strategy, moving to the cloud, or meeting compliance mandates, you can rely on Thales to secure your digital transformation.

Decisive technology for decisive moments.