Trusted Device Lifecycle Management to simplify the IoT journey

Cinterion® Module Services

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Ensuring Reliable Connectivity, Scalability and Trust for IoT Solutions

Lifecycle management is essential to IoT project success

IoT devices currently outnumber the world population, and as networks and technology standards continue to evolve, tens of billions of new connections are expected in the years to come. This type of extraordinary growth and digital transformation presents challenges for IoT service providers, such as network crowding and service disruption, short software lifecycles and increasing security concerns.

To ensure business continuity and remain competitive, IoT service providers who leverage cellular technology for their deployments depend on **reliable connectivity**, regardless of the type of application. They also need to **sustain and manage massive and growing fleets** of devices that operate for long lifecycles of 10+ years. And as new connections and generated data skyrockets, growing cyberattacks and threats are prompting an urgent need to **secure IoT devices and the data they exchange.**
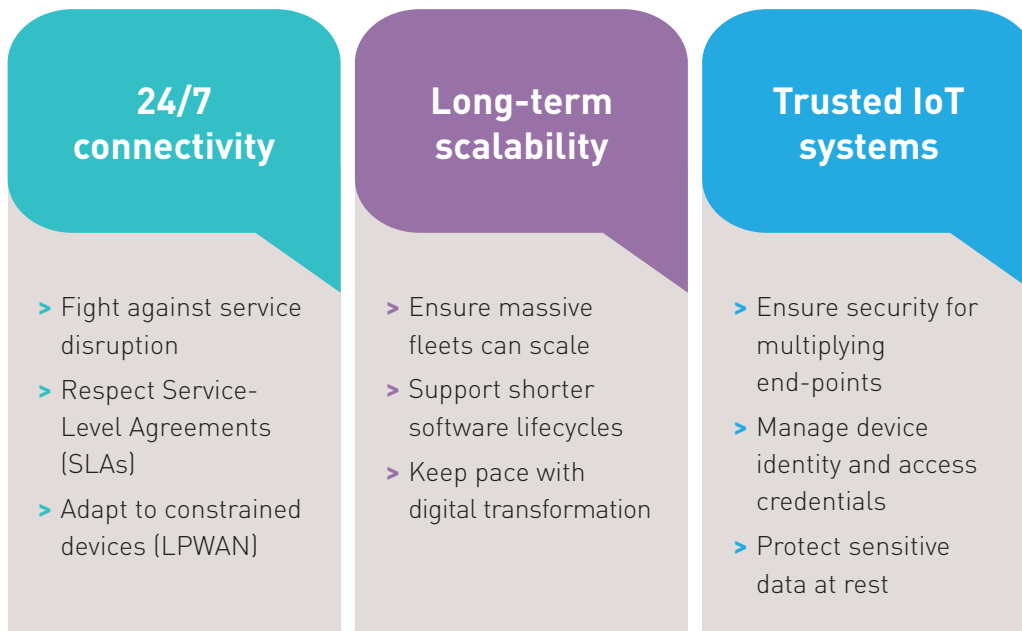
Simplifying device lifecycle management

Gemalto's **Cinterion Module Services** is a global IoT device lifecycle management solution that simplifies the IoT journey addressing all the key elements of cellular-based applications:

> Reliable and continuously optimized device connectivity
> Remote, instant, widespread fleet software maintenance
> Device scalability and forward evolution
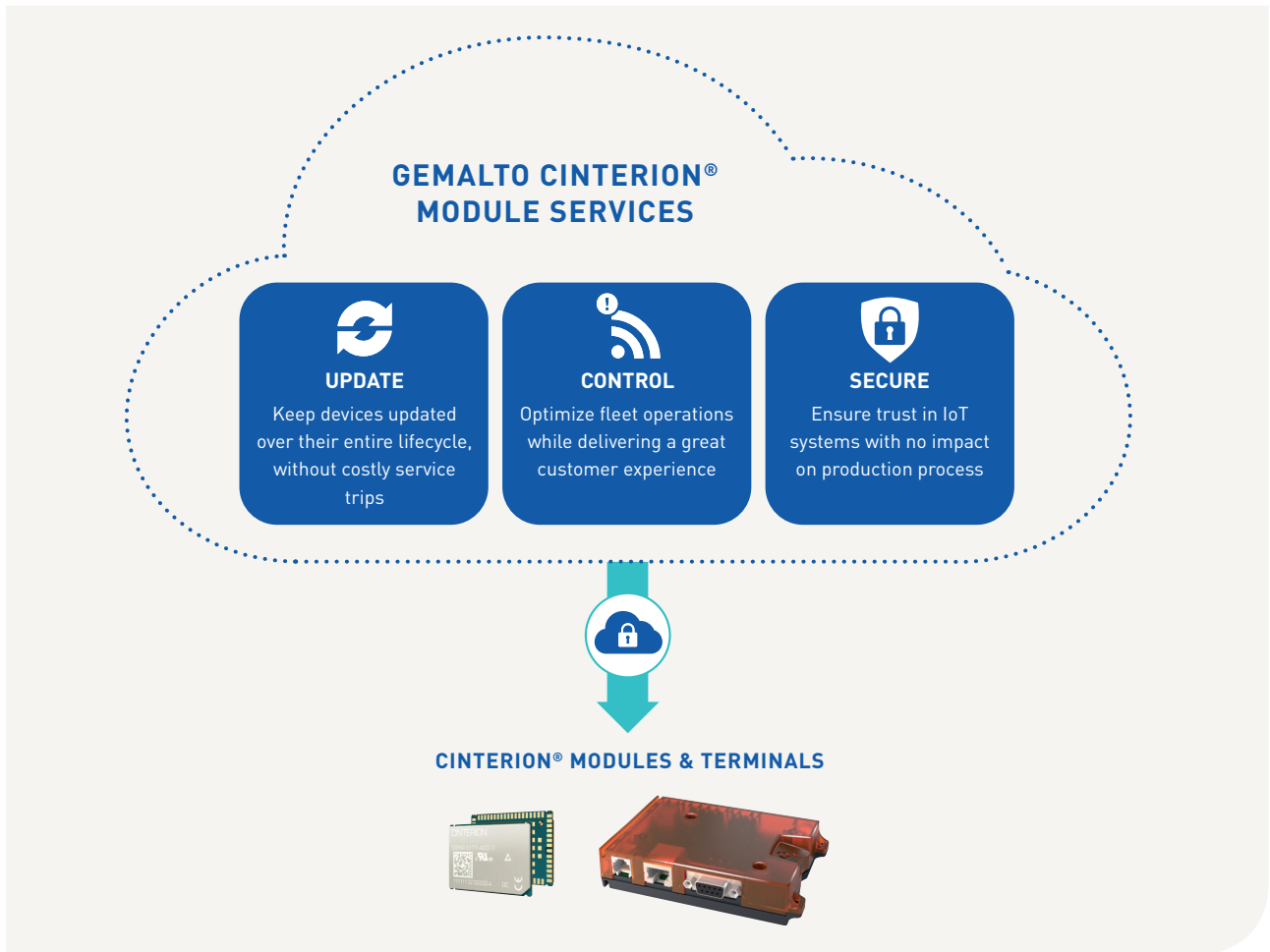> Trust in devices and secure data-to-cloud transfers

Built into the core of Gemalto Cinterion Modules and Terminals, the solution helps optimize and secure IoT deployments throughout their lifespan by providing an off-the-shelf toolbox that integrates into any target device.

IoT challenges faced by IoT service providers

24/7 connectivity

> Fight against service disruption
> Respect Service-Level Agreements (SLAs)
> Adapt to constrained devices (LPWAN)

Long-term scalability

> Ensure massive fleets can scale
> Support shorter software lifecycles
> Keep pace with digital transformation

Trusted IoT systems

> Ensure security for multiplying end-points
> Manage device identity and access credentials
> Protect sensitive data at rest

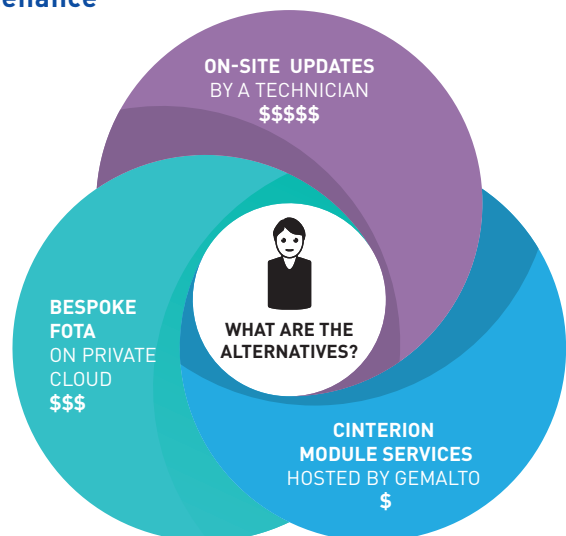## Update, Control, Secure: 3 service categories to meet all needs

Leveraging more than 20 years of telecom and global OTA (Over-The-Air) experience, along with unprecedented digital security expertise issuing and managing billions of device credentials, Gemalto's Software as a Service (SaaS) platform provides three service categories to meet all IoT device needs:

GEMALTO CINTERION® MODULE SERVICES

UPDATE
Keep devices updated over their entire lifecycle, without costly service trips

CONTROL
Optimize fleet operations while delivering a great customer experience

SECURE
Ensure trust in IoT systems with no impact on production process

CINTERION® MODULES & TERMINALS

UPDATE

Safe and efficient device software maintenance

Cellular networks are constantly evolving to support innovative capabilities and growing connections, especially with the current deployment of new IoT dedicated technologies such as NB-IoT and LTE-M. This requires regular software updates to keep devices working at their best. However, physical maintenance of large fleets of devices in the field can turn out to be cost prohibitive and time-consuming.

Gemalto solves this challenge by offering careful maintenance campaign planning along with remote update capabilities. This strategy helps to optimize costs by instantly distributing required updates across large fleets, while limiting energy consumption.

ON-SITE UPDATES
BY A TECHNICIAN
$$$$$

BESPOKE FOTA
ON PRIVATE CLOUD
$$$

WHAT ARE THE ALTERNATIVES?

CINTERION MODULE SERVICES
HOSTED BY GEMALTO
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The **Update** services category provides extremely efficient and secure IoT device software upgrades for any fleet size. It offers a Cinterion firmware repository as well as tools for automated update campaign execution.

UPDATE SERVICES KEY BENEFITS:

> **FOTA* updates:** Cinterion IoT Module firmware maintenance for the lifespan of IoT applications

> **Application software lifecycle management:** OTA software updates to support evolving device features and capabilities

> **Incremental updates:** Targeted updates of specific portions of device firmware instead of transmitting the entire firmware package over-the-air. This dramatically reduces time, cost and energy, which is essential for LPWAN-based devices with limited battery power and bandwidth.

> **Campaign planning:** Execution and verification tools to effectively manage thousands of devices, with updates across an entire device fleet or just a few selected devices

> **Trusted software and application execution:** Ensures only authorized software can be installed and executed

> **Smart distribution:** Updates only allowed for healthy and trusted end-points

*FOTA: Firmware updates Over-the-Air

Connectivity and customer experience optimization

As IoT fleets expand and evolve, applications and connectivity plans require control and fine tuning to integrate new endpoints, new features and to optimize the overall customer experience.

The **Control** services category monitors IoT device connectivity and application performance, and collects insights that help detect device behavior anomalies in real-time. This allows operation teams to determine appropriate corrective actions, such as device reconfiguration or software updates, which are executed by the campaign planning tool.

CONTROL SERVICES KEY BENEFITS:

> **Connectivity monitoring:** Optimization of device settings, configurations and IoT data plans for cost efficiency and best performance

> **Anomalies detection:** Proactive detection of device and connectivity anomalies that may lead to IoT system malfunction

> **Automated notifications:** Real time alerts to operational teams in case of field issues

> **Corrective actions:** Instant responsiveness through remote modem reconfiguration and device control commands

SECURE

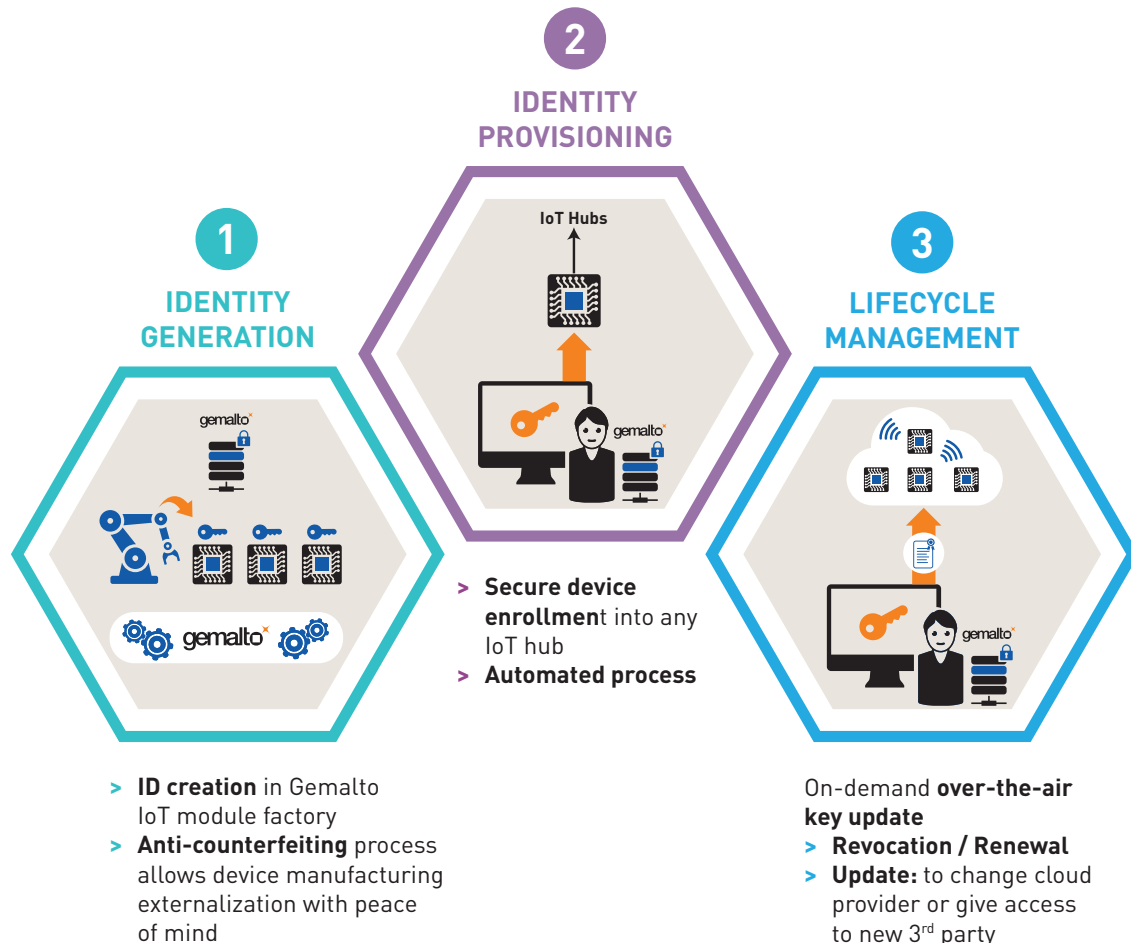**Smooth data-to-cloud journey through trusted IoT endpoints**

As connected devices rapidly multiply, the amount of data being sent to public IoT cloud platforms is also growing and increasing the potential for cyberattacks. IoT providers traditionally focused on delivering connectivity services can rely on the core competence of experienced security partners to mitigate risk and secure the IoT ecosystem. Leveraging decades of digital security expertise, Gemalto lays the foundation for secure data exchange by embedding trusted digital identities directly into the root of Cinterion IoT Modules.

The **Secure** services category is the only offer of its kind to secure the complete data-to-cloud journey for the lifespan of devices.

The platform remotely activates digital IDs, which are embedded in IoT modules during manufacturing, and it manages automated, secure enrollment of devices into private and public clouds including Microsoft Azure IoT Hub, AWS IoT Hub, IBM Watson IoT or Google Cloud IoT.

SECURE SERVICES KEY BENEFITS:

> **Built-in secure stack:** Embedded DTLS/TLS stack in the cellular module for strong data protection even in the most resource-constrained IoT devices

> **Trusted identities:** Pre-issued, diversified identity certificates embedded in the module secure domain, eliminating the need and cost of securing your own production facilities

> **Secure enrollment:** Ensures a secure digital handshake between devices and cloud platforms and seamless device enrollment into any IoT hub or platform

> **Key revocation:** On-demand, over-the-air key revocation invalidates device identities if a security breach is suspected. New keys are generated and exchanged for those revoked

2

IDENTITY PROVISIONING

1

IDENTITY GENERATION

3

LIFECYCLE MANAGEMENT

> **Secure device enrollme**nt into any IoT hub
> **Automated process**

> **ID creation** in Gemalto IoT module factory
> **Anti-counterfeiting** process allows device manufacturing externalization with peace of mind

On-demand **over-the-air key update**
> **Revocation / Renewal**
> **Update:** to change cloud provider or give access to new 3rd party

Your portal to a simplified IoT journey

Gemalto's Cinterion Module Services are immediately accessible out-of-the box through an intuitive online device console: **mods.gemalto.io.**

The platform is built upon the LWM2M (Lightweight M2M) open standard framework that provides built-in IoT device management capabilities and a proven security architecture. It defines a common communication scheme between IoT endpoints and the cloud, reducing fragmentation and boosting compatibility and interoperability in the ecosystem.

FREE UNLIMITED USAGE FOR THE FIRST 3 MONTHS!

NO STRINGS ATTACHED
No set-up fees to comfortably try the services

PAY-AS-YOU-GO
Transparent usage-based pricing without hidden costs

ADAPTIVE PRICING
Pricing adaptation as your device fleet grows

The Cinterion Module Services platform is free to activate and comes with **complimentary unlimited use** for the first three months. All three service categories offer a pay-per-use pricing model. This allows customers to pay only for the services they use, while providing flexibility to scale up or down as needs evolve.

The Gemalto Cinterion Module Services solution simplifies the IoT journey enabling reliable connectivity, simple scalability and secure data exchange to global applications. Don't delay, register for free today!

GEMALTO.COM/IOT

MODS.GEMALTO.IO

gemalto
security to be free