Value in the IoT
Introducing Sentinel Fit

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Marked Evolution in IoT: Device Vendors (IDV)

IDVs are transitioning from hardware-centric to software and services-centric companies, leveraging the cloud and IoT.
IoT Ecosystem

Device, Software, & Service Vendor
IoT Ecosystem

Device, Software, & Service Vendor

Player Software

Data
Performance
IoT Ecosystem

Device, Software, & Service Vendor

Player Software

Data

Performance

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IoT Ecosystem

IoT Platform

Player Software

Trainer Service

Device, Software, & Service Vendor

Performance

Data

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IoT Ecosystem

Device, Software, & Service Vendor

Player Software

Trainer Service

Training plans

IoT Platform
IoT Ecosystem

Device, Software, & Service Vendor

Player Software

IoT Platform

Data

Performance

Trainer Service

Training plans

Trainers

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IoT Ecosystem

- **IoT Platform**
  - **Player Software**
  - **Trainer Service**
  - **Planning Service Vendor**

- **Device, Software, & Service Vendor**
  - $$$
  - Performance
  - Data

- **Trainers**
  - $$$
  - Training plans

- $$$

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**Key Terms**

- IoT Ecosystem
- IoT Platform
- Trainer Service
- IoT Ecosystem Data
- Planning Vendor
- Performance
- Training Plans

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**Symbols**

- Tennis racket
- Human icons
- Dollar signs ($$)
IoT Ecosystem

Device, Software, & Service Vendor

Player Software

Training plans

Training Service

Data

Performance

Planning Service Vendor

Planning Service

Infrastructure Plans

Community Centers

Trainers

IoT Platform

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Introducing **Sentinel Fit**

Sentinel Fit is the smallest secure commercial licensing solution available on the market.

**Sentinel Fit**

Gemalto delivers award-winning software protection features combined with sophisticated, web-based entitlement management capabilities. Sentinel Fit is ideal for embedded systems, supporting virtually all boards and microcontrollers and is free from CPU and operating system constraints.
Ultra-Low **Footprint**

Sentinel Fit offers device vendors the smallest commercially available secure licensing footprint.

- **Sentinel Fit Runtime**
  - Designed for use in highly constrained environments (RAM, CPU power, storage)

- **Resource Consumption**
  - Consumes a low portion of the available free resources on the device.

- **Footprint Size**
  - Smallest commercially available licensing Footprint 34KB Flash, 13KB RAM
High **Portability**

Sentinel Fit includes a feature rich SDK suitable for development on all device platforms.

- **Source Code**
  - Access to Sentinel Fit runtime source code

- **Development Platforms**
  - Supports widest range of environments and platforms, across OS variants, CPU architectures and board types.

- **Flexible Compilation**
  - Compile the source code to meet environmental needs.
Modular Architecture

Sentinel Fit provides the optimal balance between footprint and device functionality.

- **Customization**
  - Tailor the runtime to meet hardware constraints, and reduce footprint

- **Pluggable Cryptography**
  - Reduce footprint by leveraging existing crypto
  - License signature: RSA 2048

- **Do It Yourself**
  - Independently customizable to match specific footprint requirements
Feature-Based Licensing

Sentinel Fit provides device vendors with a customizable feature-based licensing solution

- **Product Functionality**
  - Vendors can use licensing to grant (or deny) access to different software features

- **Licensing Models**
  - Independent license model can be connected to any feature; including perpetual or time-based (expiry date) licensing models

- **License Per Feature**
  - Supports up to 65K features/functions
Tamper-Proof **Licenses**

Licenses are secured from creation to delivery

- **License Enforcement**
  - Licenses define the software usage terms
  - RSA asymmetrically signed

- **License Protection**
  - Only the vendor can generate licenses, and they are protected from illegal manipulation.

- **Secure License Delivery**
  - Licenses are secured in transport
Fingerprint Node Locking

Node locking ensures that licenses are not copied from one device to another.

**Fingerprint Protection**
Vendor creates a fingerprint function based on unique device attributes.

**Vendor Control**
Vendors get full control to enable customization of license locking criteria.

**Illegal Duplication**
Fingerprints are incorporated into the licenses to prevent illegal duplication.
License Activation & Updates

Active and update licenses throughout the product lifecycle

License Activation
Supports activation at production, during fulfilment, and field activation

License Updates
Send new licences or updates to devices in the field

License Control & Management
Supports device personalization per channel or end user

Production Control
Enable to control low-trust contract manufacturers and still allow them to produce offline.
Sentinel Solutions

Gemalto Sentinel delivers a full range of monetization solutions to software developers and intelligent device manufacturers.

Security and Protection
Protect and secure your software products, hardware devices and IP with award winning security solutions.

Licensing & Usage
Ensure compliance and enforce license agreements. Track control and report use of products and features.

Entitlement Management
Manage all licensing operations for on-premise, cloud and embedded software including packaging, provisioning and delivery.

Consulting & Services
Deploy a winning software monetization strategy backed by expert consultation, implementation, training and Managed Services.
Sentinel Licensing Benefits

Sentinel offers a compelling value proposition to intelligent device manufacturers.

**Monetize Your Software Investment**
Transform your business to create a software-centric offering with flexible packaging to generate new revenue streams.

**Reduce Cost of Hardware Variations**
Control tooling, manufacturing and inventory costs via licensing of product variations.

**Accelerate Return on Investment**
Automate upgrades and services for in-the-field devices to capture revenue from recurring investment in software.
Sentinel Back Office Benefits

Automate the entire Product Lifecycle

- **Utilize Customer Centric Data**
  - Get analytic data to understand use cases, build better products and adapt to evolving market needs

- **Controlled Manufacturing Process**
  - Prevent cloning and grey-market copycats
  - Ensure that only entitled devices are activated

- **Control Sales Distribution**
  - Authorize and track what packages your partners, distributors, and sales channel are authorized to sell

- **Device Health Reporting**
  - Device reporting on Last date/time seen, what is installed, what versions, application integrity, and data/configuration integrity
Sentinel Security Benefits

The software monetization market has a significant impact on the way intelligent device manufacturers do business.

**IP Monetization**
Device manufacturers need to maximize the value of embedded software.

**Low Cost Counterfeits**
Prevention of low-cost counterfeits has a significant impact on your revenue streams.

**Secure Firmware Update**
Ensure your devices are future-proof with trusted firmware delivery (ESD) and update validation services.

**Manufacturing Control**
Control the quality of your product when outsourcing to third party manufacturers.

**IP Theft & Trade Secrets**
Trade secret protection by a combination of obfuscation, encryption, and anti-debugging.

**System Integrity**
Ensure your device is ready for the IoT ecosystem and cannot be hacked or modified.
THANK YOU !

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