



# Smart City Network Management in the Cloud Using Pelion

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# Introducing Pelion

Building on our secure heritage and strong foundation from Arm



**300+**  
Inspired Professionals

**500+**  
Ambitious Customers

**150+**  
Thriving Partners

**5**  
Networked Continents



# Intelligent devices are transforming IoT landscape

Smarter and more accessible healthcare



Automation-to-autonomous transformation of Industry 4.0



Ensuring global food supply with precision agriculture



Streamlined lifestyle with the voice-assisted home



Digital urban renewal with smart and connected cities



Optimized transportation infrastructure

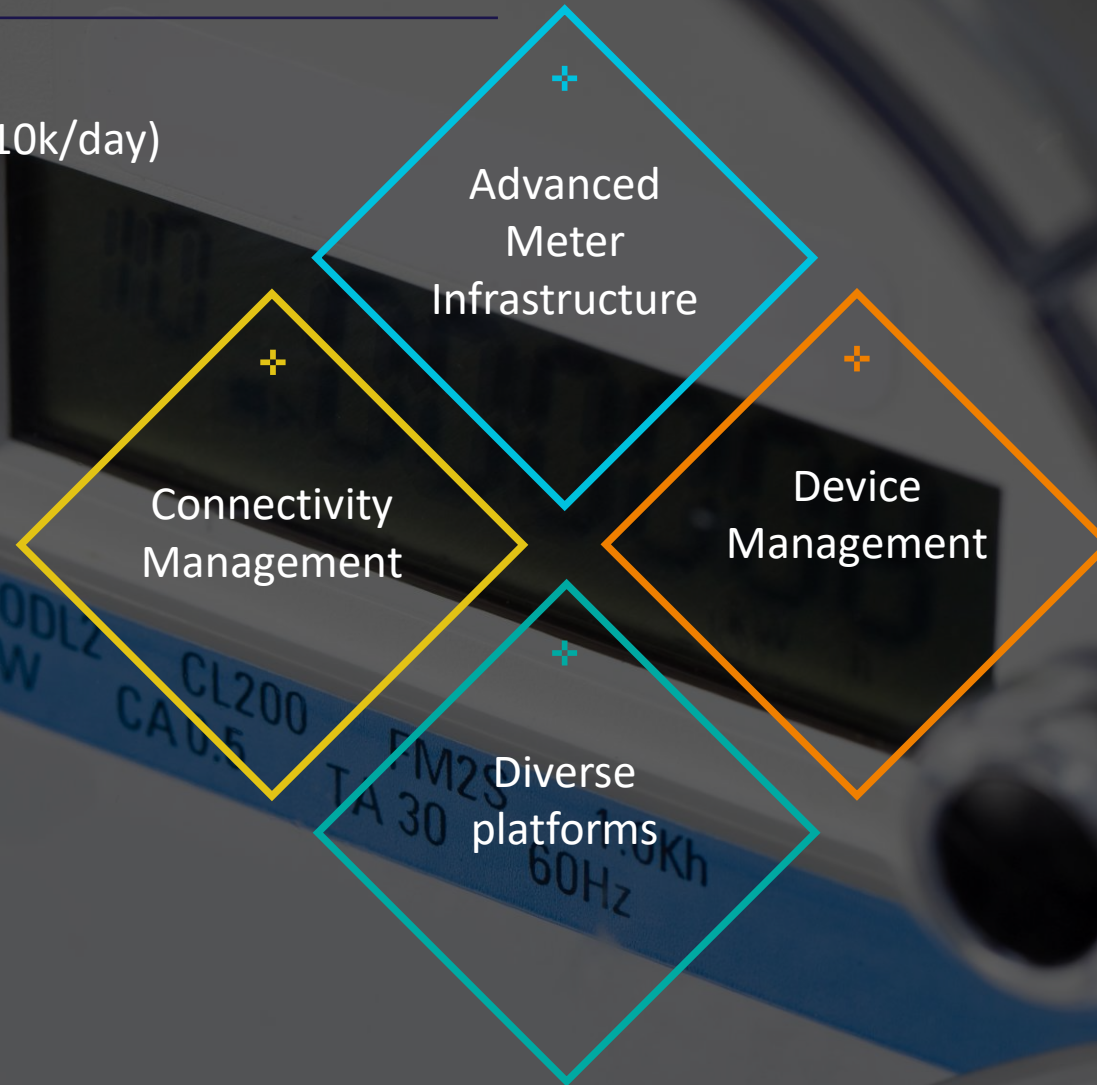


# Challenges for Utilities in smart meter mesh deployments

- Rapid deployment  
(2m meters in 2 years = 10k/day)
- Cost Management –  
government regulated

- Managing Mobile  
Services is Complex
- Service Levels Cost
- Switching providers

- Security breaches  
violate consumer privacy
- Risk utility revenue  
can cause local or  
widespread power failure
- Very high profile



# Business Use Case Examples solved by WiSUN for Utilities

## Meter to Cash

- Automated meter reading and billing svcs. (e.g., scheduled daily electricity usage)
- Tiered Commercial/Industrial use svcs. (e.g., demand & power surcharges)
- Monitor, maintain, analyze, and provide intelligent insights from data
- Facilitate marketplace for energy buyers to purchase on the spot mkt.



## Remote Operations

- Easy connection/disconnection of residential service via electric relay
  - Inconvenient for customer and expensive for utility
- Improve AMI connectivity SLA from days to minutes or seconds
- Responds pro-actively to situations



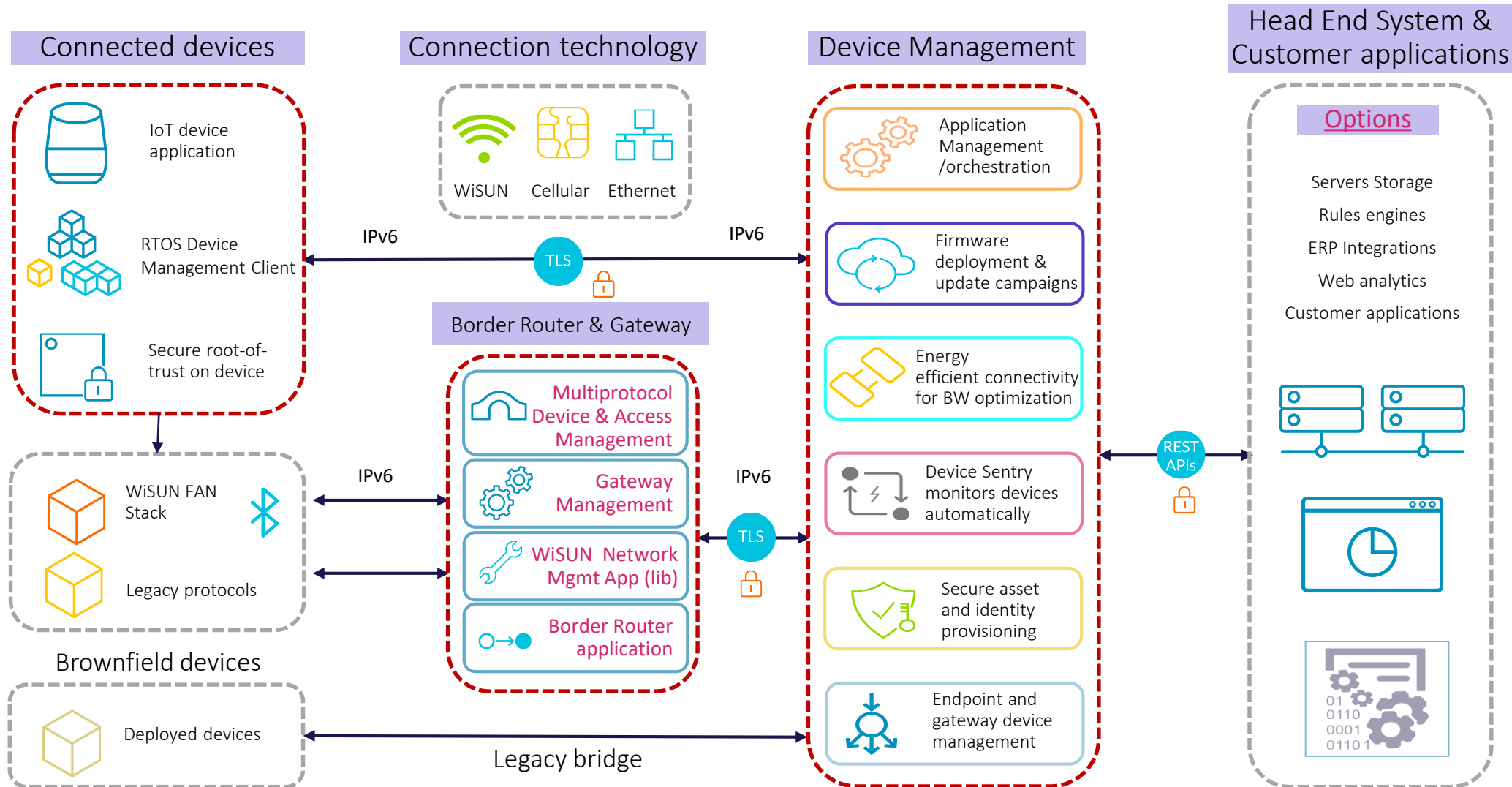
## Non-Technical Lossless Transmission

- Money saving for utilities by eliminating power theft issues
- Simple methods to detect fraudulent activities
  - Transformer metering and mapping smart meters to serviced transformer
  - Monitor differences between the sum of the services and the transformer

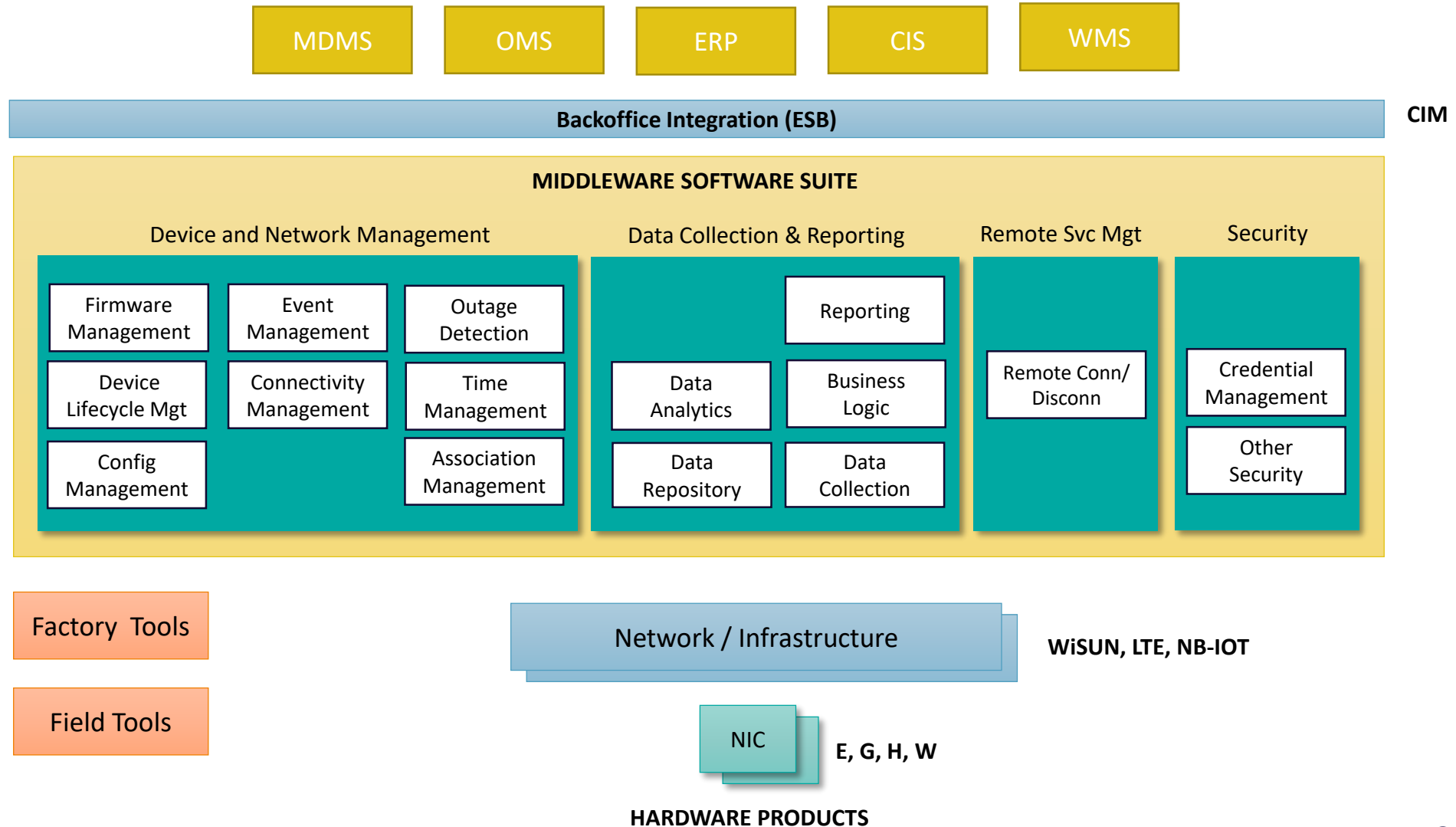


# Architecture for Wi-SUN Mesh IOT deployments

Enables customers to quickly build large-scale, secure and future-proof IoT solutions

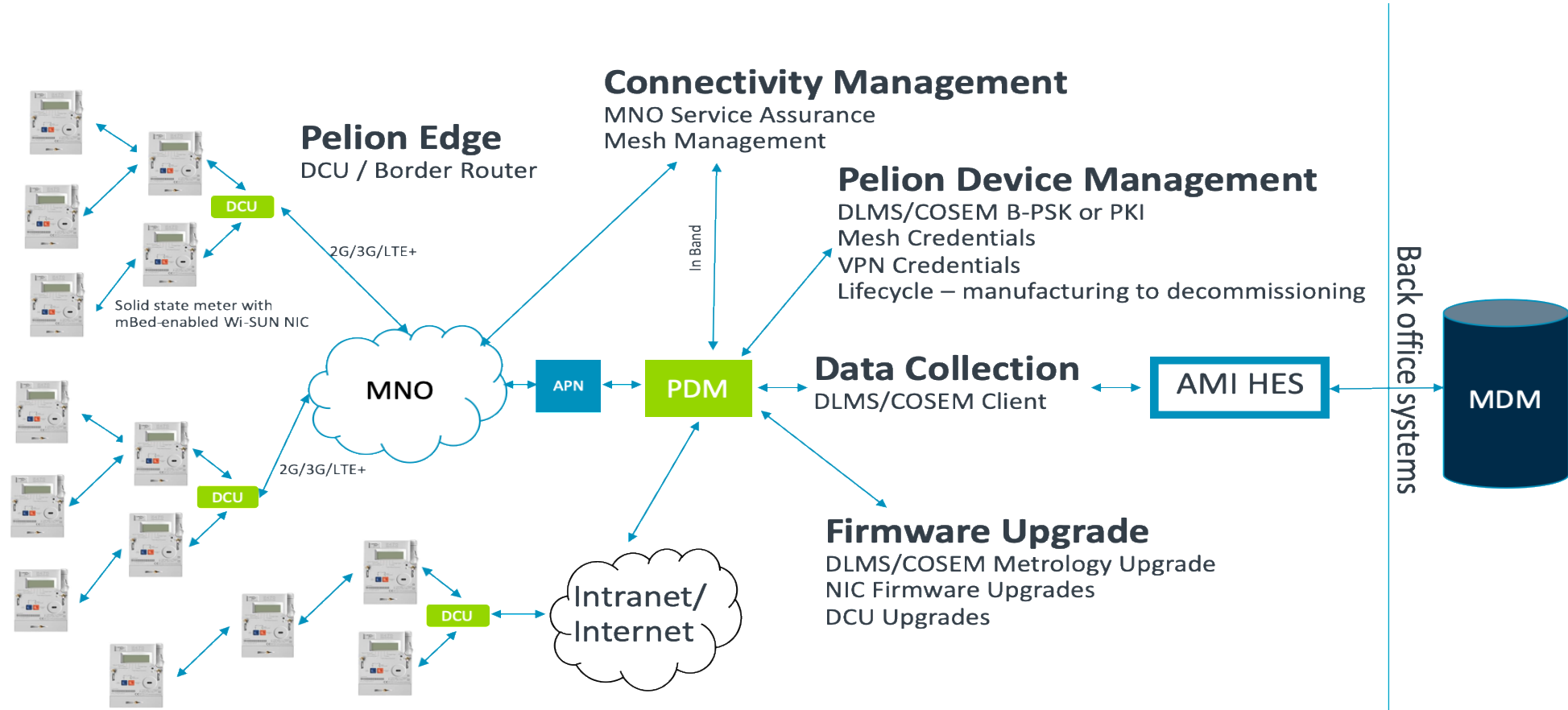


# Wi-SUN Mesh deployment – Feature clusters examples



CIM

# Wi-SUN network architecture implementation

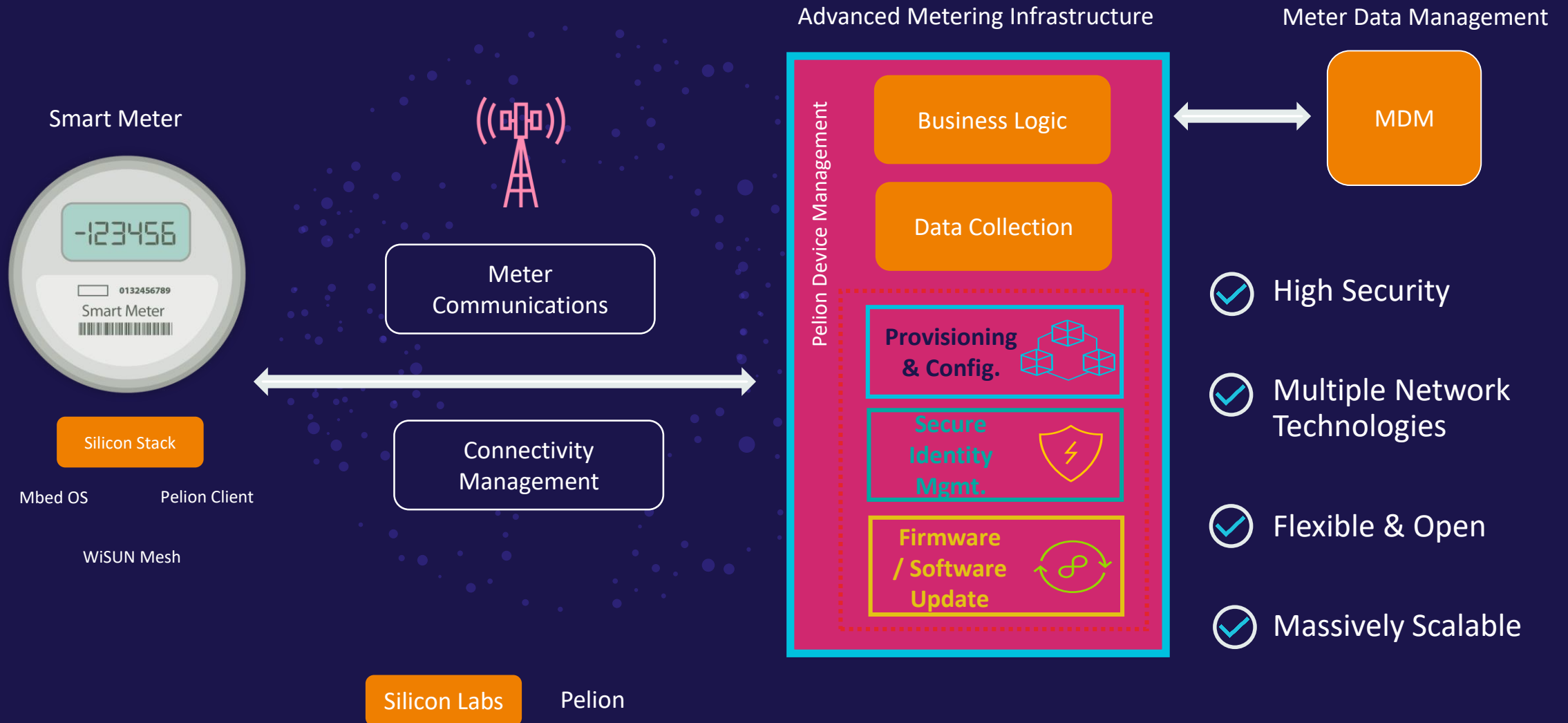


\*LTE, 3G, or GPRS

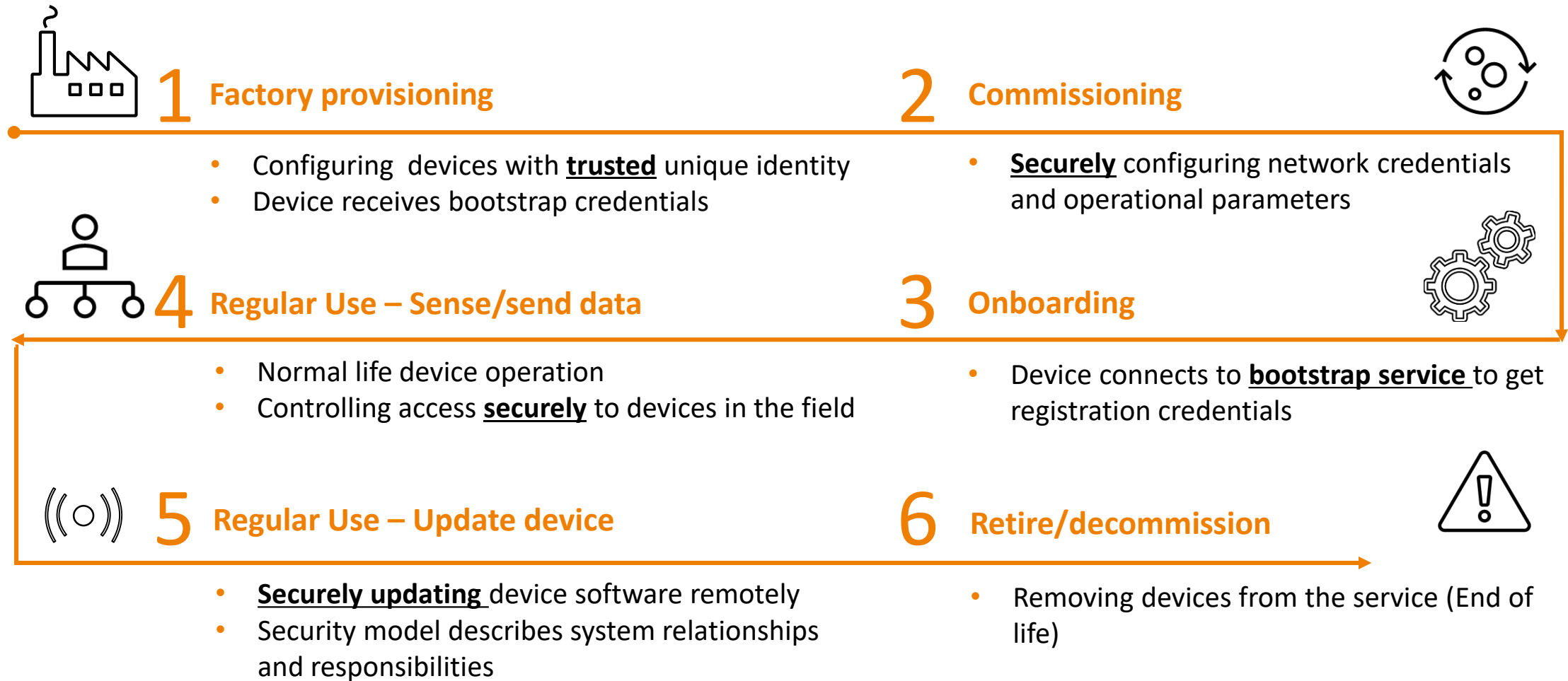


# Pelion and Silicon Labs partnership

End-to-end utilities solution built on top of Pelion IoT Platform



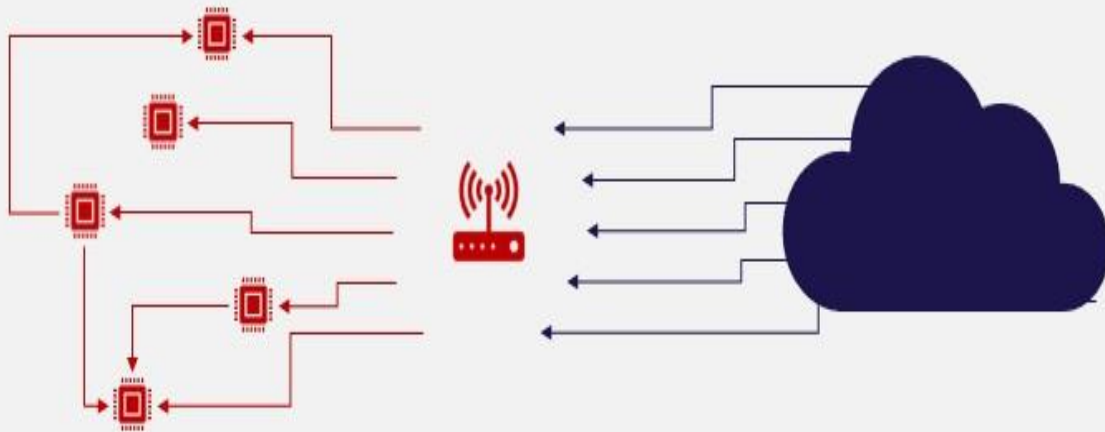
# Security must be managed through the entire device lifecycle stages



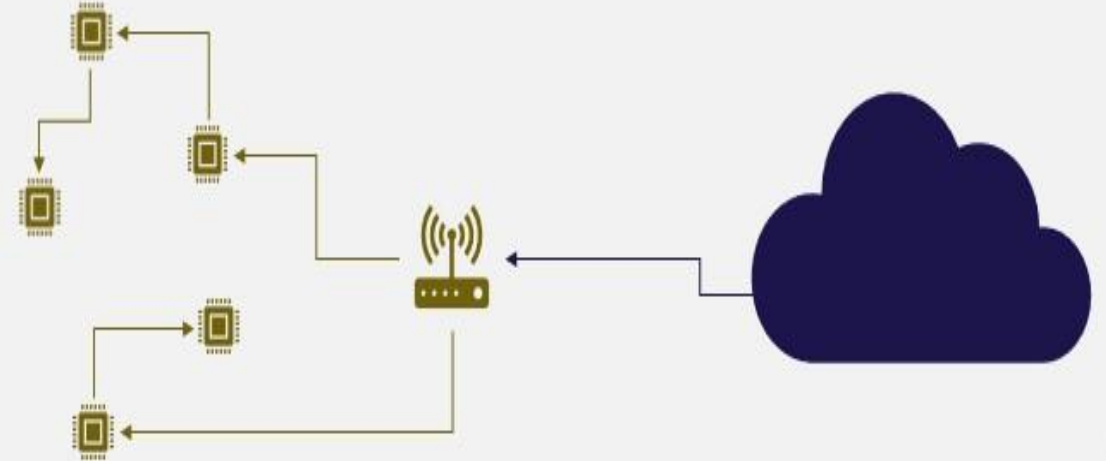
# Wi-SUN implementation is optimized for enhanced performance

Synchronized multicast firmware updates

Unicast



Multicast

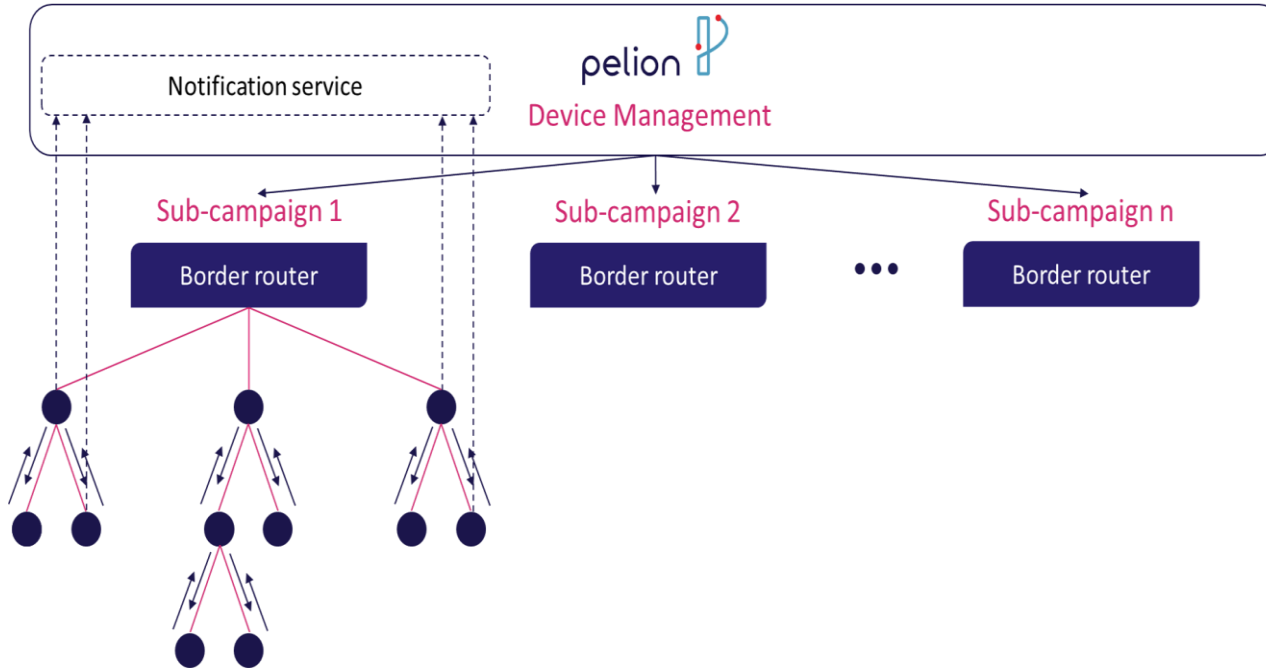


**Multicast firmware updates provides the ability to update devices in constrained mesh network while allowing reduced network downtime and no “popcorn” effect**

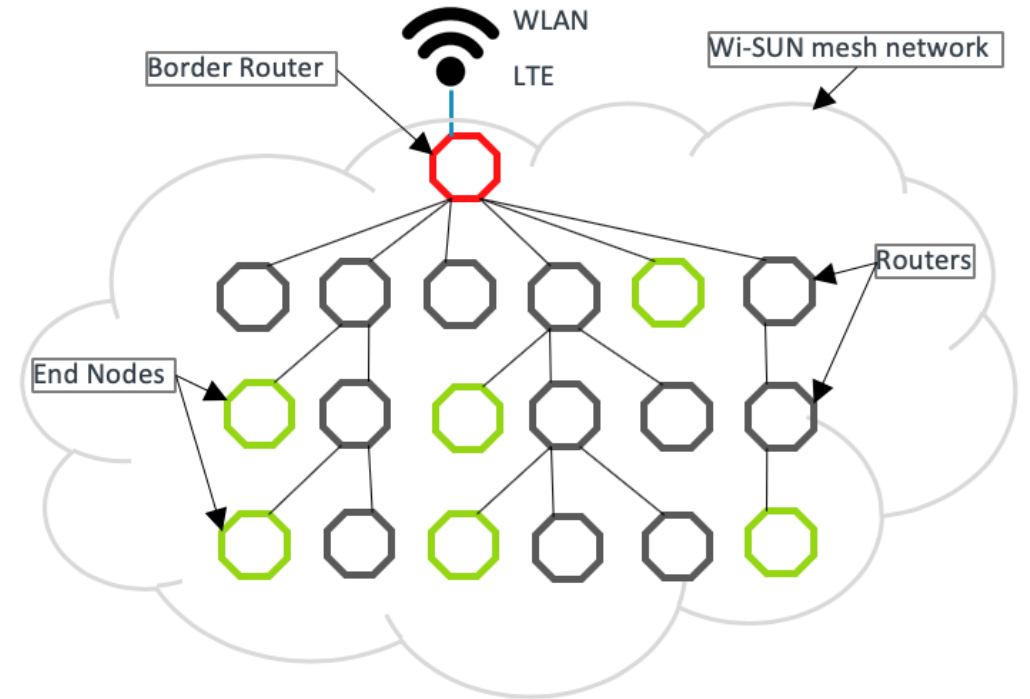
# Wi-SUN implementation is optimized for enhanced performance

Synchronized multicast firmware updates and campaign synchronization

*Continued*



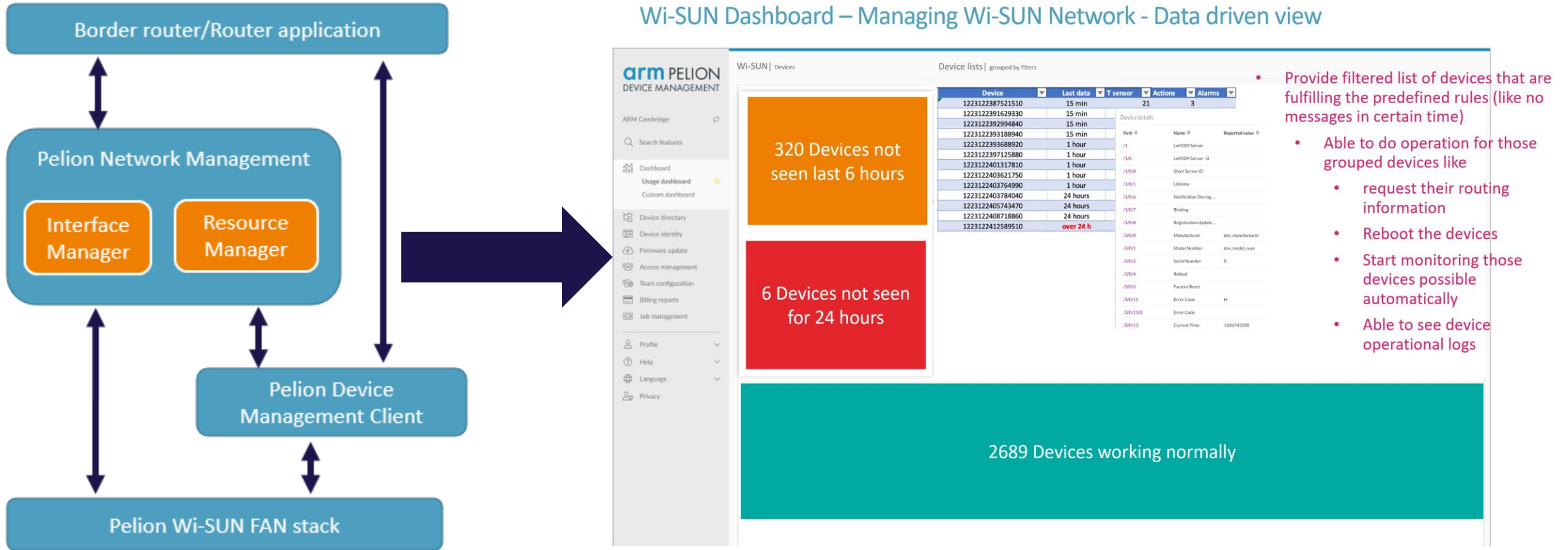
**Synchronized Multicast firmware update**



**Campaign Synchronization**

# Pelion Wi-SUN implementation is optimized for enhanced performance

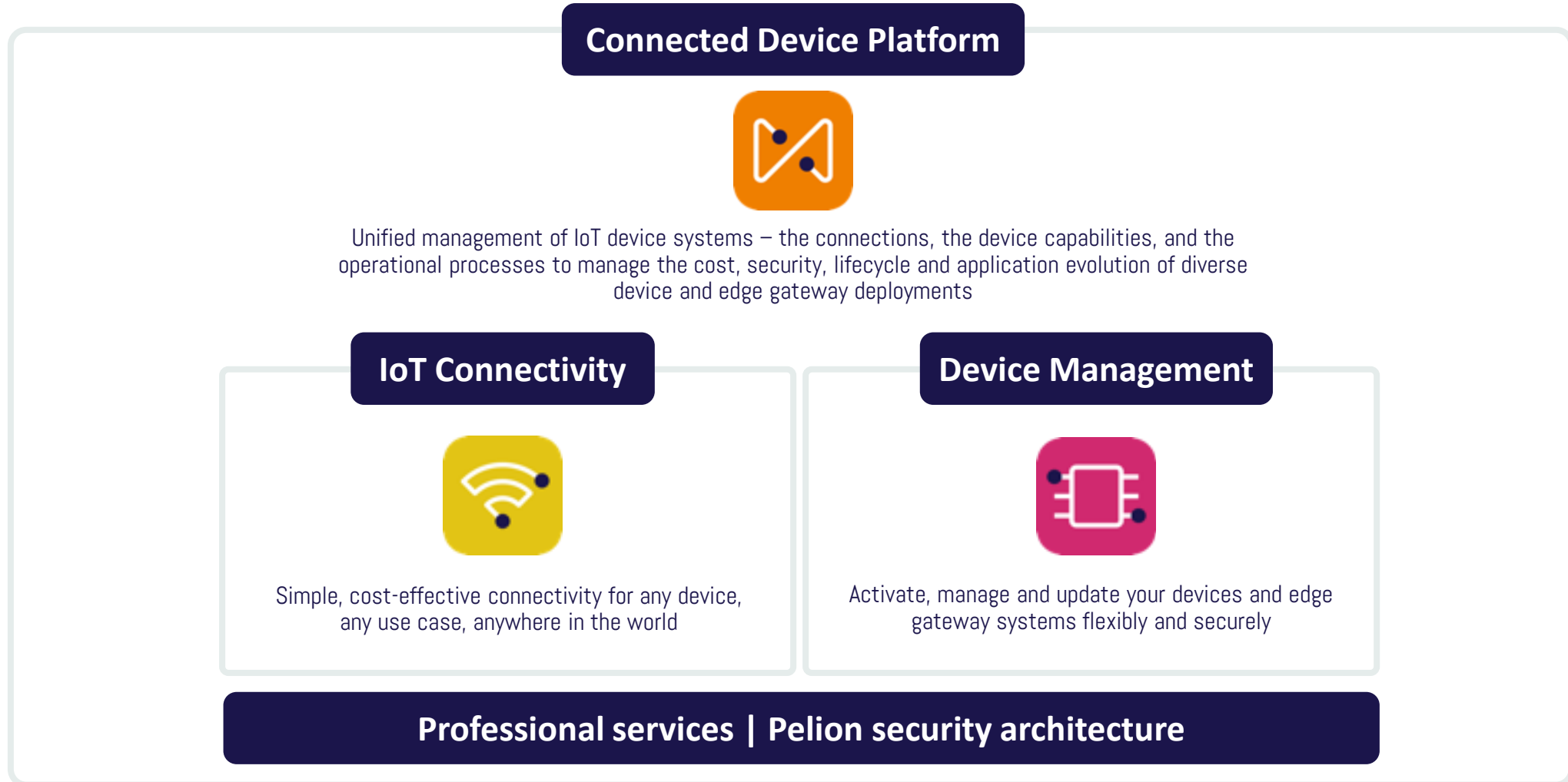
Advanced network management solution



LwM2M enables easy implementation of Pelion network management solution

# Pelion supports IoT builders – no matter the starting point

Customers can preserve design choice while avoiding heavy, undifferentiated lifting





A flexible foundation to  
enable secure IoT device  
deployments at scale

Flexible: Any device, any network, any cloud



Secure: Chip-to-cloud



Extensible: Evolve deployed, at-scale systems  
in-line with business and application needs



**Together we can do more**