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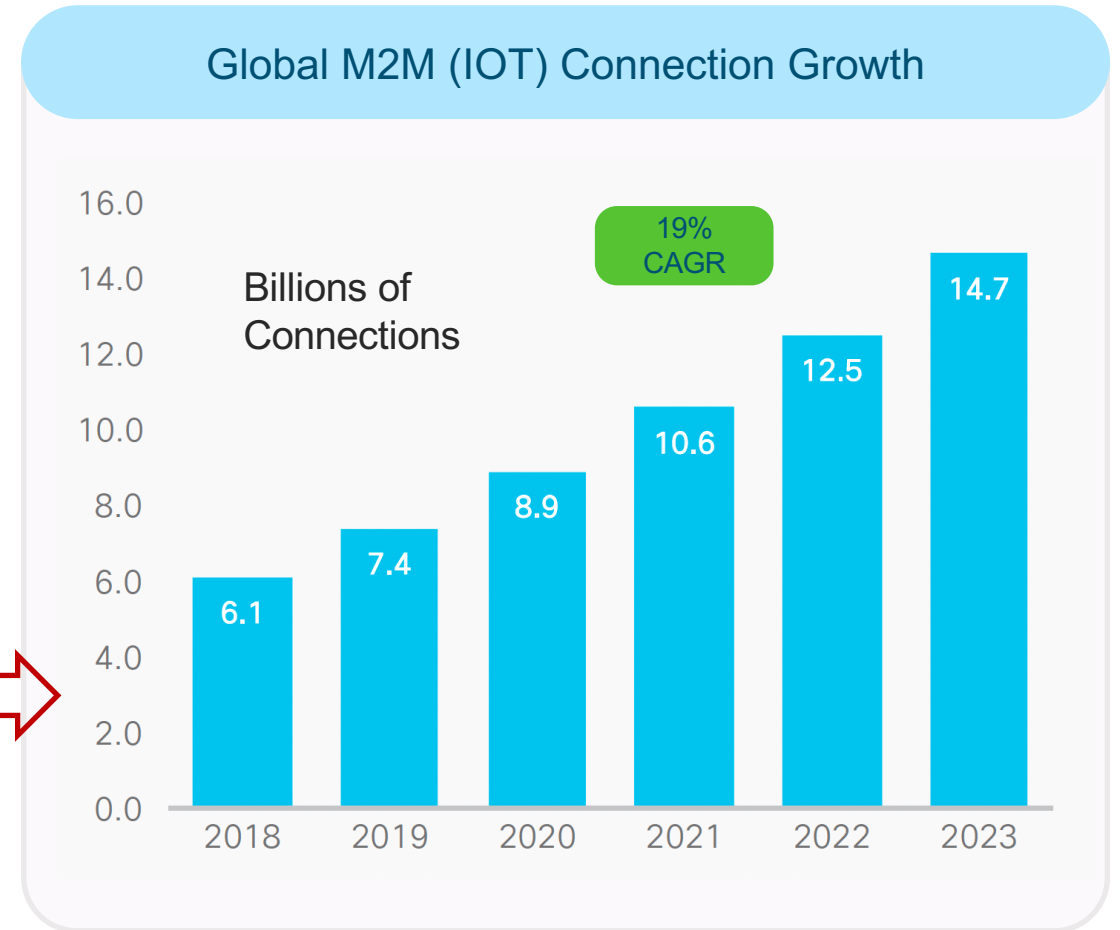
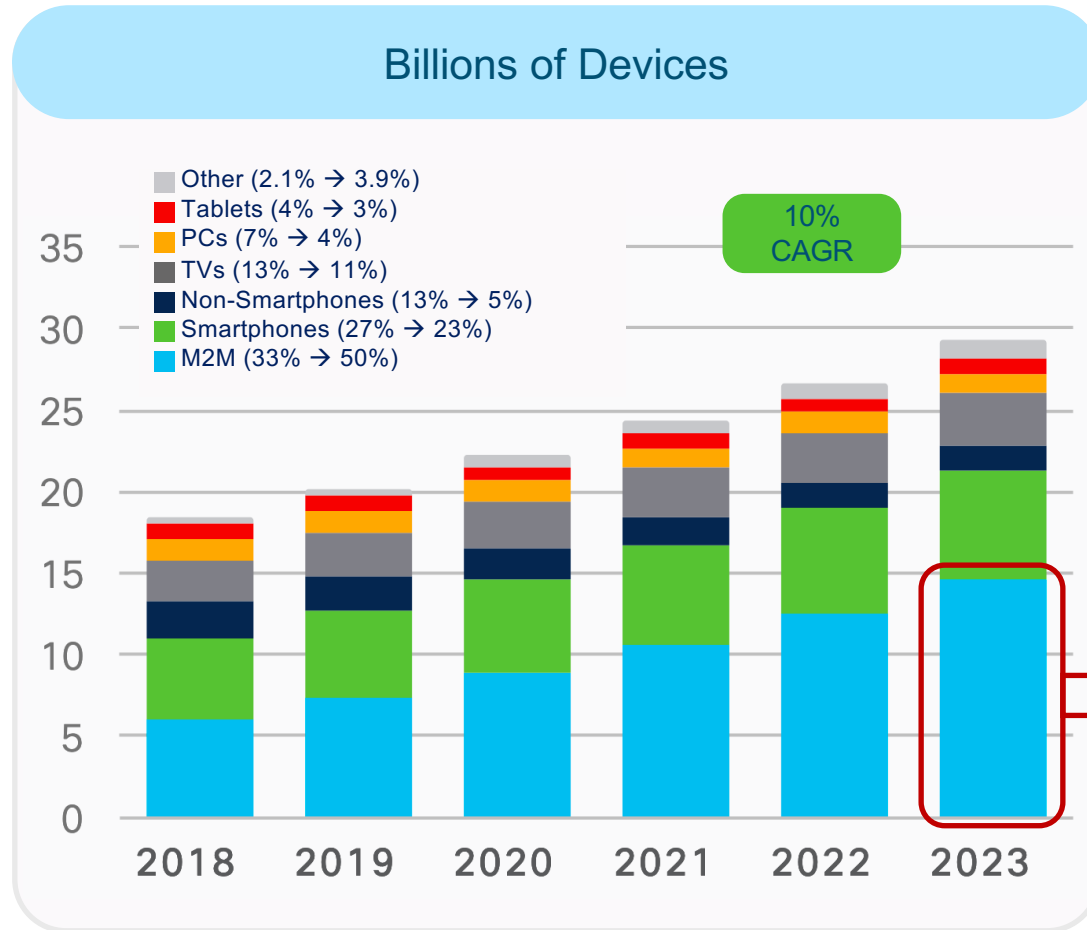
Design IoT-Ready Enterprise Grade Wi-Fi Access Points

Bart Brinckman, Owen Troy | August 2023



IoT in the enterprise

IoT device growth



For the first time in 2023, more than 50% of connections will be from IoT devices. IoT devices are the only device type with an increasing share of total connected devices

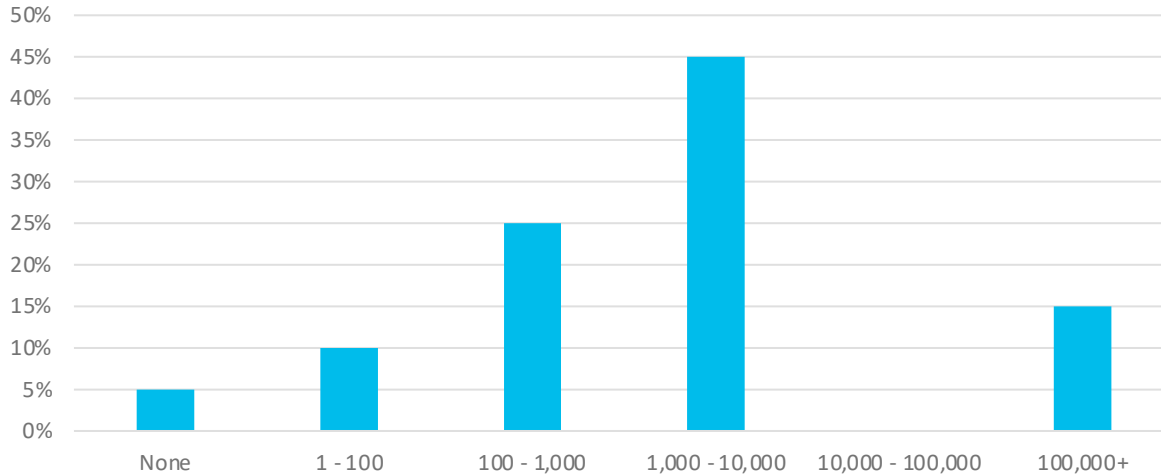
IoT devices are the fastest growing device types in enterprises with 19% CAGR

IoT in the enterprise

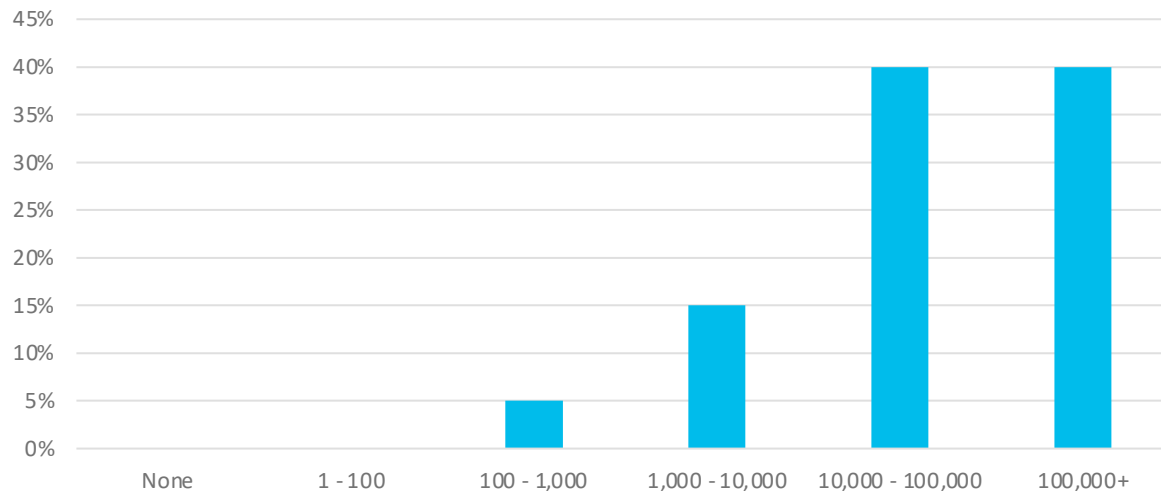
What our customers tell us

2022

lot devices 2022



lot devices 2025



2025

Drivers:

1) Hybrid work & sustainability

- Lower seat occupancy
- Environmental monitoring & Control

2) Smart value chains

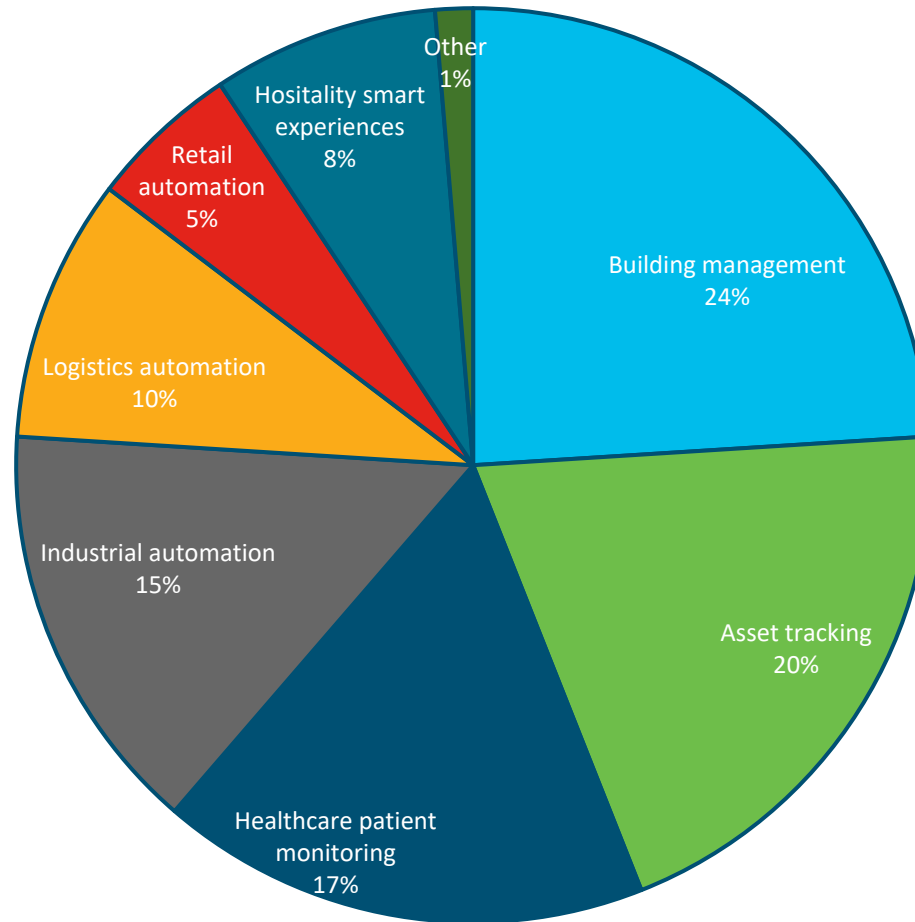
- Healthcare
- Retail
- Hospitality

3) Automation

- Manufacturing
- Supply chain
- Operations

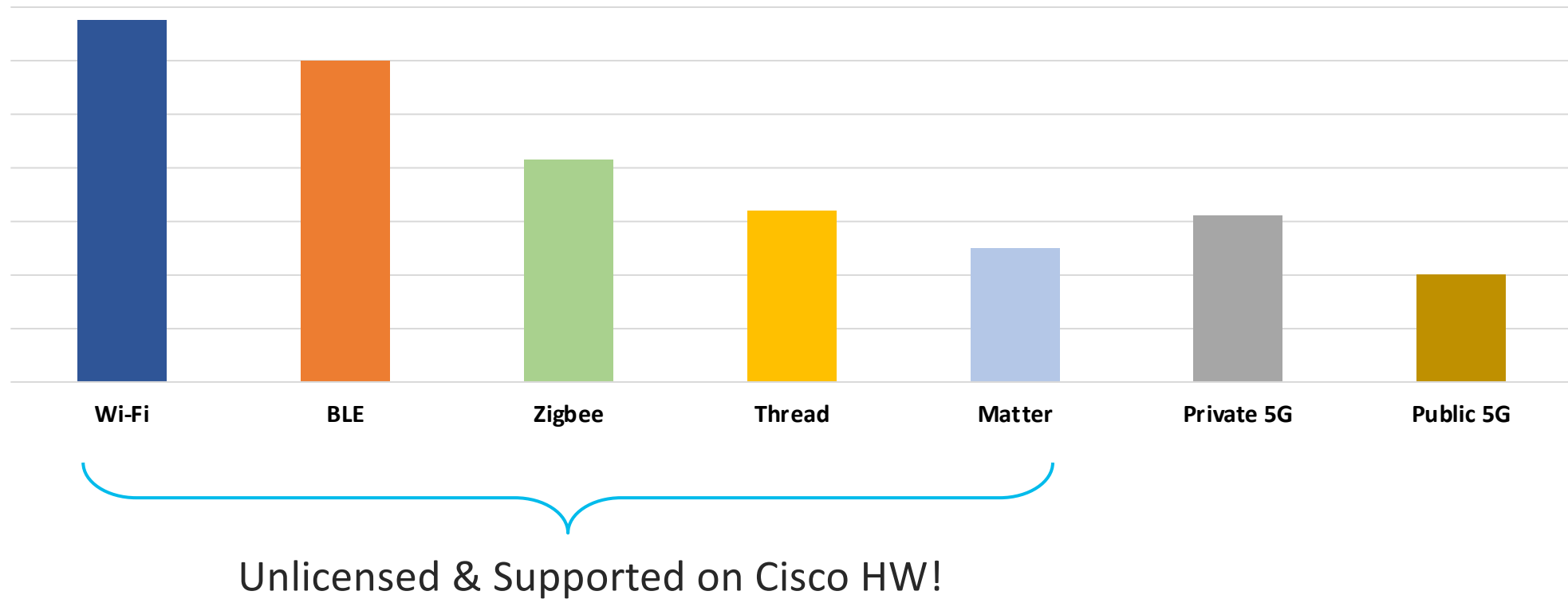
A diverse set of Enterprise use cases

Enterprise IoT use cases



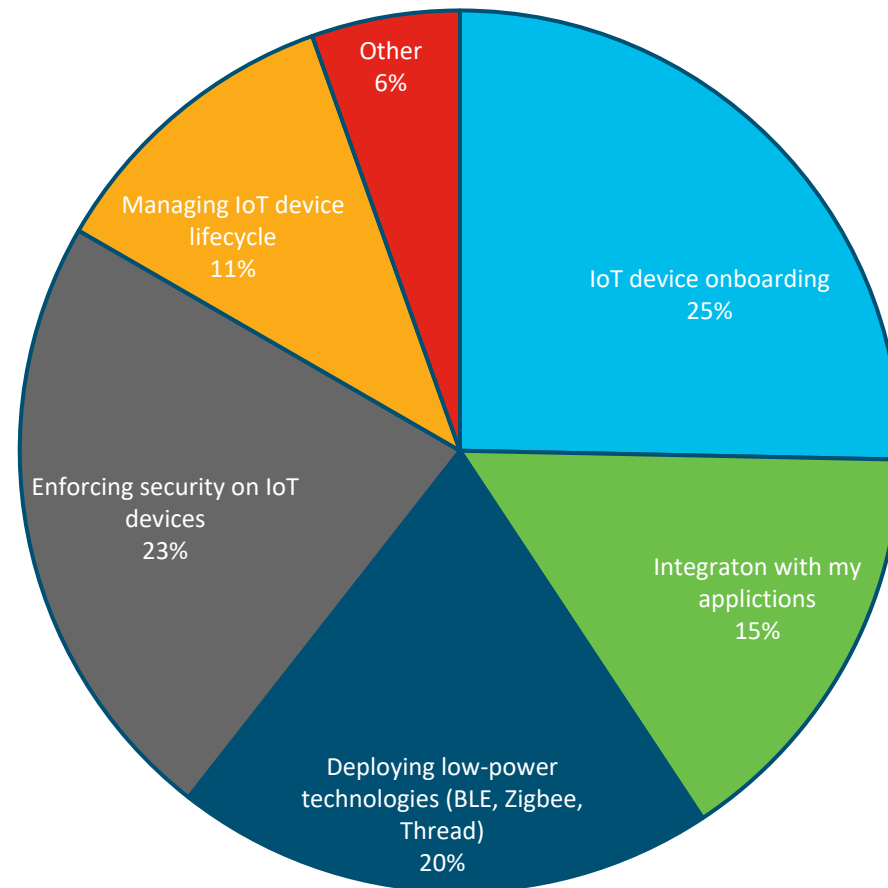
IoT wireless technology ranking

Survey of Cisco customers – what IoT access is most important to you?



The eco-system is not quite ready

Enterprise Top concerns when implementing IoT use cases

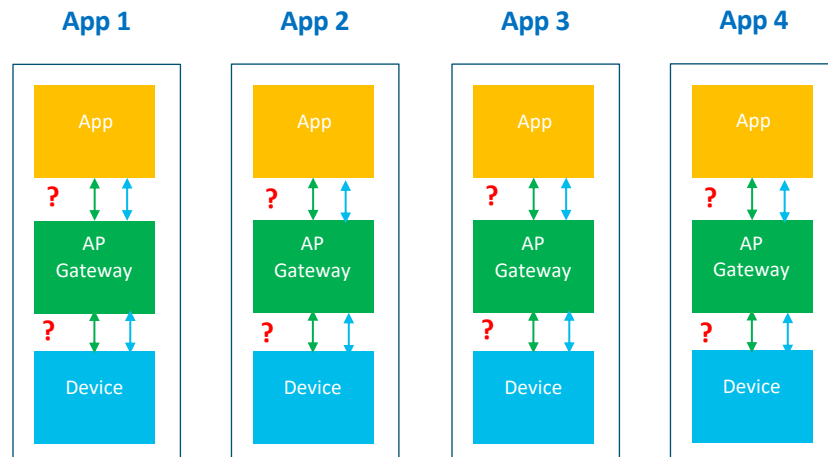


How do we solve these painpoints?

The enterprise eco-system is fragmented

Proprietary stovepipes hold back growth

Proprietary stovepipes



↔ **Onboarding:** developed for home or personal area networks

↔ **Device Control:** Proprietary per app/device

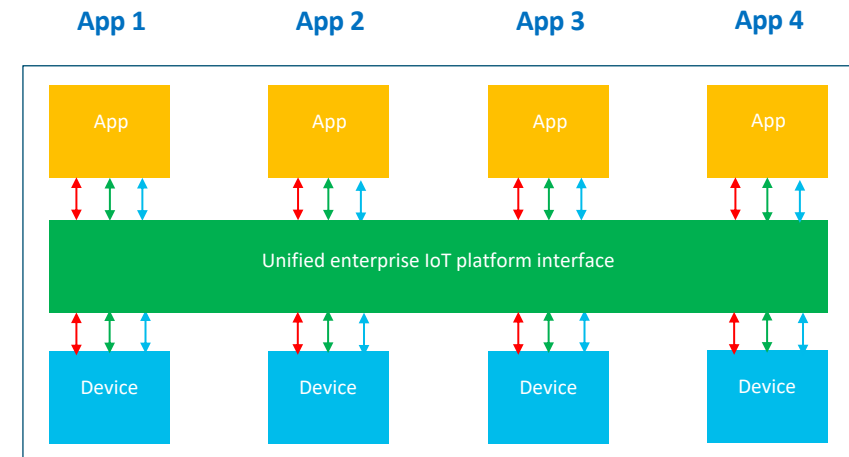
↔ **Telemetry/data:** Proprietary per app/device

Apps and devices are developed hand in hand with network 'gateways', typically 1 app – 1 stack, protocols not suited for enterprise environment

Closed system, does not scale beyond a couple apps.

From To

The need for a standard



↔ **Onboarding:** app-based realtime/non-realtime

↔ **Device control:** Policy-based (defined in the network)

↔ **Telemetry/data:** Structured API, data + meta-data

Enterprise IoT needs a standard that will allow the network to act as a platform offering secure automated onboarding of any device to any network connecting to any application

Open system, scales to many apps and devices.

Success Factors



Standards-based approach for
partners



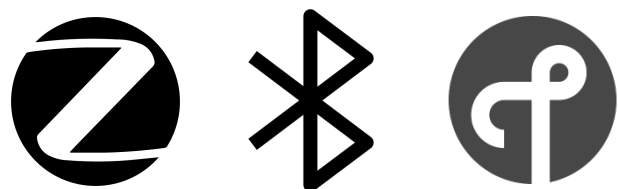
Works with what is in the market, &
Extensible to new onboarding
standards and L2 technologies



Leverage existing customer
investment in APs and controllers

Leverage existing IT infrastructure:

Catalyst 9100 Series Access Points have a built-in Silabs IoT radio



**Configure as a
BLE Gateway**



Enable Catalyst 9100 Access Points as a BLE Gateway



**Configure as a
Beacon or BLE
Centra**



BLE scanning and connection-based communication, or
AP (virtual beacons)



**Configure and
Talk to devices**

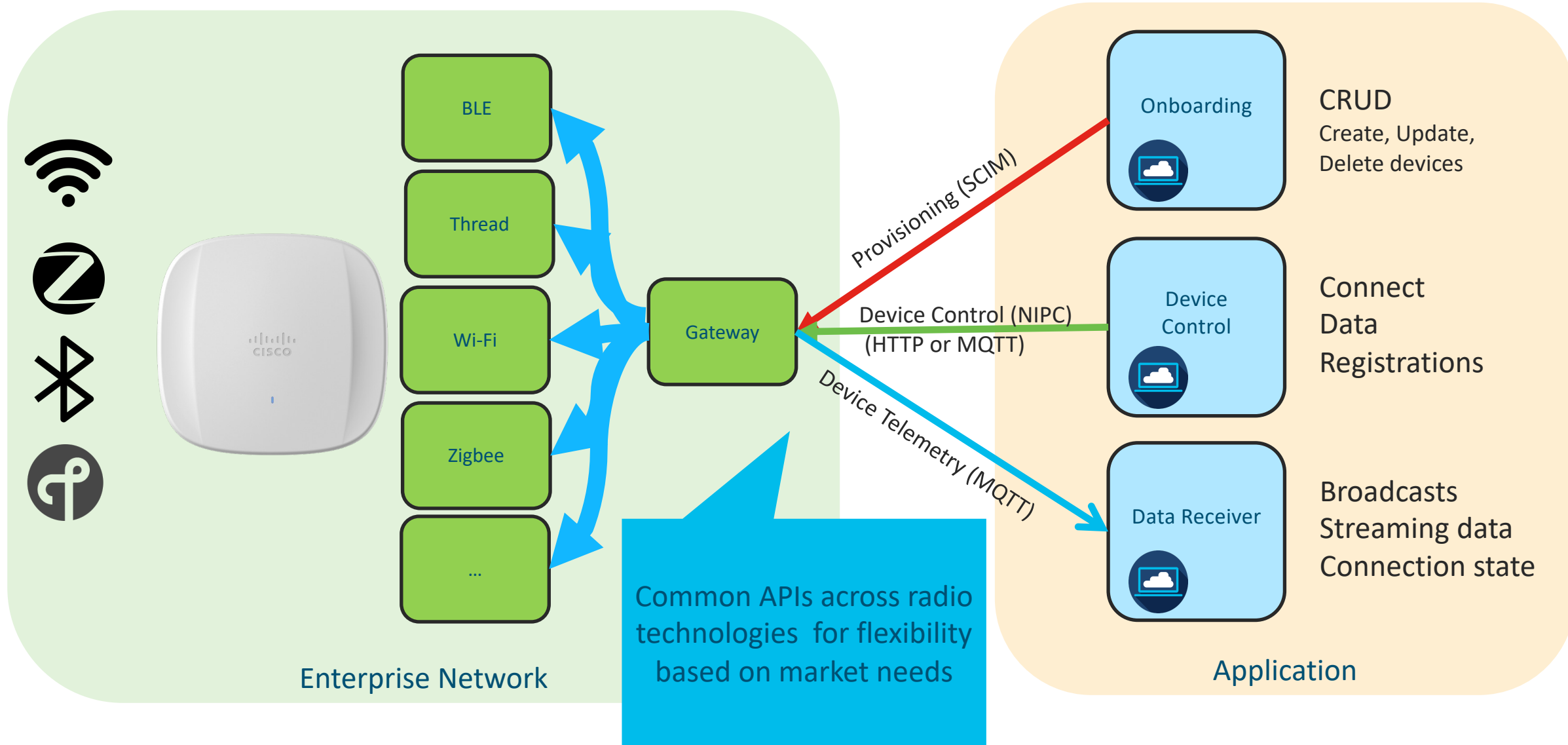


Configure the BLE devices from Cisco Spaces or
other applications and consume telemetry from
devices.

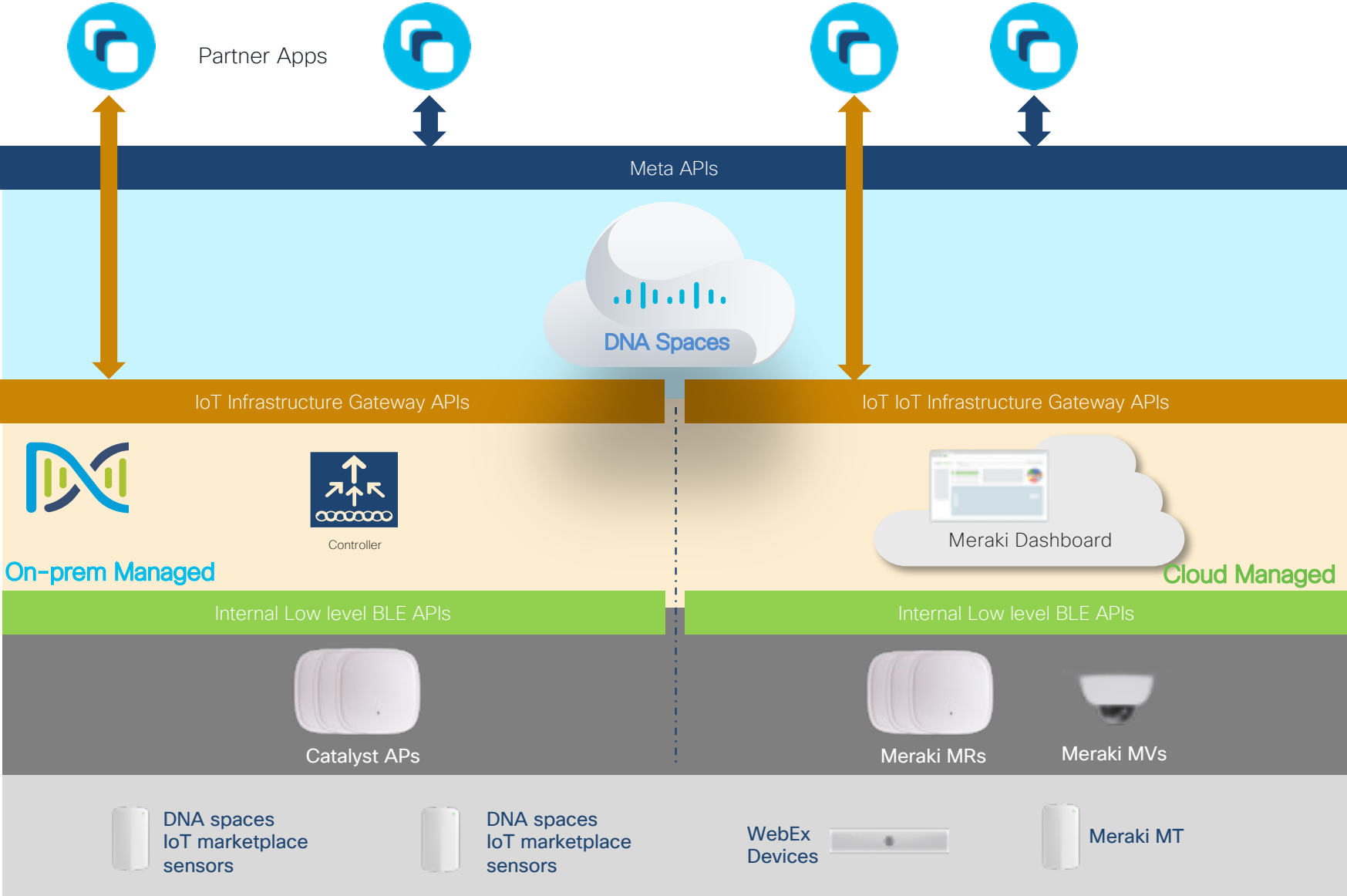
More coming soon...

Standardizing APIs:

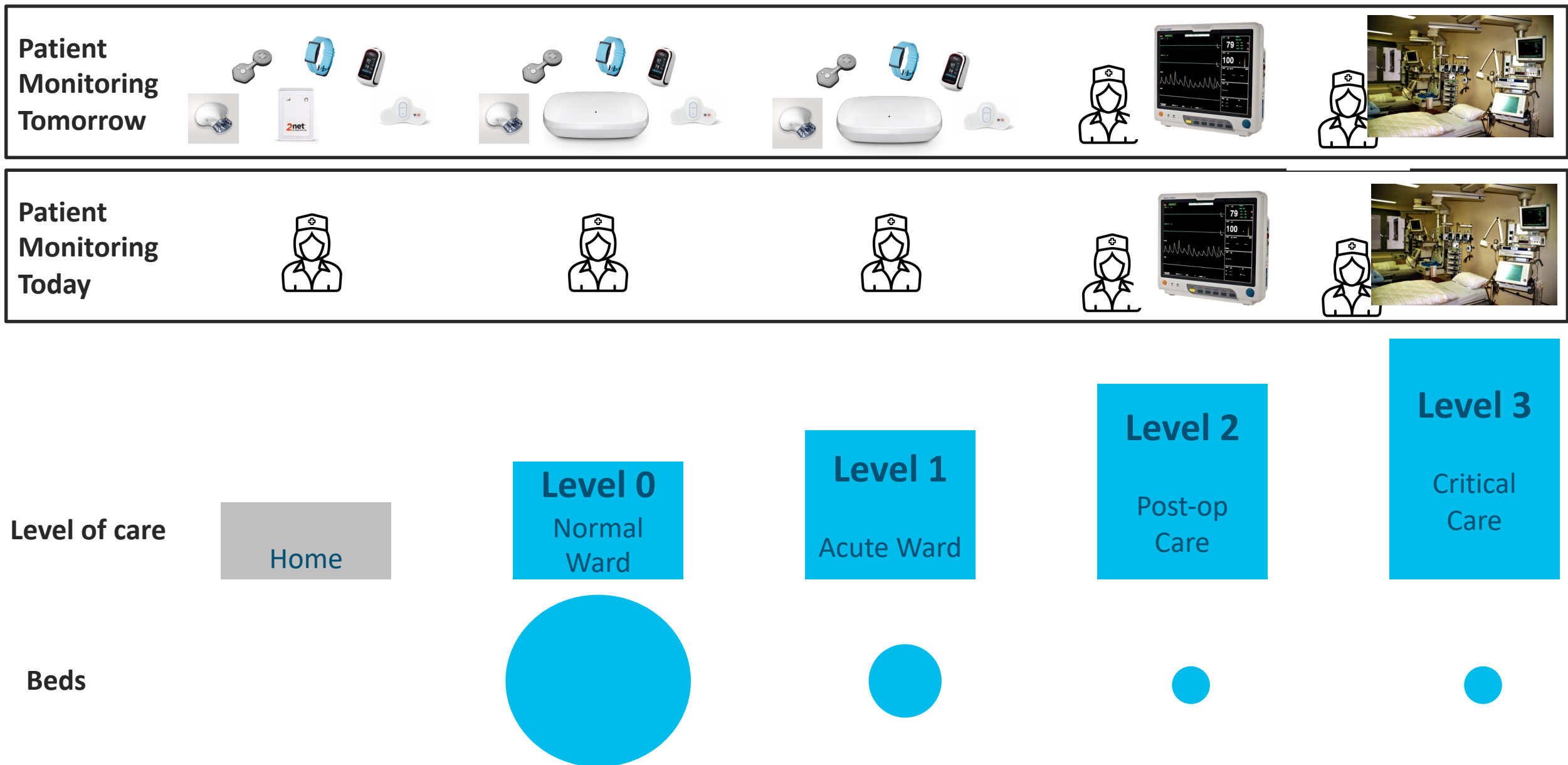
Accelerating use case deployment

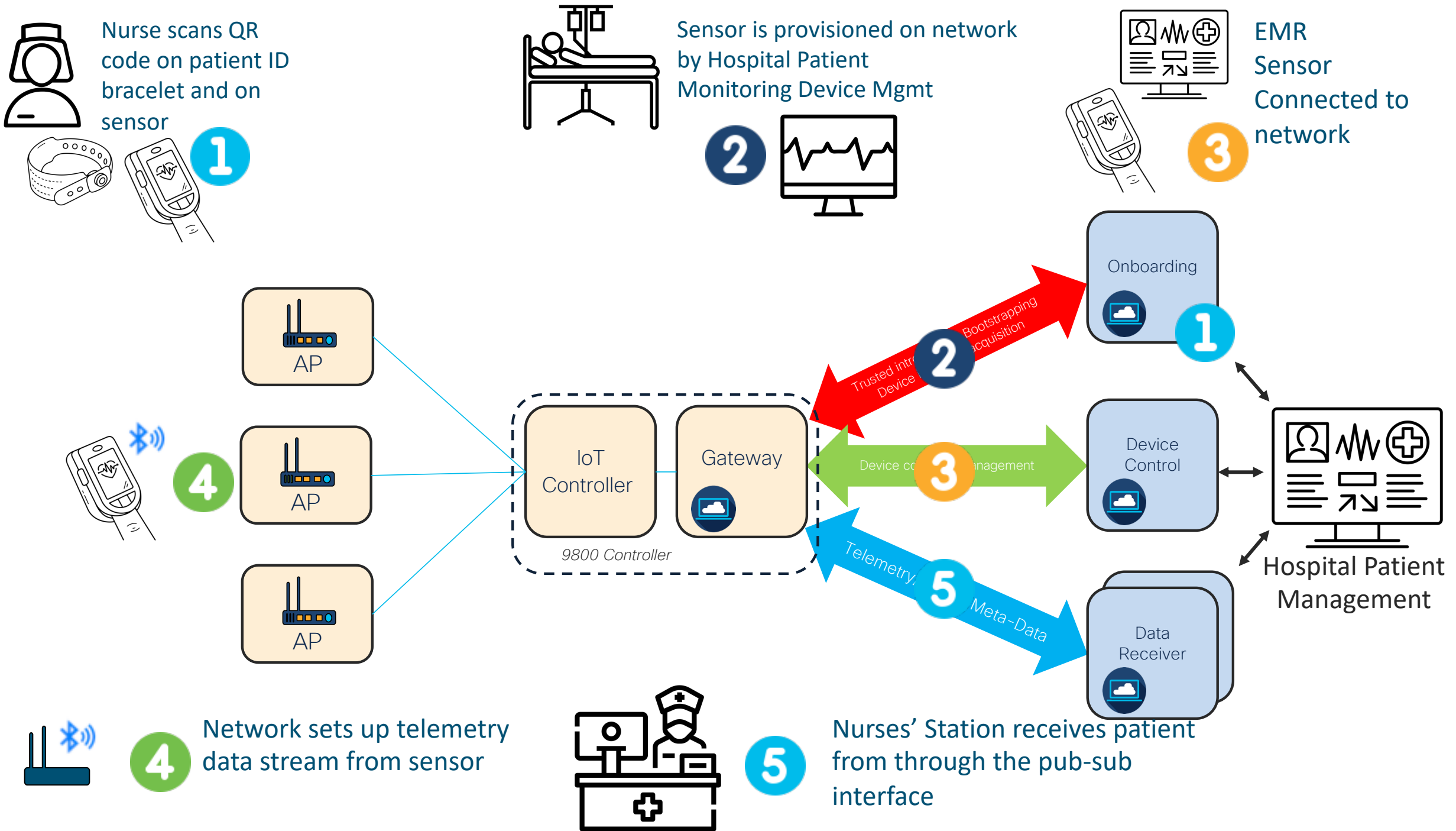


Open Application integration

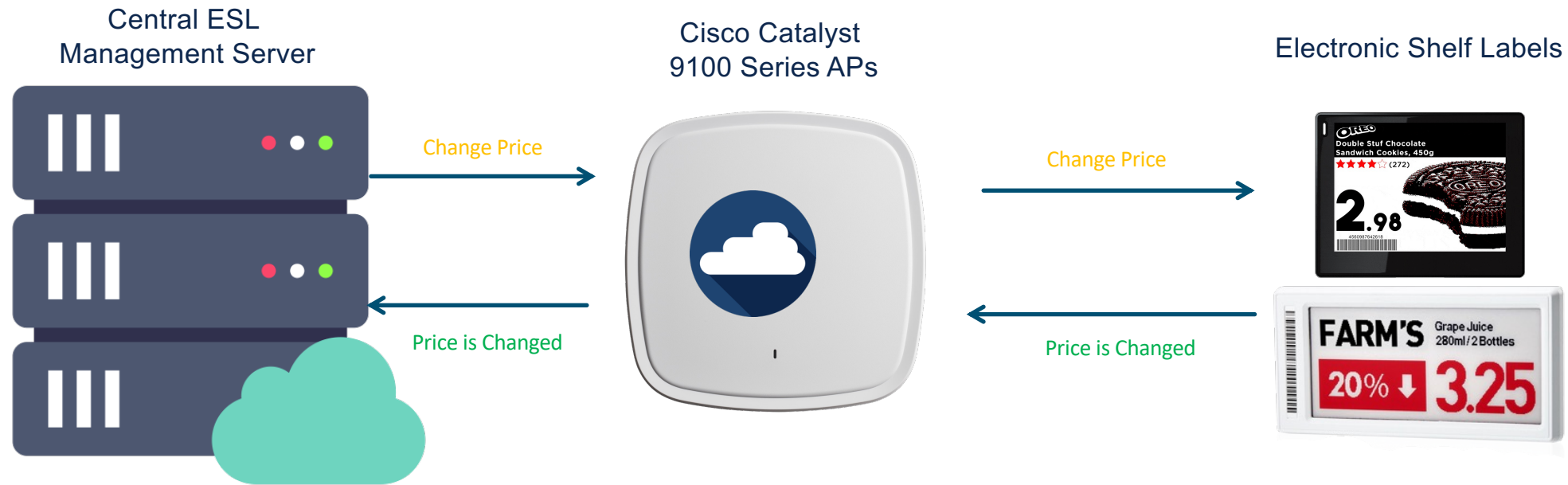


Example use case: Patient monitoring with wearables





Retail Store IoT Electronic Shelf Labeling



Remote price update

Item location
discovery

Immediate Item
availability check

Cisco Spaces IoT Device Marketplace

Ecosystem of third-party IoT devices – wired and wireless

The screenshot displays the Cisco Spaces IoT Device Marketplace interface. At the top, the header includes the Cisco Spaces logo, the title "IoT Device Marketplace", a search bar, and a user profile for Jose Correa. Below the header, there are two dropdown menus for "Industry" (set to "Workspaces") and "Use Case" (set to "All").

The main content area is divided into a left sidebar with filters and a grid of product cards. The filters include:

- FILTER BY**
- Type**: Radio buttons for "Wireless" (selected) and "Wired".
- Price Range**: Radio buttons for price ranges from "< US \$20" to "US \$100+", with a "CLEAR" link.
- Battery Life**: Radio buttons for battery life durations from "> 3 months" to "5+ years", with a "CLEAR" link.
- Technology**: A section for selecting specific technologies.

The product grid shows six items:

- EnOcean EDRPB-CS**: A light switch. Lead Time: 0.5 week. Features: Self-powered, no batteries, lighting, HVAC and shutter control, NFC. Price for 1 unit: **US \$41.28**. Volume discount for 1000 units: **Up to 19%**. Button: "View Details".
- M1 Tag Beacon**: A small circular beacon. Battery: 8 months. Lead Times: 3-5 weeks. Features: 3-axis accelerometer sensor optional. Price for 1 unit: **US \$10.00**. Volume discount for 1000 units: **Up to 41%**. Button: "View Details".
- i7**: A circular sensor. Battery: 1.6 years. Lead Times: 6-8 weeks. Features: Replaceable battery, external on/off button. Price for 1 unit: **US \$15.00**. Volume discount for 1000 units: **Up to 20%**. Button: "View Details".
- kontakt.io**: A small square device.
- GOOD WAY**: A small rectangular device.
- EnOcean**: A square sensor.

Cisco Spaces IoT Explorer

Monitor, manage, and optimize assets, Internet of Things (IoT) sensors, alerting system, and operational workflows

The screenshot shows the Cisco Spaces IoT Explorer interface. On the left is a sidebar with 'IOT EXPLORER' containing 'Use Cases' (selected), 'Users', and 'RELATED LINKS' (Location Hierarchy, Set Up Guide, IoT Device Marketplace). The main area is titled 'Explore Use Cases and set up a new one below' with a subtext 'Click on a Use Case to get started and to learn more about each solution in DNA Spaces'. It features three cards: 'Temperature Monitoring' (Monitor spaces and receive notifications of changes in temperature), 'Asset Tracking' (Locate, monitor and set up alerts to gain insight into your asset locations), and 'Presence Detection'. Below these is an 'Active Use Cases' section with a note: 'Below is where you will find all your active use cases; like tracking the temperature of your temperature for snacks!'. It lists two active use cases: 'Asset Tracker Test - Map View' (3 ASSETS, 0 EVENTS, Last modified 02-11-2022) and 'Asset Tracking MFD' (1 ASSETS, 0 EVENTS, Last modified 11-07-2022).

The screenshot shows the 'Temperature Rule' configuration window. The title bar says 'Temperature Rule'. The main area displays a rule configuration diagram. At the top is a trigger box labeled 'Temperature Rise' with the condition 'Temperature raise above 22° Celcius'. Below this are two action boxes: 'Log the Event' (with a lightning bolt icon) and 'Send Email' (with an envelope icon). The 'Log the Event' box shows 'Logged as an event'. The 'Send Email' box shows 'Send to role User Case Manager'. On the right side, there are tabs for 'Rule', 'Conditions', and 'Actions'. The 'Rule' tab is selected, showing a list of temperature-related rules: 'Temperature Rise', 'Temperature Drop', 'Temperature in Range', and 'Temperature Outside Range'. Each rule has a description: 'Trigger this rule when temperature rises by a specified amount.', 'Trigger this rule when temperature drops by a specified amount.', 'Trigger this rule when temperature is within a specified range.', and 'Trigger this rule when temperature is outside a specified range.' respectively. A warning message at the top right states: 'You can choose only one parameter per Rule. Create a new rule to enable additional parameters.'

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Thank you!

