
AWS
re:Invent

IOT310

Achieving tangible business outcomes with edge-to-cloud IoT solutions

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“Simplicity is complexity resolved.”

Constantin Brâncuși

Sculptor (1876-1957)



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Agenda

IoT complexity and challenges

How AWS and AWS Partners help simplify IoT

Demo of solution with LoRaWAN connectivity

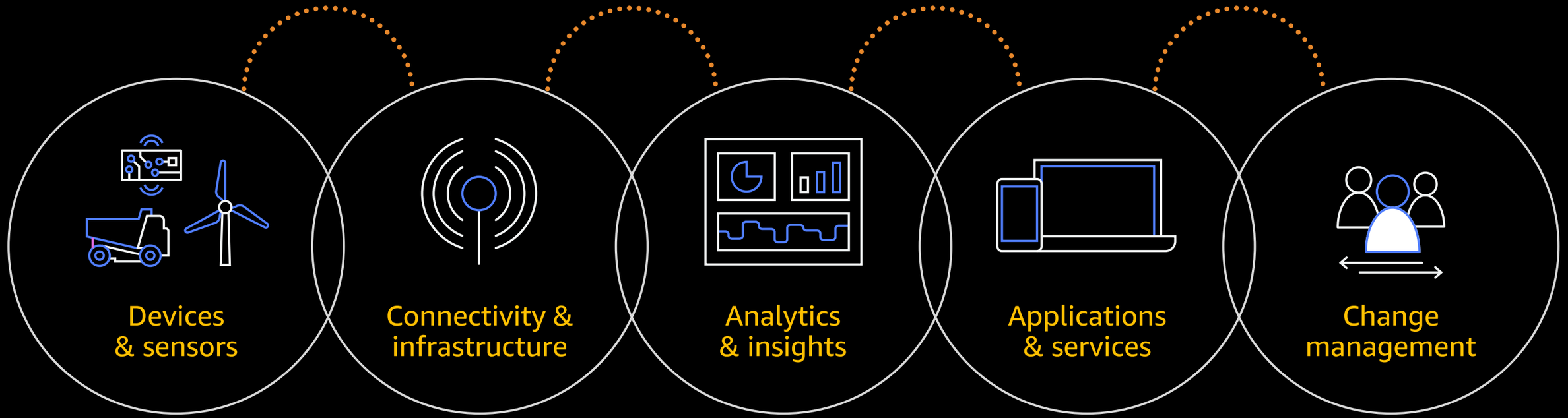
IoT customer success with LoRaWAN

Where to learn more



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IoT is complex and multidimensional



Onboard, provision, manage

Connect, communicate, secure

Analyze, visualize, act

Engage, empower, delight

Transform, shift culture

Complexity makes path to production difficult

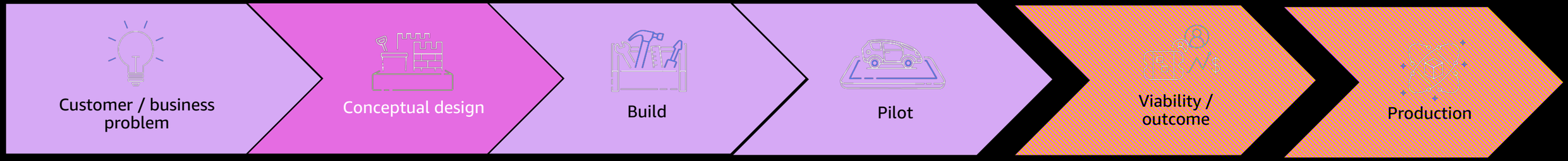
Only **30%** of enterprises that have launched IoT-enabled projects and services were able to take their programs beyond the pilot phase.

Source: What separates leaders from laggards in the Internet of Things, McKinsey&Company, 2019

POC is easy, POV is what you really want

Proof of Concept (POC)

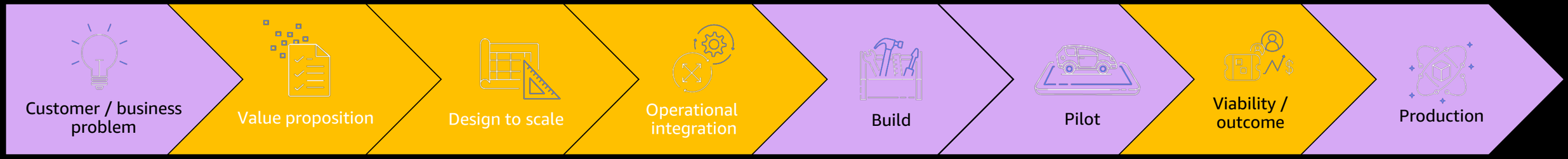
Often stuck in pilot due to conceptual approach that results in lack of scale and viability / outcome



VS.

Proof of Value (POV)

Building a repeatable path to production with value, scale, integration, and viability / outcome



How can AWS help you?

AWS IoT Services



Broad and deep functionality



Multi-layer security



Seamless edge-to-cloud integration

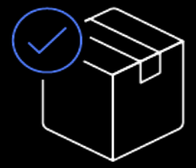


ML / AI integration

AWS Customer Enablement



AWS IoT Partner expertise



Edge-to-outcome solutions and qualified devices



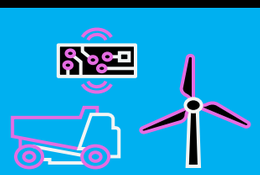
Extensive digital transformation experience



Customer acceleration and funding programs

From edge to outcome with AWS IoT Partners

The AWS IoT Partner Community helps you simplify IoT complexity by leveraging their proven technology expertise and use-case focused solutions.



Edge to device

- Silicon
- ODM / CM
- OEM



Connectivity

- Gateway
- Network / Carrier / MVNA / MVNO



Solution to outcome

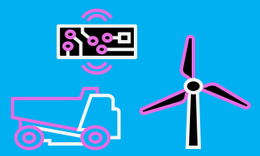
- ISV
- Regional SI
- Global SI

Accelerating proof of value for IoT



AWS IoT Solution Repository

Quickly start building with AWS and AWS Partner solutions for industrial, consumer, and commercial use cases.



Edge to device



Connectivity



Solution to outcome

Silicon	ODM / CM	OEM	Gateway	Network / Carrier / MVNA / MVNO	ISV	Regional SI	Global SI

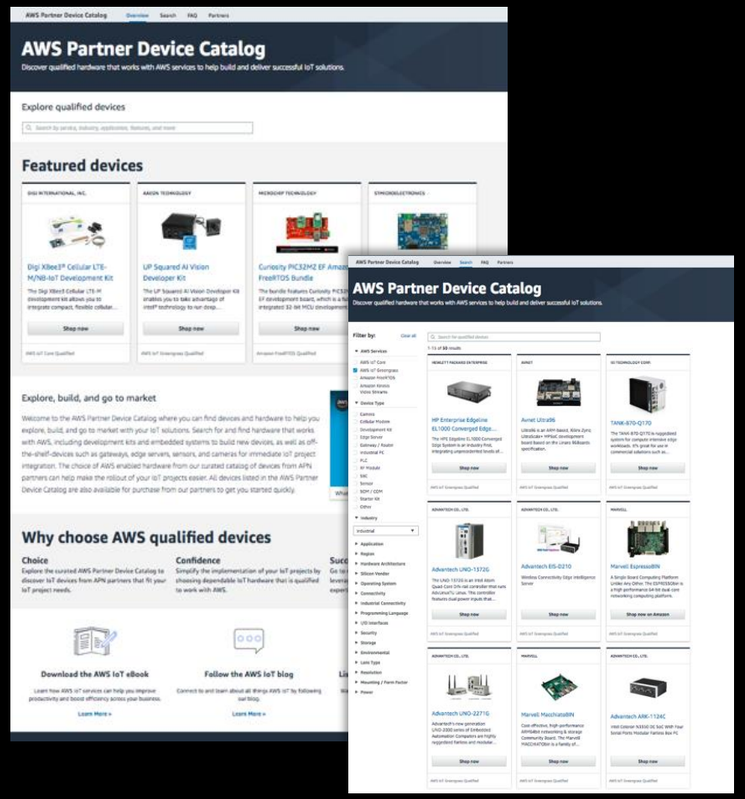


AWS Partner Device Catalog

Explore qualified AWS Partner hardware that works with AWS to help build and deliver successful IoT solutions.

Explore edge hardware that works with AWS

The AWS Partner Device Catalog is a growing directory of over 600 qualified devices that work with AWS IoT.



- Leverage AWS IoT hardware partner expertise with devices qualified by AWS Partners to work with AWS IoT services
    - AWS IoT Core, AWS IoT Core for LoRaWAN, AWS IoT Greengrass, FreeRTOS, Amazon Kinesis Video Streams
- Discover IoT development kits, asset trackers, cameras, cellular modules, edge servers, gateways, industrial PCs, PLCs, single board computers, and many more
- Learn more about the listed devices and how to get started

Visit https://devices.amazonaws.com

Discover use-case focused IoT solutions

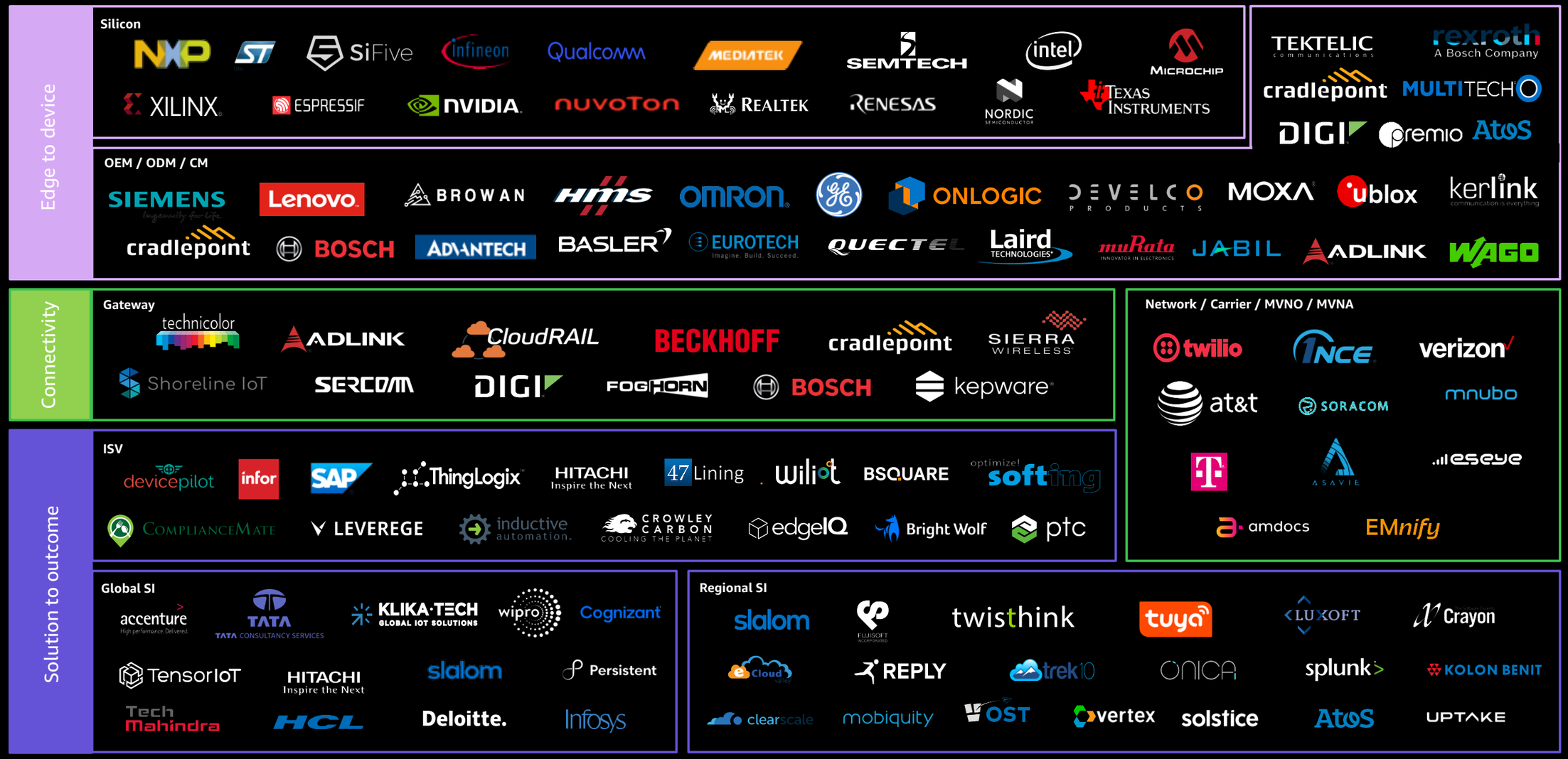


The AWS IoT Solution Repository is a growing use case directory of more than 50 AWS IoT solutions from AWS and AWS Partners.

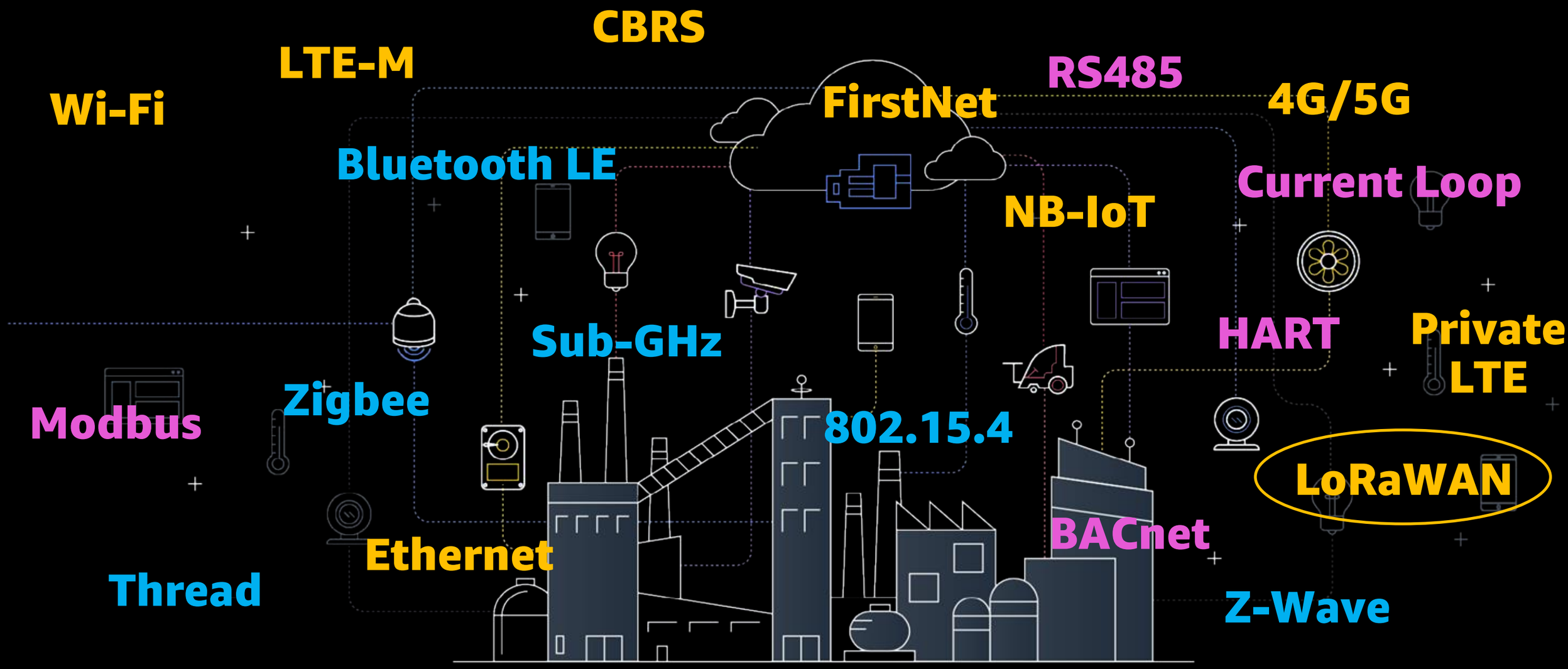
- Take advantage of the combined AWS and AWS IoT Partner expertise through solution accelerators and complete end-to-end solutions
- Review solution briefs, architecture diagrams, customer case studies, and contact AWS Partners to learn more

Visit https://aws.amazon.com/iot/solutions

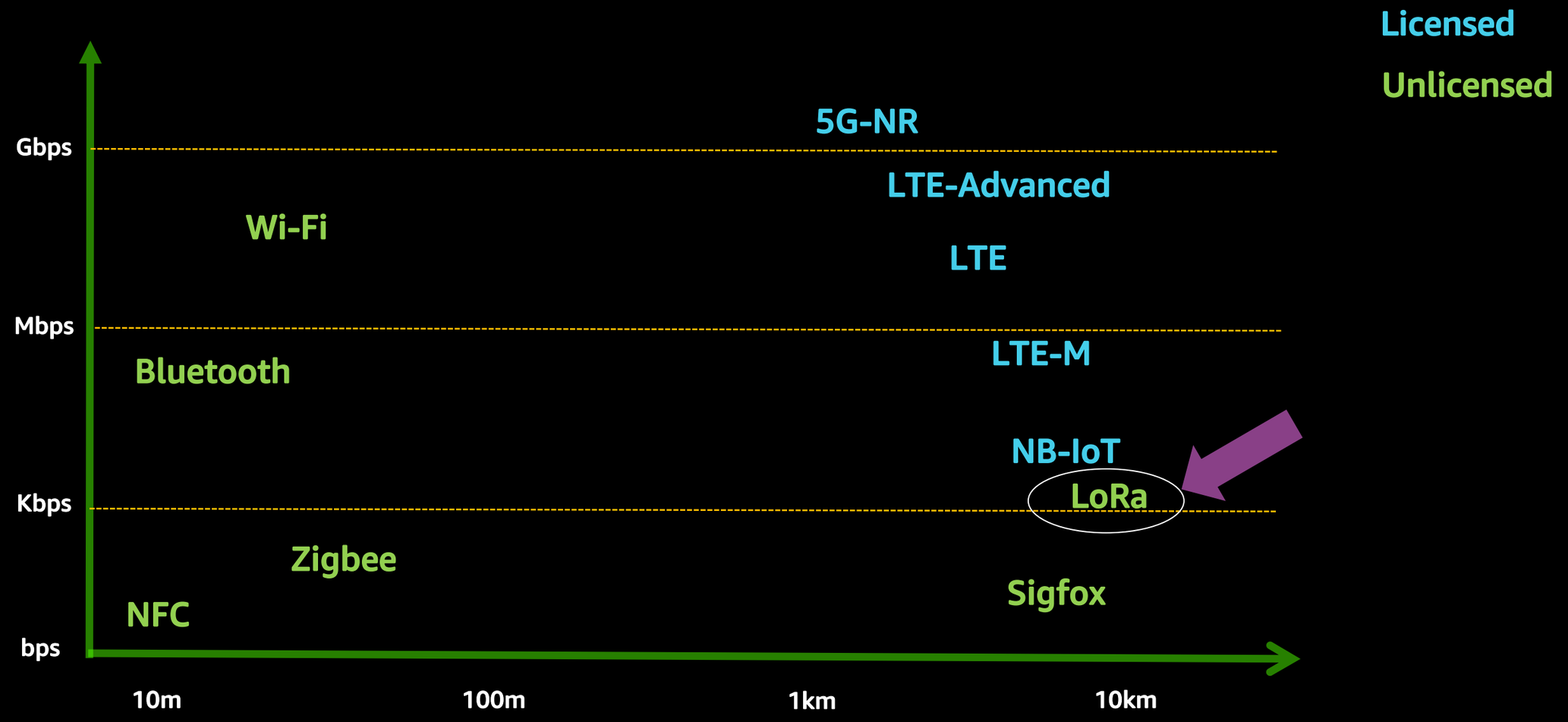
The AWS IoT Community builds with and for you



Helping simplify IoT device connectivity

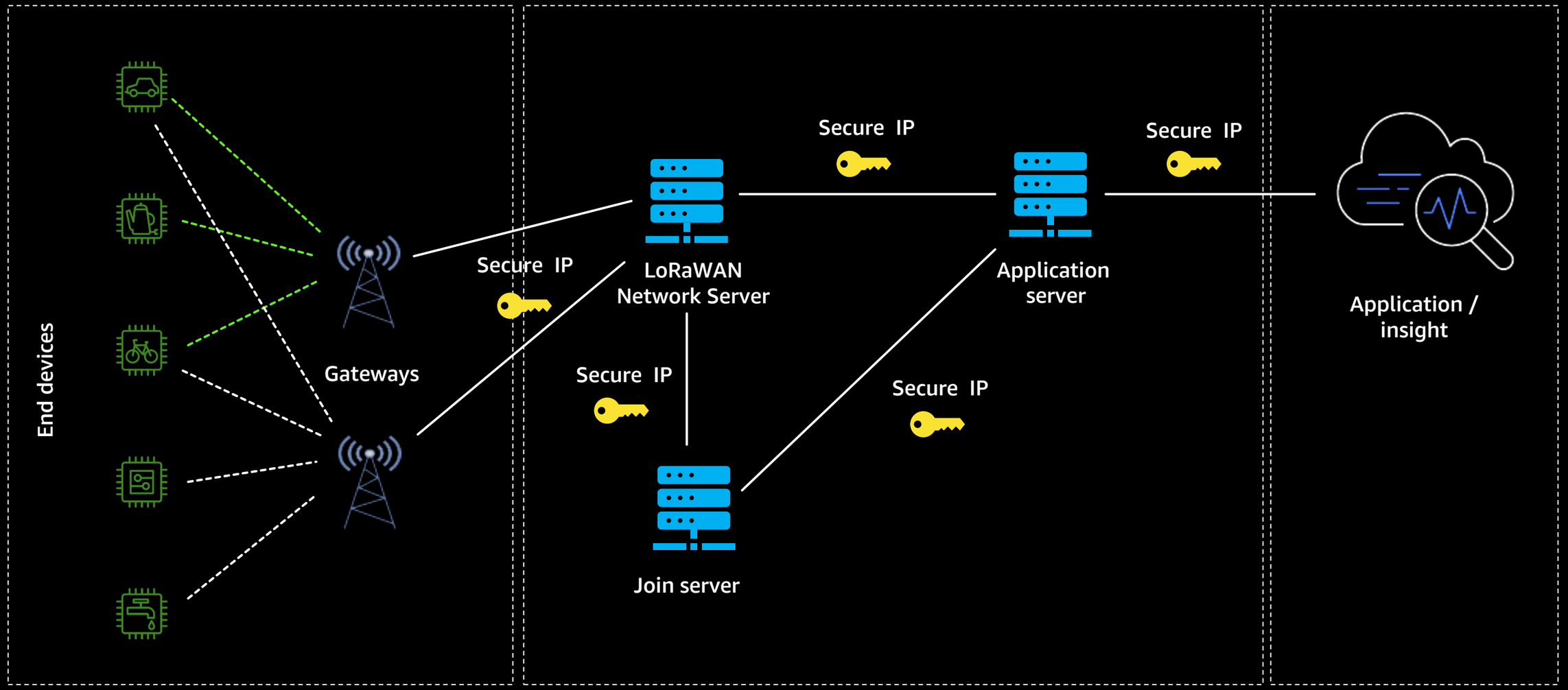


LoRa's value in IoT connectivity

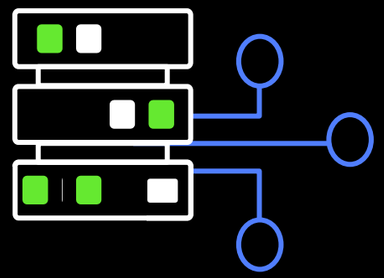


Very low power, low data rate, long-range sensor connectivity

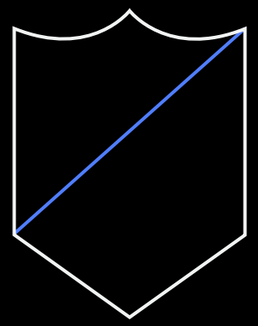
LoRaWAN network elements



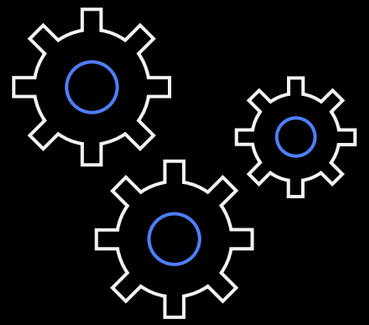
Introducing AWS IoT Core for LoRaWAN



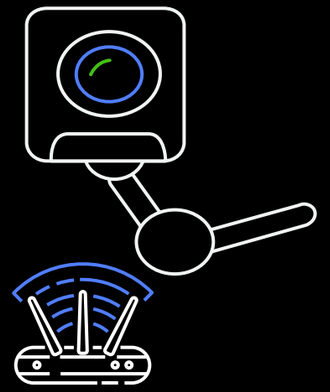
Managed LoRaWAN Network Server (LNS)



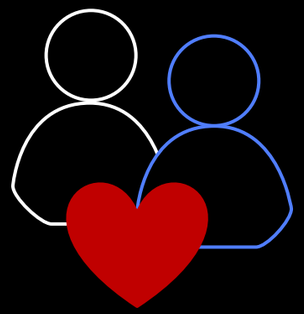
End-to-end security



Integration with AWS services



LoRaWAN device and gateway management

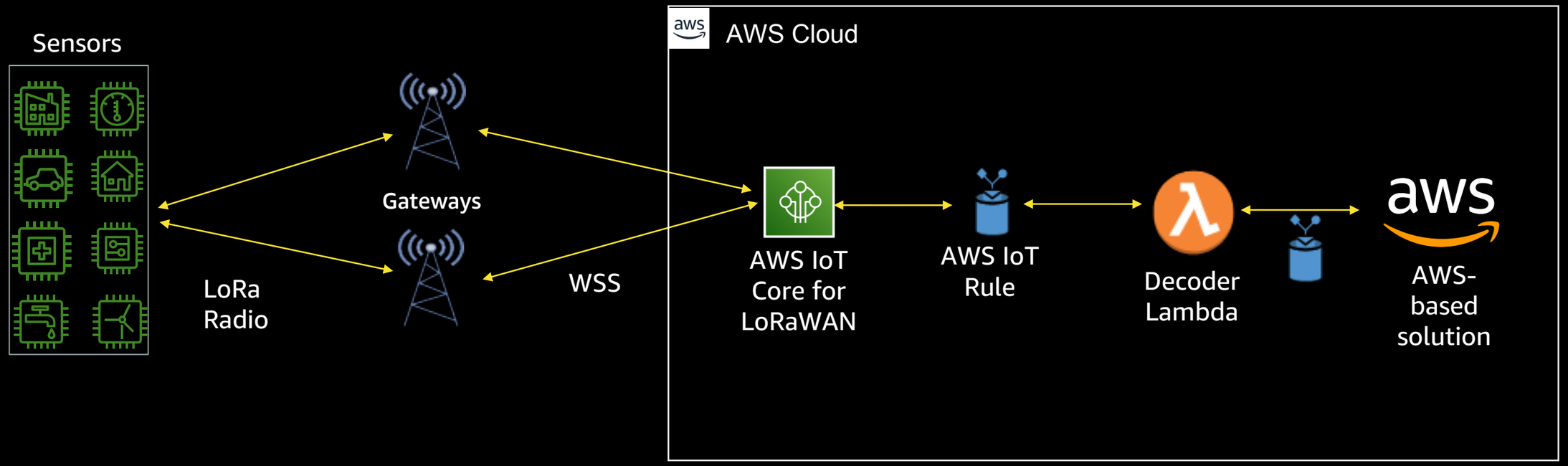


AWS IoT Partner Community

Discover partner devices qualified for AWS IoT Core for LoRaWAN in the catalog

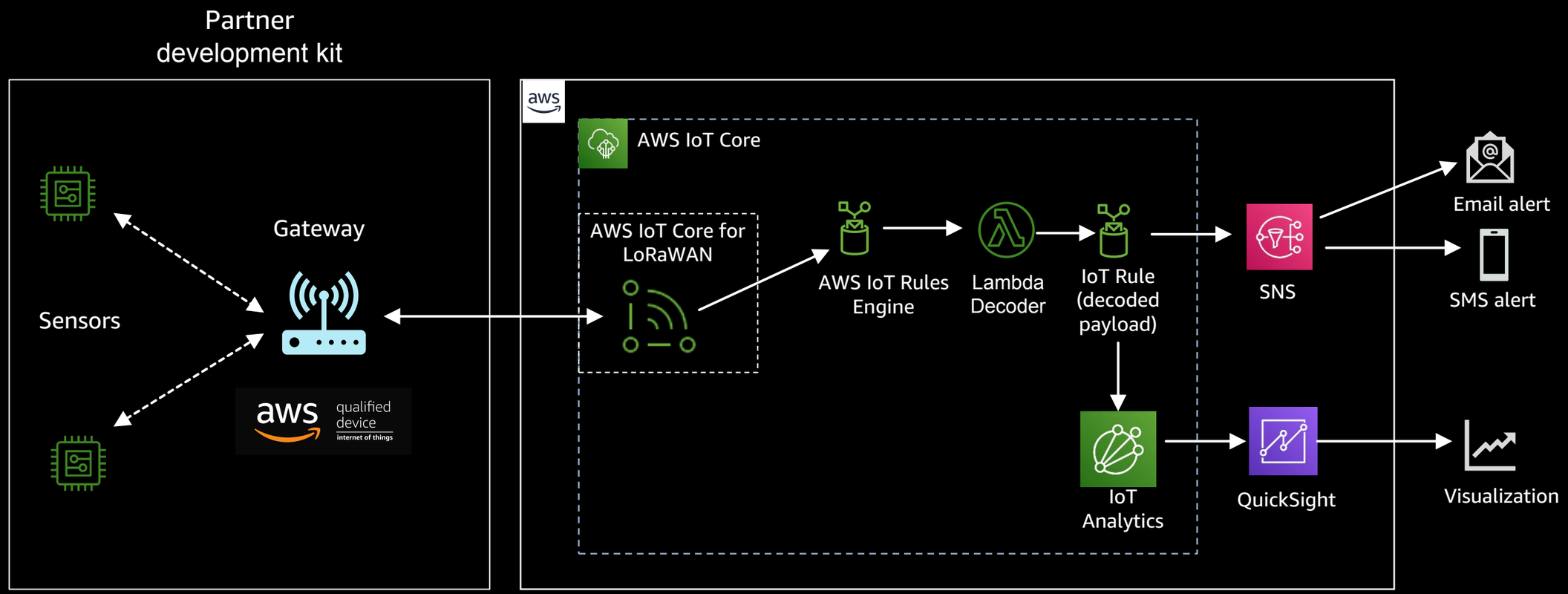
Visit https://devices.amazonaws.com/search?&sv=iotclorawan

How AWS IoT Core for LoRaWAN works

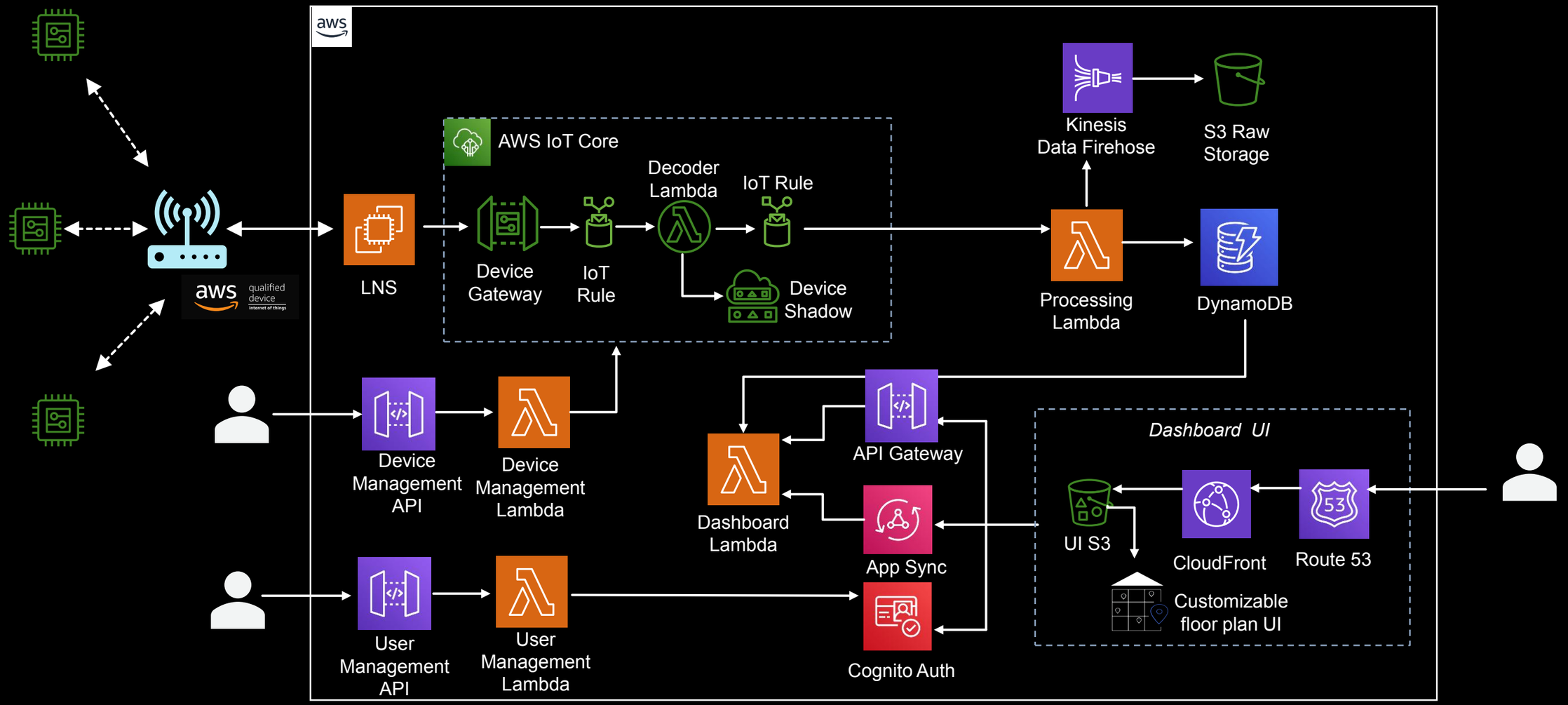


AWS IoT for LoRaWAN is a managed cloud service for connecting and managing LoRaWAN sensors for private deployment with AWS services, easily and securely at scale.

“Hello World” with gateway and sensor dev kits



Smart Building Kit solution architecture



Customer success with Smart Building Kit for LoRaWAN

Byron BeMiller

Semtech, Director Smart Building and Smart Home Verticals



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What are LoRa and LoRaWAN?



Patented radio modulation technique (PHY) brought to market by Semtech that enables battery-based sensors to be placed almost anywhere and enjoy years of battery life



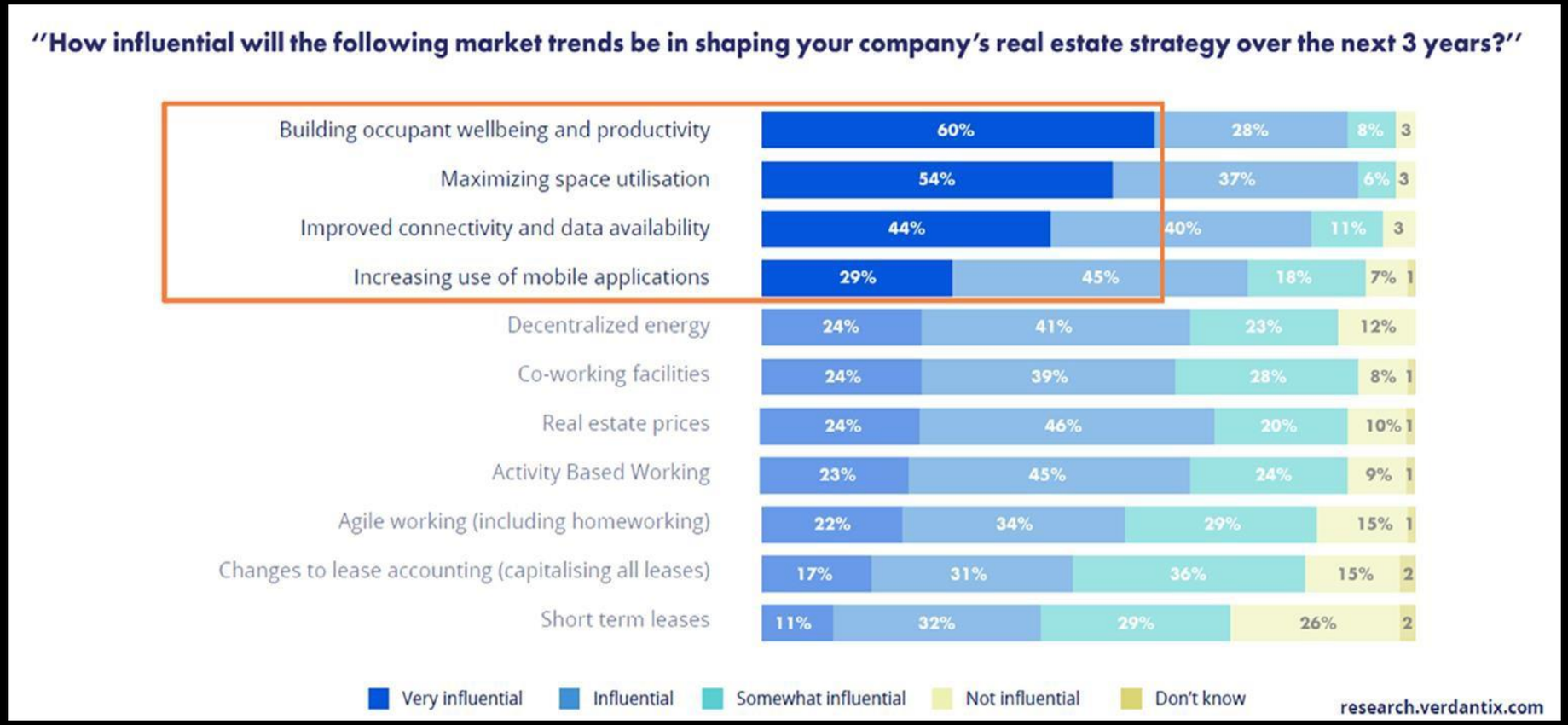
De facto standard for LPWAN networks offering unrivaled range, battery life and interference immunity built on LoRa wireless technology



Independent, non-profit organization that defines, maintains, and certifies LoRaWAN

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Benefits of smart workspaces



Building occupant well-being and productivity

Maximizing space utilization

Improved connectivity and data availability

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Smart building solution with LoRaWAN

Solving for smart building use cases



- Monitor desk and conference room usage to right-size real estate footprint
- Real time availability / booking information and enforcement of proper distancing
- Implement predictive cleaning based on usage rather than a set time of day
- Provide discrete temp / humidity data points to ensure a healthy environment
- Monitor for leaks in high risk area to minimize costly damage to infrastructure

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AWS IoT Community solution helps simplify

Delivering qualified components and proven interoperability

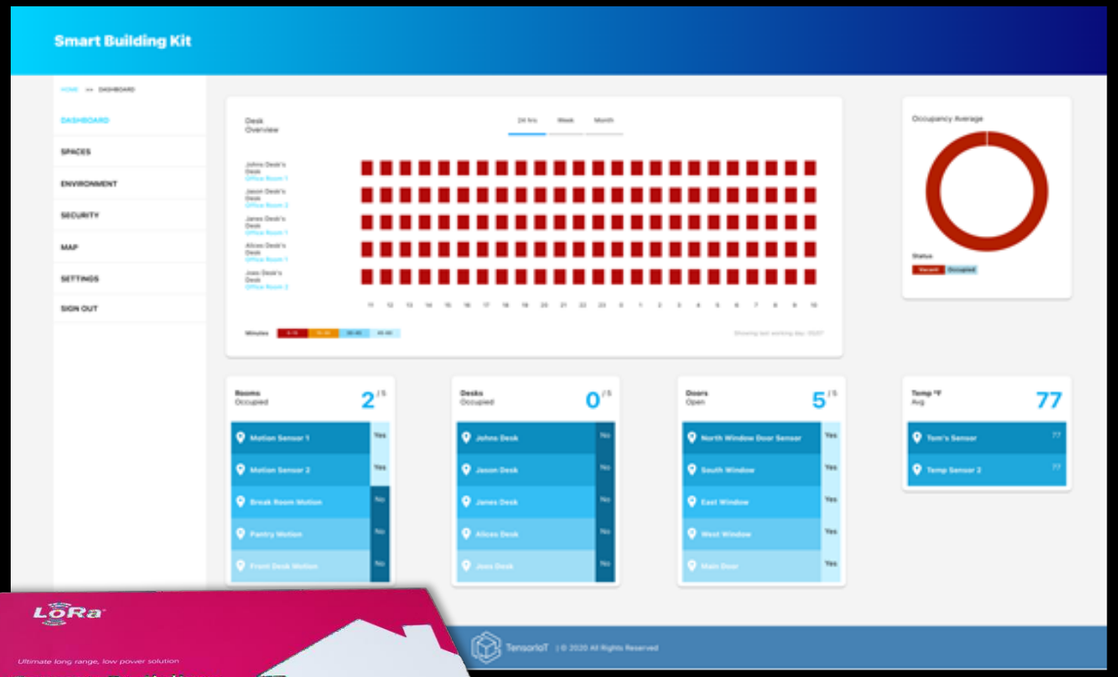


- **Semtech** silicon provides long range, low power LoRa wireless connectivity
- OEMs **Browan** and **RadioBridge** provide sensors and qualified gateway hardware that use LoRaWAN / LoRa
- System Integrator **TensorIoT** integrates the AWS IoT solution components, builds the dashboard, and offers project-specific customization

SEMTECH BROWAN RADIO BRIDGE TensorIoT

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Ready for evaluation and production





aws qualified device internet of things

Edge hardware

- Portable Wi-Fi hotspot
- Browan MiniHub Pro gateways
- Browan desk sensors
- Browan Grid-EYE sensors
- Browan temperature / humidity sensor
- Browan door / window sensors
- Browan room occupancy sensors
- RadioBridge leak sensor

Access to dashboard, full source code, and documentation

Visit devices.amazonaws.com/search?kw=TensorIoT

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Customer success example

Problem

Saravanaa Bhavan is the world's largest South Indian vegetarian restaurant chain. The US branch of restaurants was looking to provide a safe dining experience for their customers and the well-being of their own employees during the COVID pandemic. They were seeking to implement a scalable solution that can deliver reliable restaurant occupancy monitoring to manage space utilization appropriately and deliver real-time data insight.

Solution

Saravanaa Bhavan implemented an IoT Smart Building Kit solution built on AWS IoT Core to securely collect dining room occupancy data from wireless LoRaWAN / LoRA sensors and qualified gateways, process sensor data, store it for future recordkeeping, trigger actions, govern activities, and visualize data in dashboards for restaurant management.

Impact

Leveraging the AWS IoT Partner Smart Building Kit solution eliminated the need to navigate IoT technology complexities, and simplified the vendor selection process, on-premises deployment of wireless devices, and the need for software development. This allowed them to **reduce the time to deploy a restaurant occupancy monitoring system by over 80%, from 4 months down to 2 weeks**. They are also exploring the integration of a computer vision solution for advanced tracking and compliance (OSHA/CDC) utilizing AWS IoT Core, AWS IoT Greengrass, and Amazon SageMaker, building on and extending the existing software platform.



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