



Easier than Ever: An Introduction for Building End to End IoT Solutions



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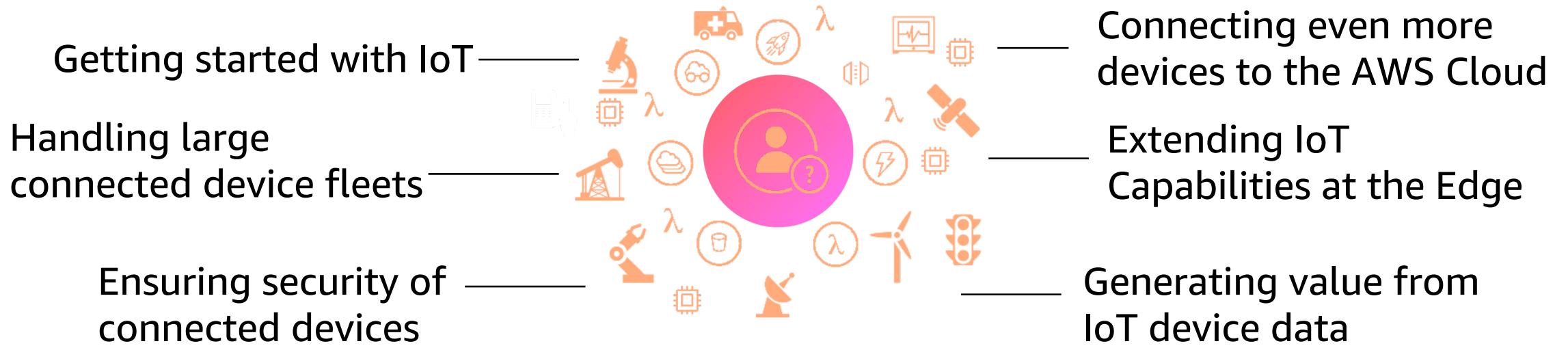
What will you learn in this session?

- Overview how to use AWS for IoT
- How services fit together without any glue
- How to get started

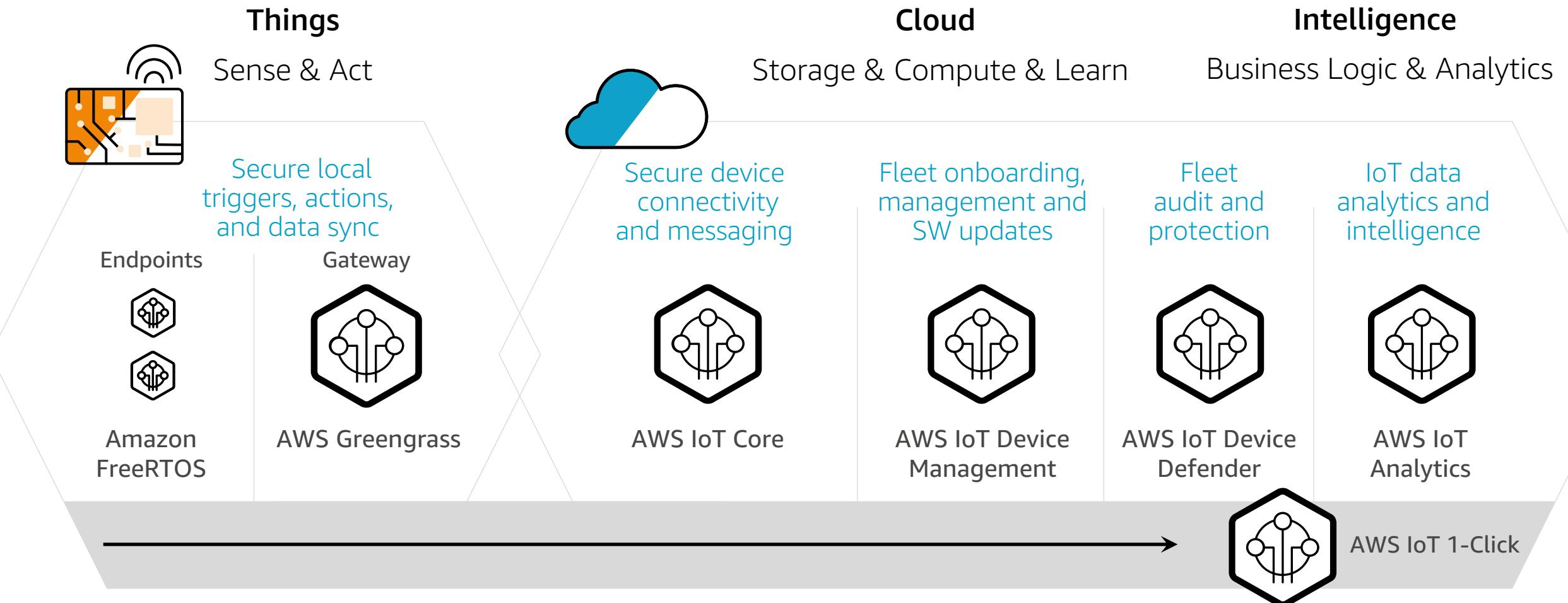
If you knew the **state of every thing** and
could **reason on top of that data...**

what problems would you solve?

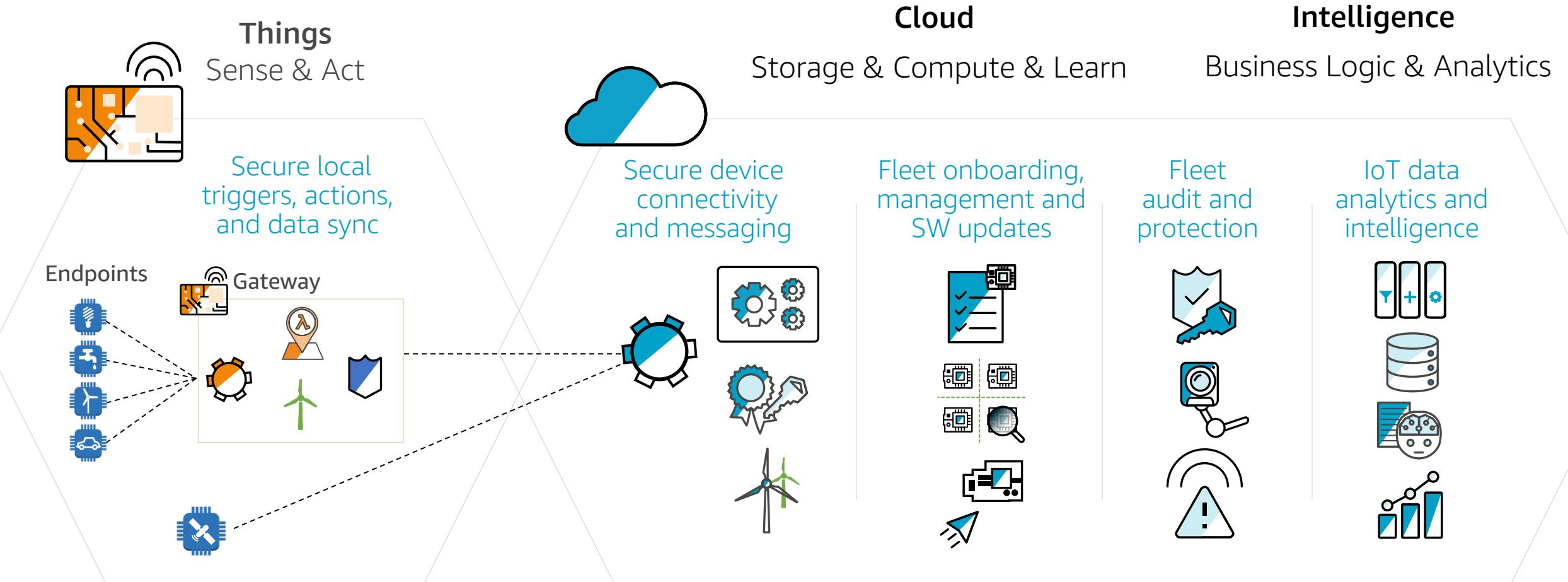
Six Business Challenges of Current IoT Projects



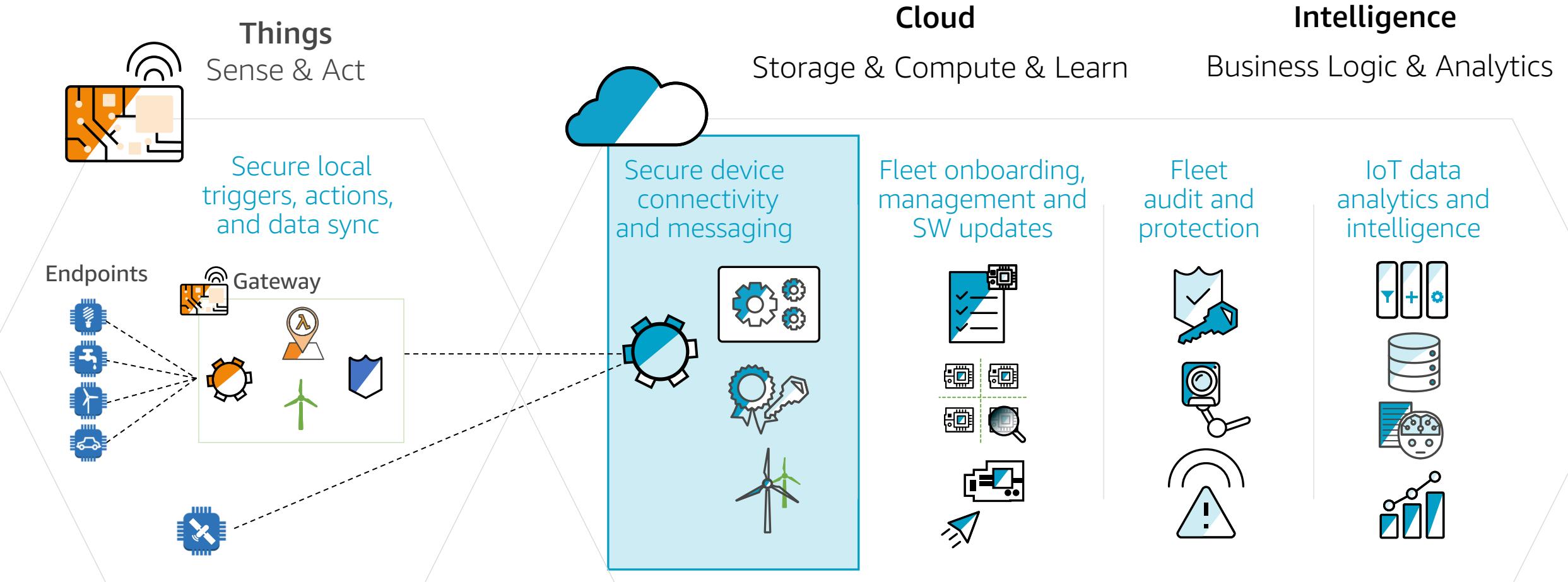
Solving IoT Business Challenges with the Extended AWS IoT Services Suite



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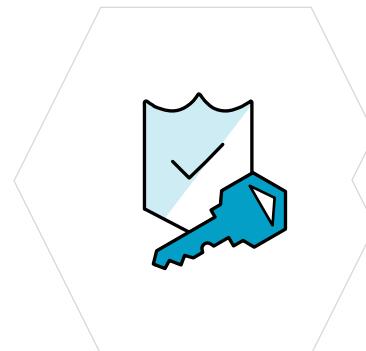




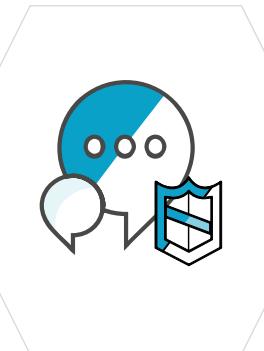
AWS IoT Core

Connect Devices at Scale

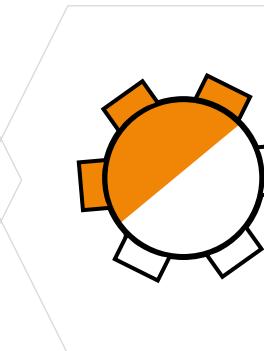
AWS IoT Core is a managed cloud that lets connected devices easily and securely interact with cloud applications and other devices.



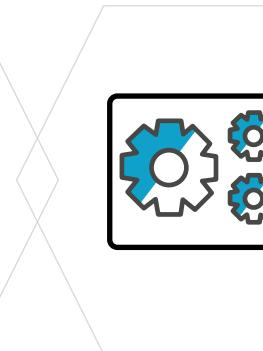
Custom Authentication
& Credentials Provider



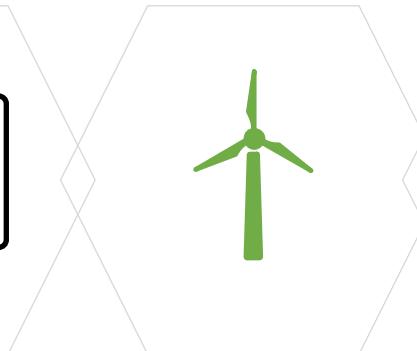
Device Gateway



Message Broker



Rules Engine

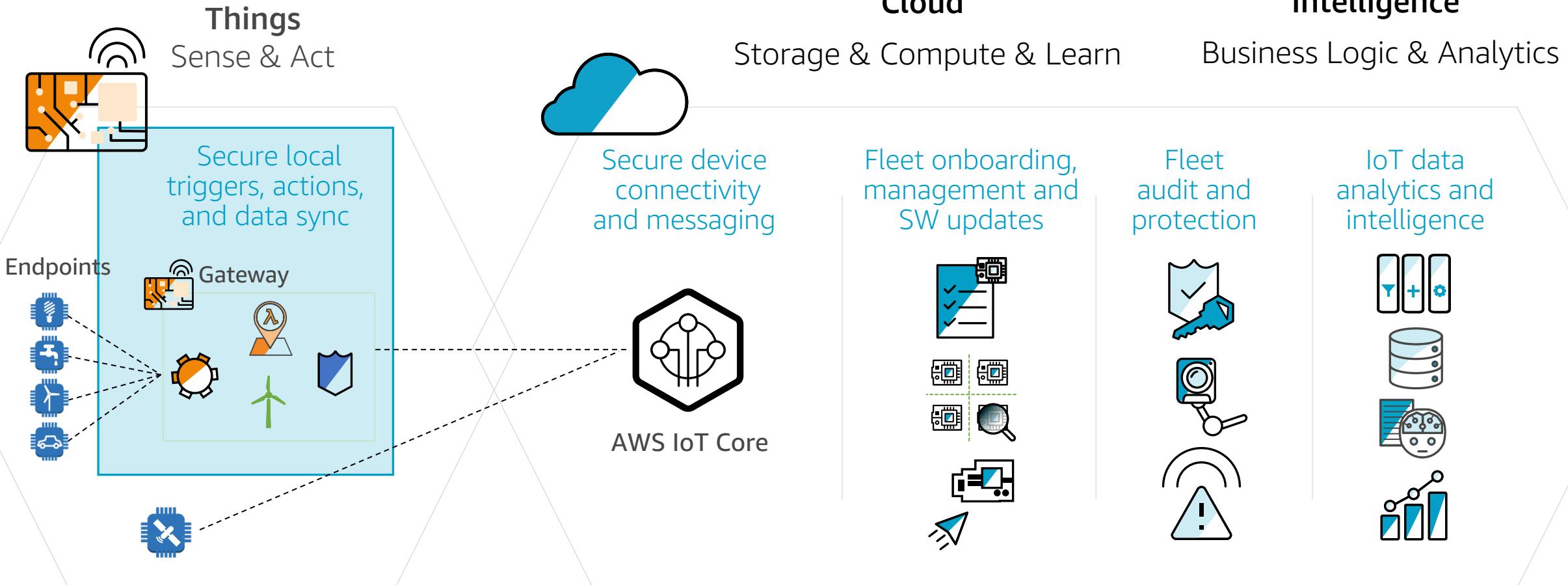


Device Shadow



Device Registry

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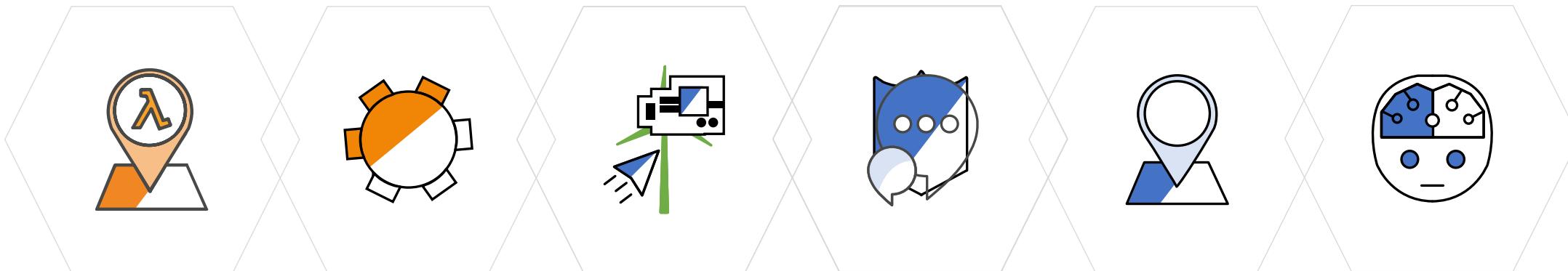




AWS Greengrass

Extend AWS IoT to the edge

AWS Greengrass extends AWS IoT onto your devices, so that they can act locally on the data they generate, while still taking advantage of the cloud



Local actions

Local triggers

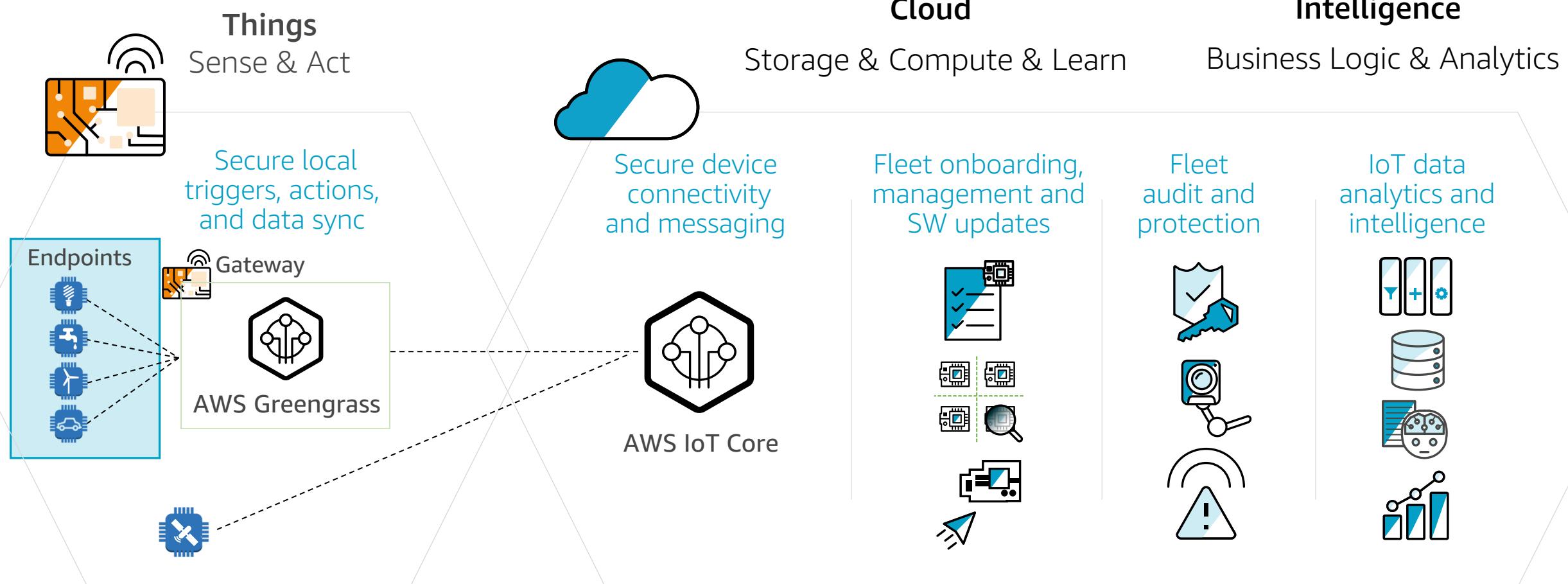
Data and state sync.
Over the air updates

Security.
Protocol adapter
for OPC-UA

Local resource access

Local ML
inferencing
New!

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Amazon FreeRTOS

IoT Microcontroller OS

Amazon FreeRTOS, based on the popular FreeRTOS, is a microcontroller operating system that makes small, low powered edge devices easy to program, deploy, secure, and maintain.



Local connectivity
libraries

 AWS Greengrass

Cloud connectivity
libraries

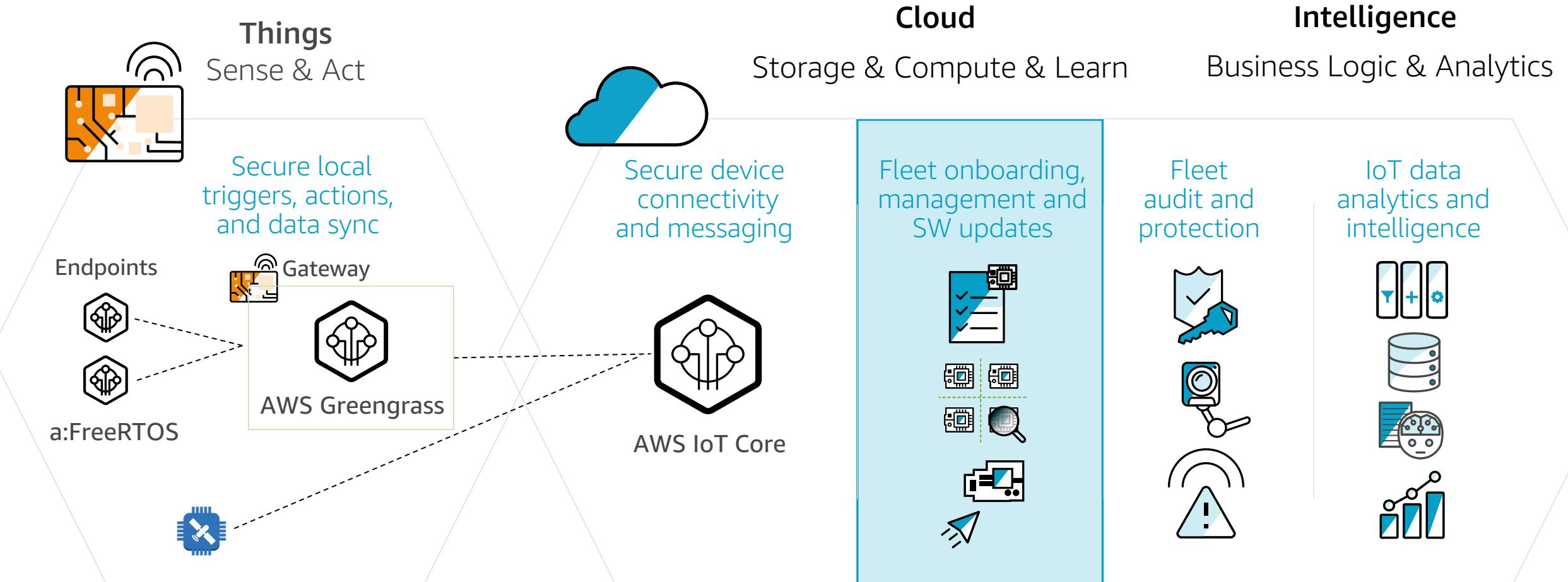
 AWS IoT Core

Security
libraries

OTA &
code signing

In Beta

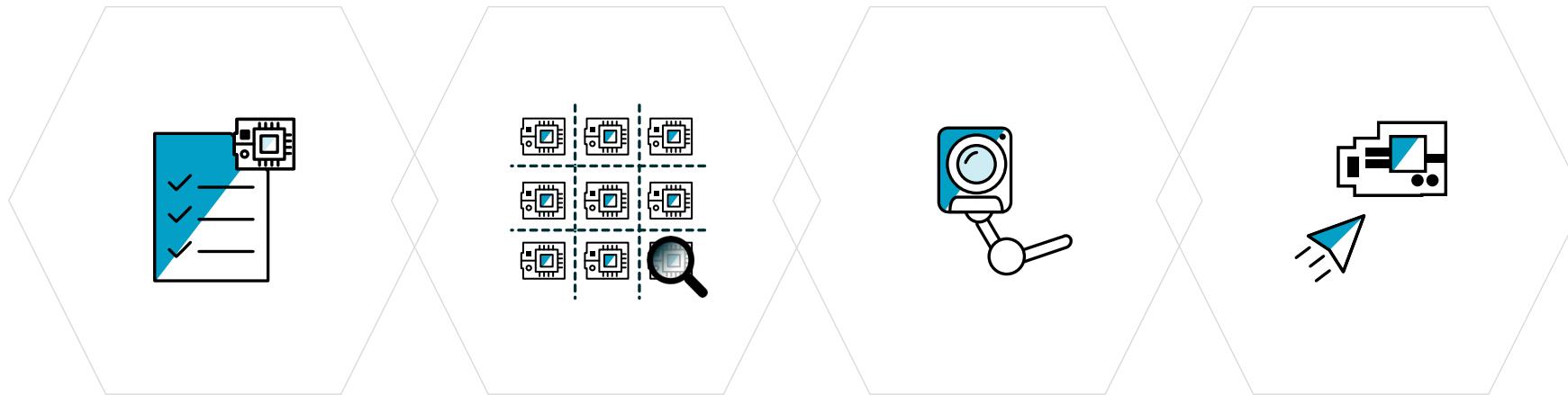
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AWS IoT Device Management

Maintain Fleet Health



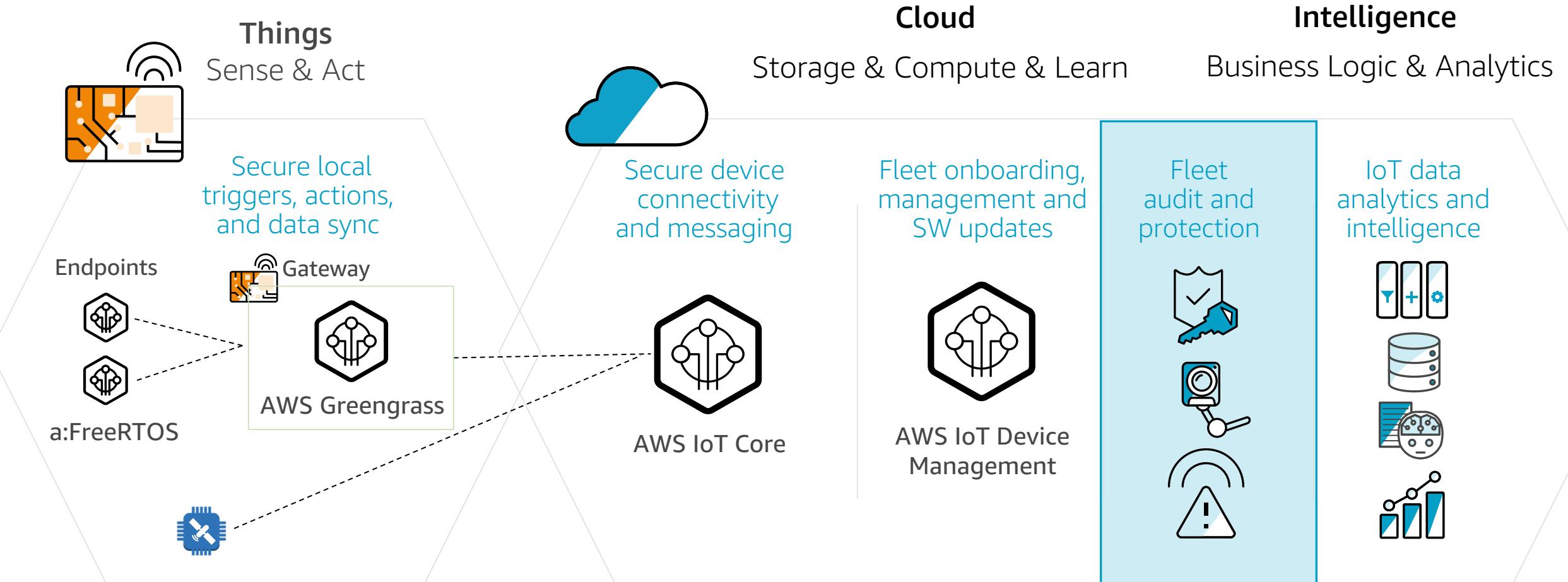
Provision
entire fleet with
one click

Organize device
inventory
in real-time

Monitor fleet
of devices

Remotely
update features
and fix bugs

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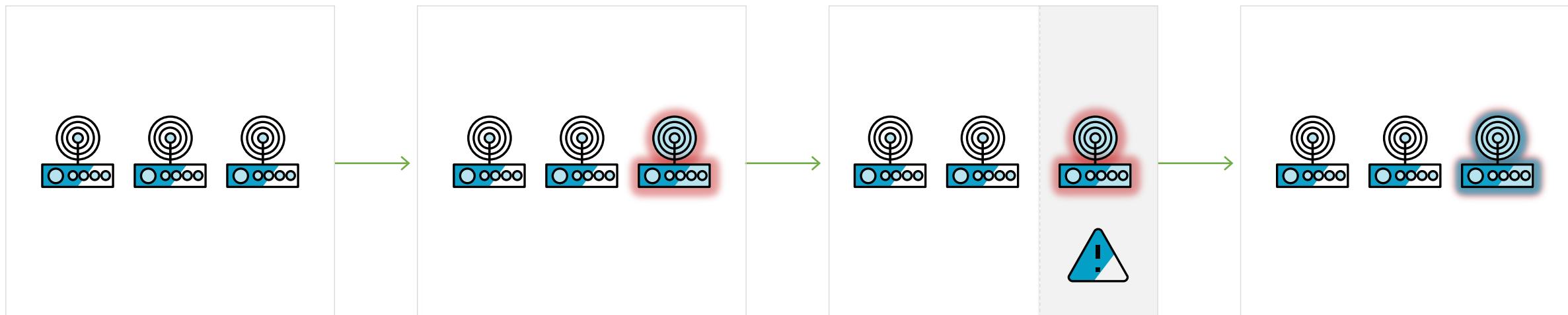
COMING
IN 2018



AWS IoT Device Defender

Keep your fleet secure

AWS IoT Device Defender is a fully managed IoT security service that enables you to secure your fleet of connected devices on an ongoing basis.



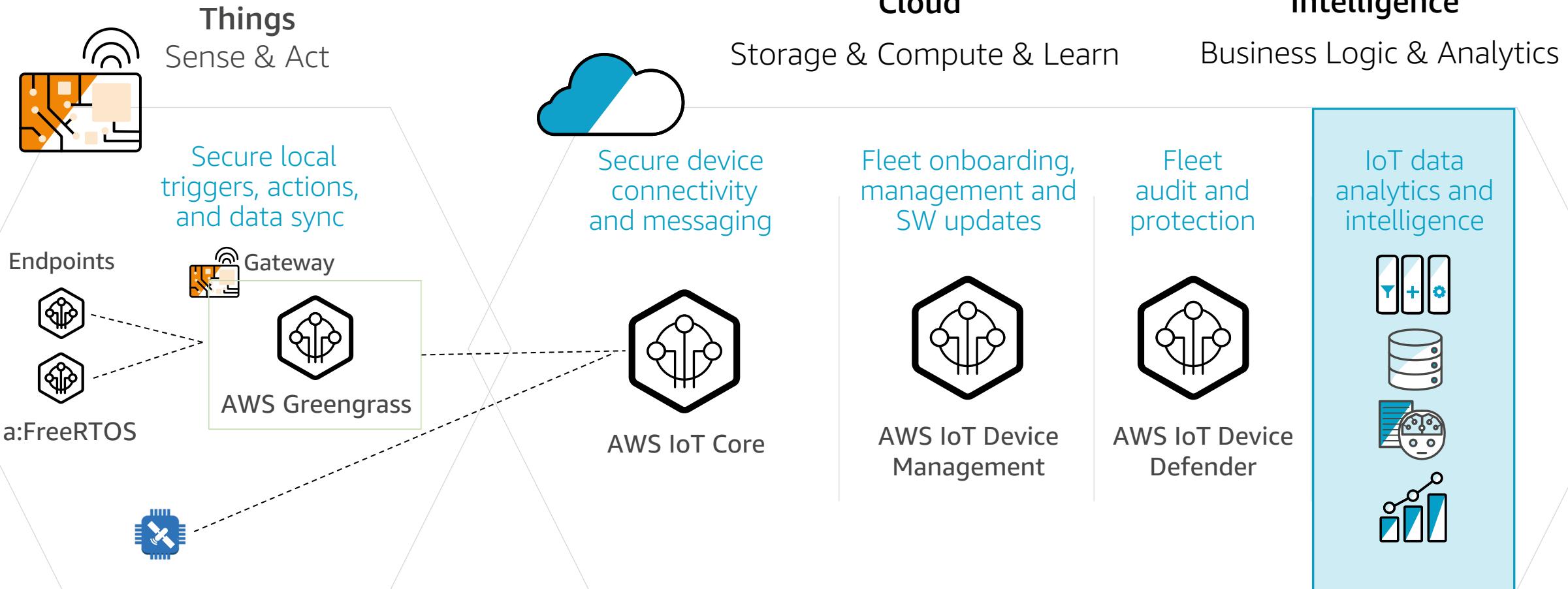
Audit devices, set security parameters, and monitor behavior

Detect drifts in policy and identify anomalies

Generate alerts

Take action (OTA updates with AWS IoT Device Management)

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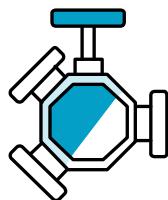




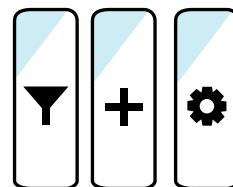
AWS IoT Analytics

Easily analyze IoT data

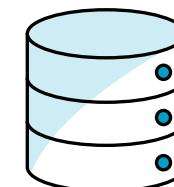
AWS IoT Analytics is a service that processes, enriches, stores, analyzes and visualizes IoT data for manufacturers and enterprises.



IoT data
collection from
multiple sources



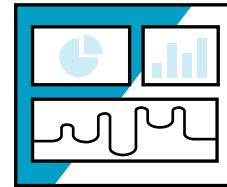
Data
(pre)processing
and enrichment



Fully managed
Storage
(raw & time-series)

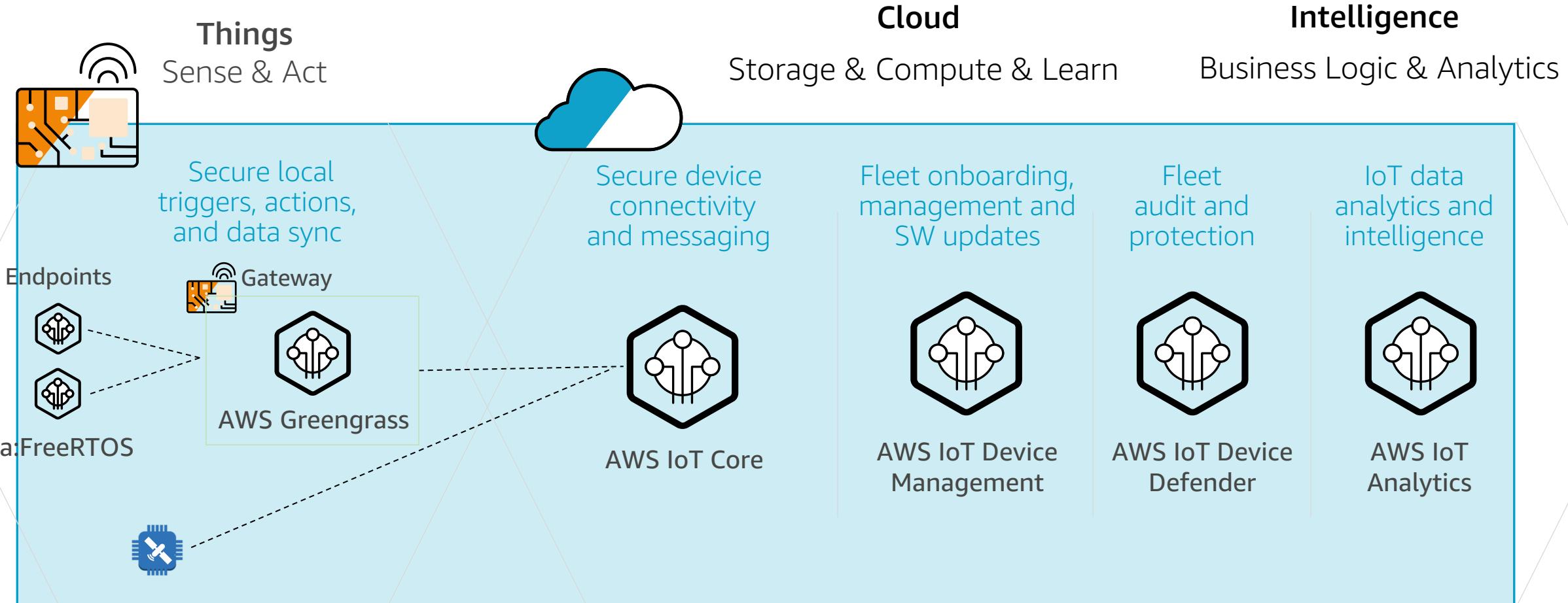


Ad-hoc queries
& QuickSight
integration



In-depth analysis with
Amazon SageMaker
Jupyter Notebooks

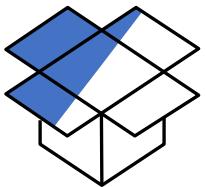
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AWS IoT 1-Click

Easily Trigger Actions in the Cloud



Build easy-to-use IoT applications without device specific code



Pre-configured to connect securely to AWS IoT Core, no need to create, install, or manage credentials



Easily create Lambda triggers for any device



AT&T
...more

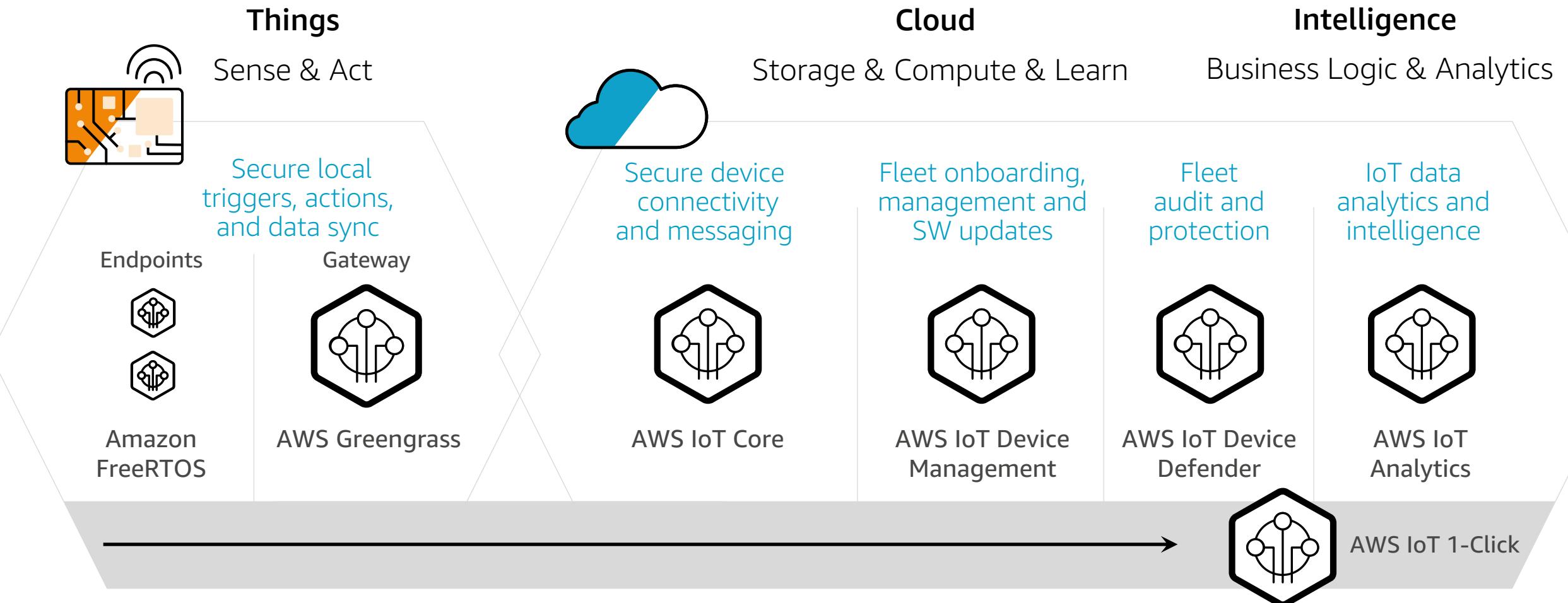


Fleet identification and reporting for better tracking of usage and device status

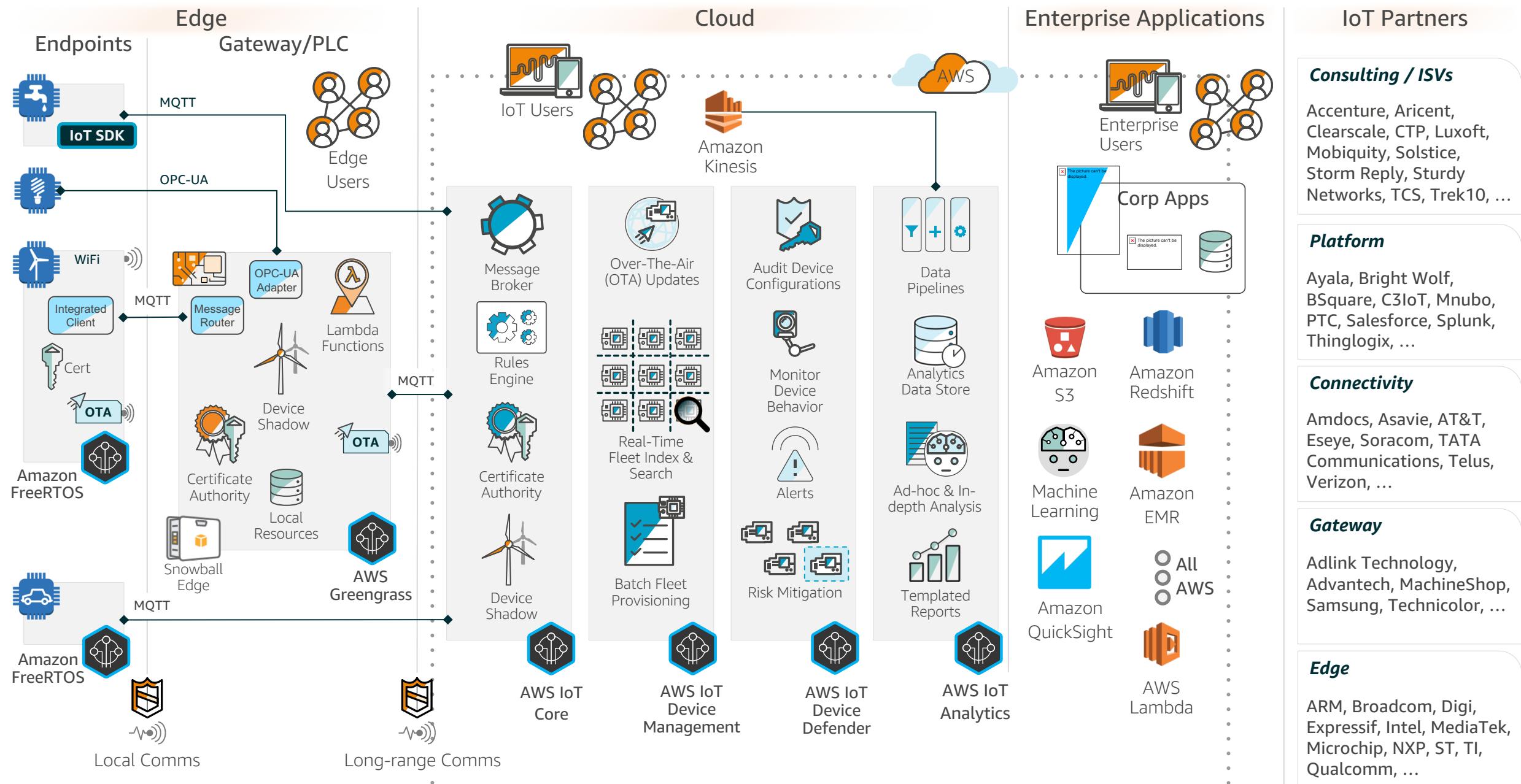


Build mobile applications triggered with one click

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Helping customers to build their end to end vision of IoT



Pure Freude
an Wasser



BEFORE A DRIP BECOMES A FLOOD

GROHE Sense & GROHE Sense Guard

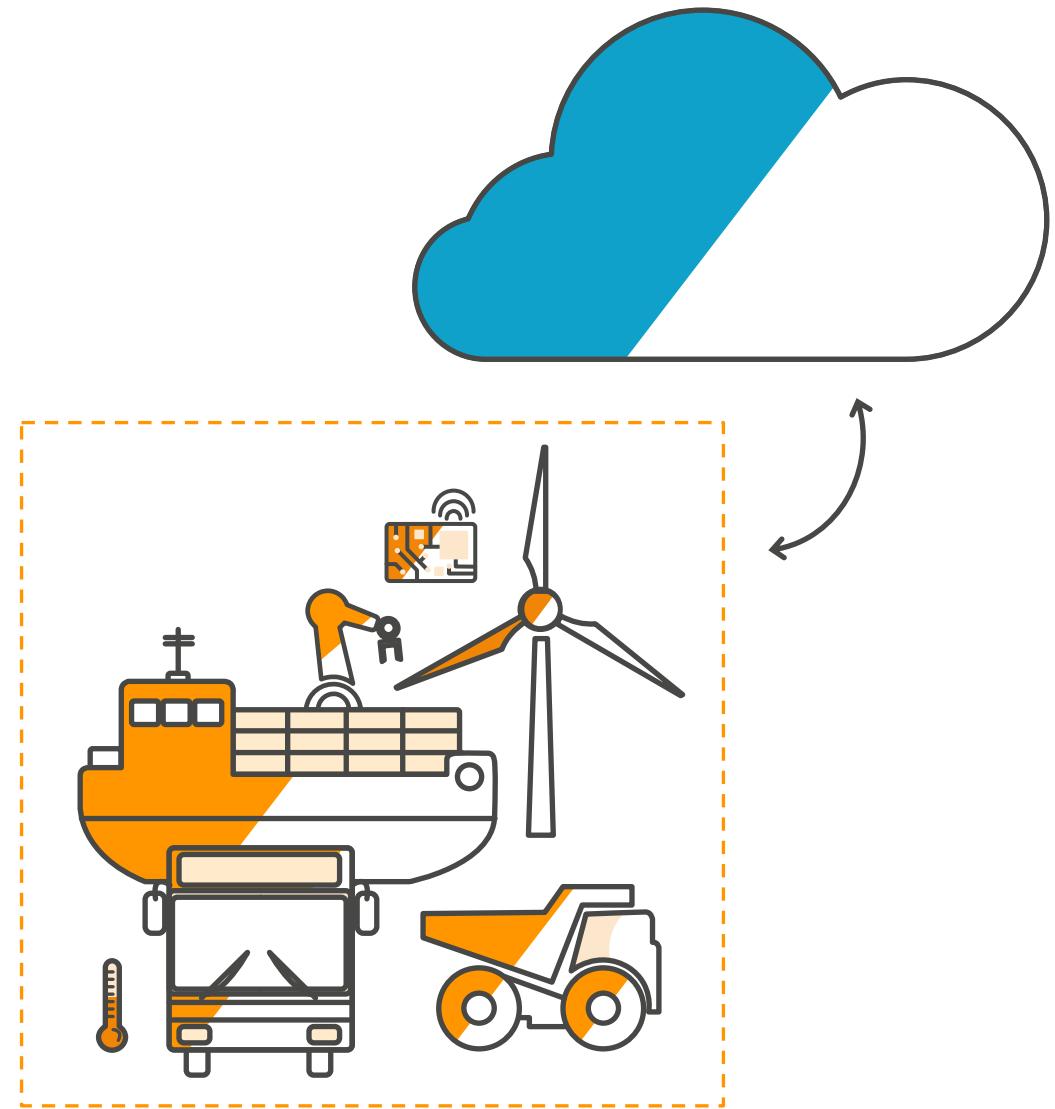


 **Reply** IoT Platform for **GROHE**
storm



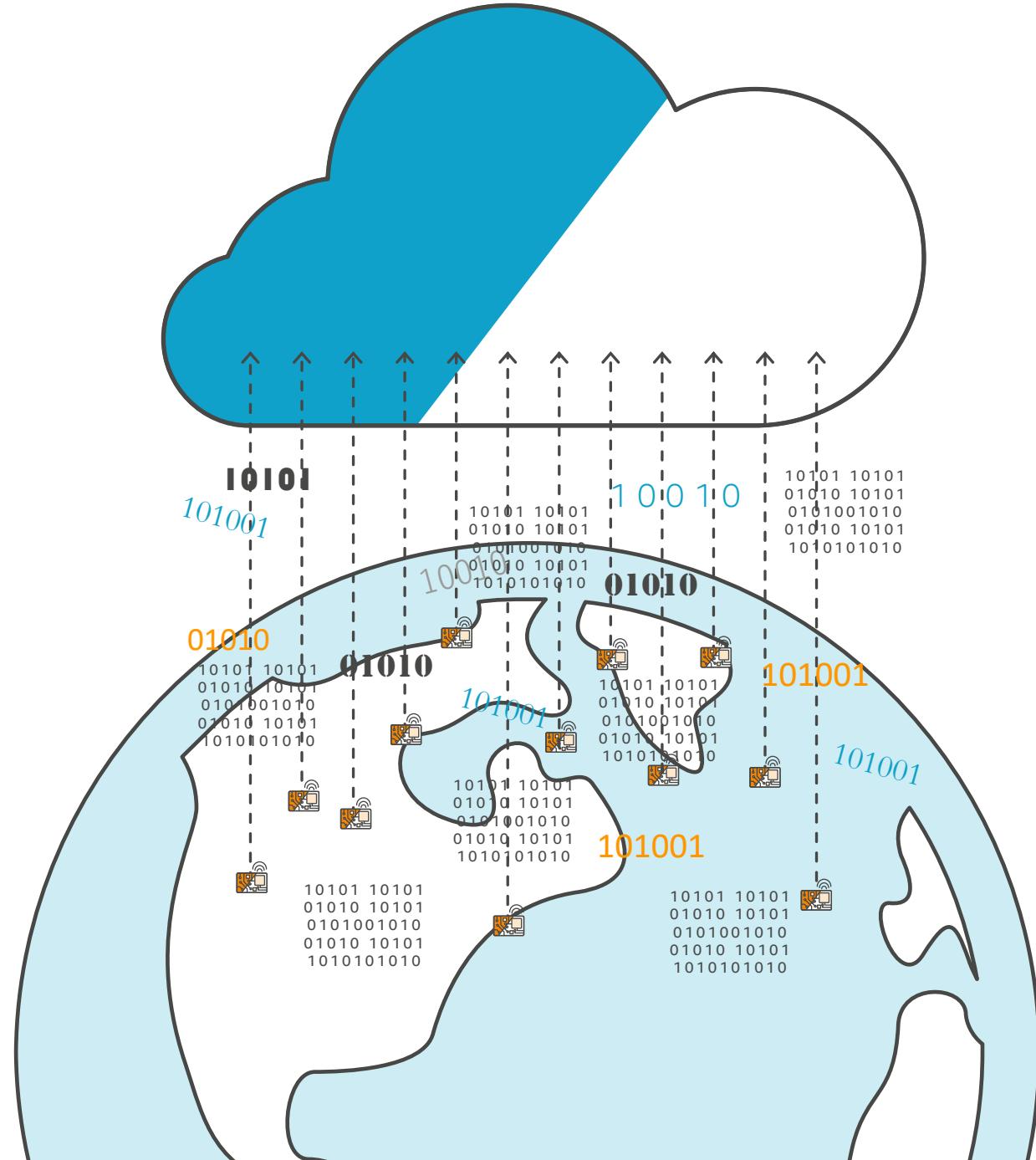
AWS Greengrass

**Look into the Deep Dive
session at 15:00:
IoT Analytics and ML
from Cloud to Edge and
back**

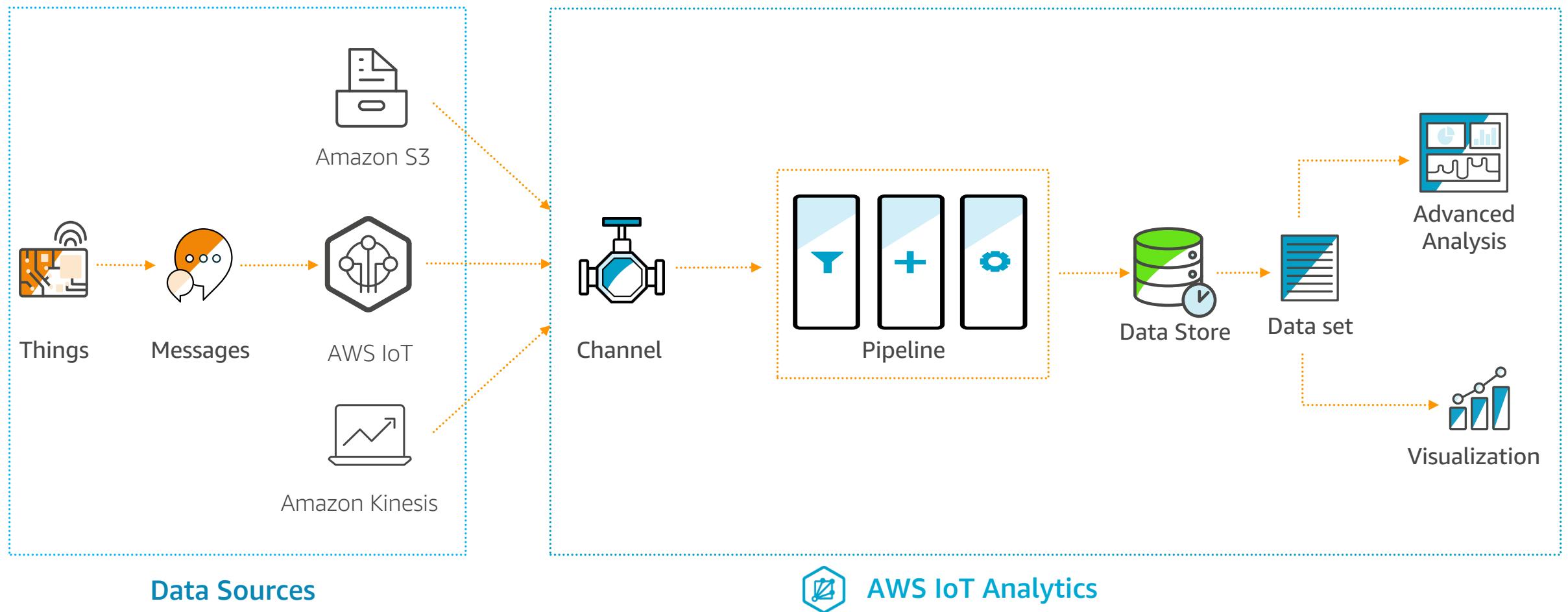




AWS IoT Analytics



AWS IoT Analytics Overview



Consumer IoT Use Cases and Solutions

Collects and analyzes data of Heterogeneous devices, each with different message history and data type



Segments your customers and fleet of devices upon usage patterns and identifies adoption triggers

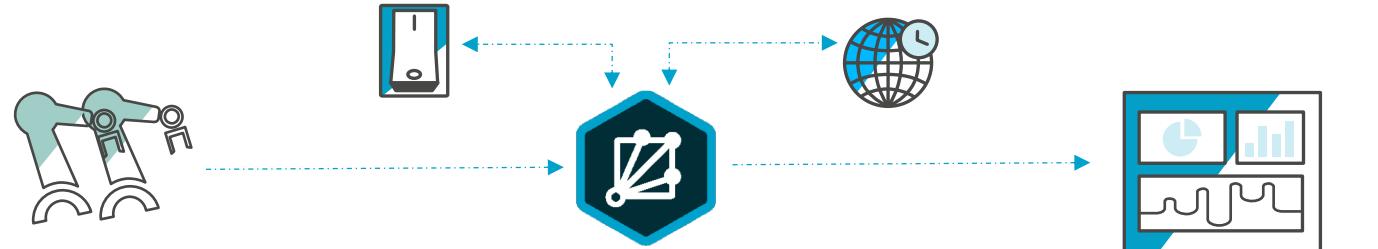


Reduces the number of OTA upgrade failures and improves the customer experience

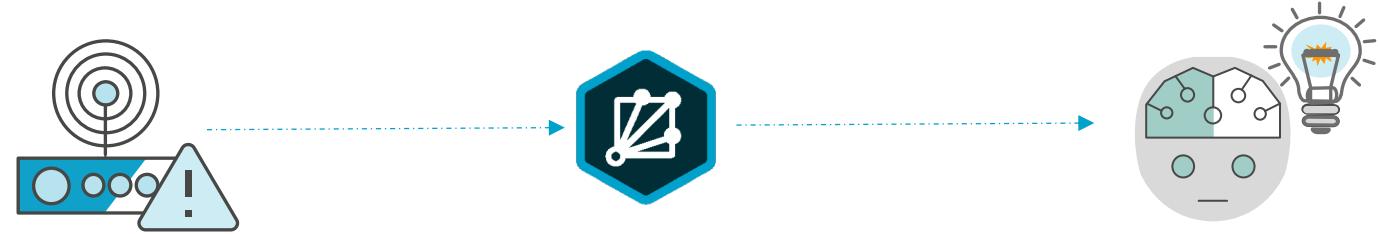


Industrial IoT Use Cases and Solutions

Adds real time contextualization to the sensor payload from external sources



Provides tools to identify correlation factors and to predict device failure



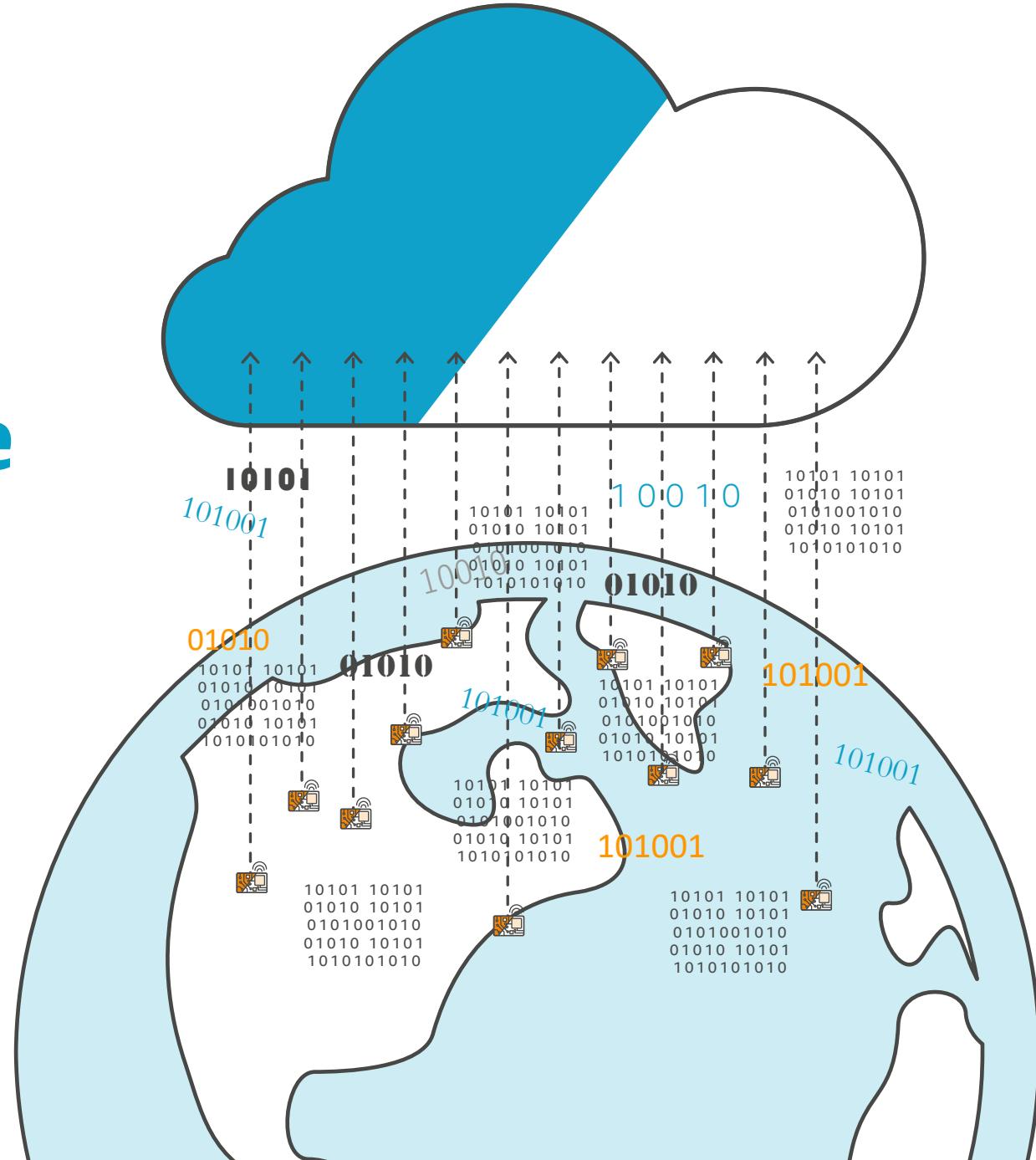
Visualizes the anomaly with your devices for you to proactively remediate issues



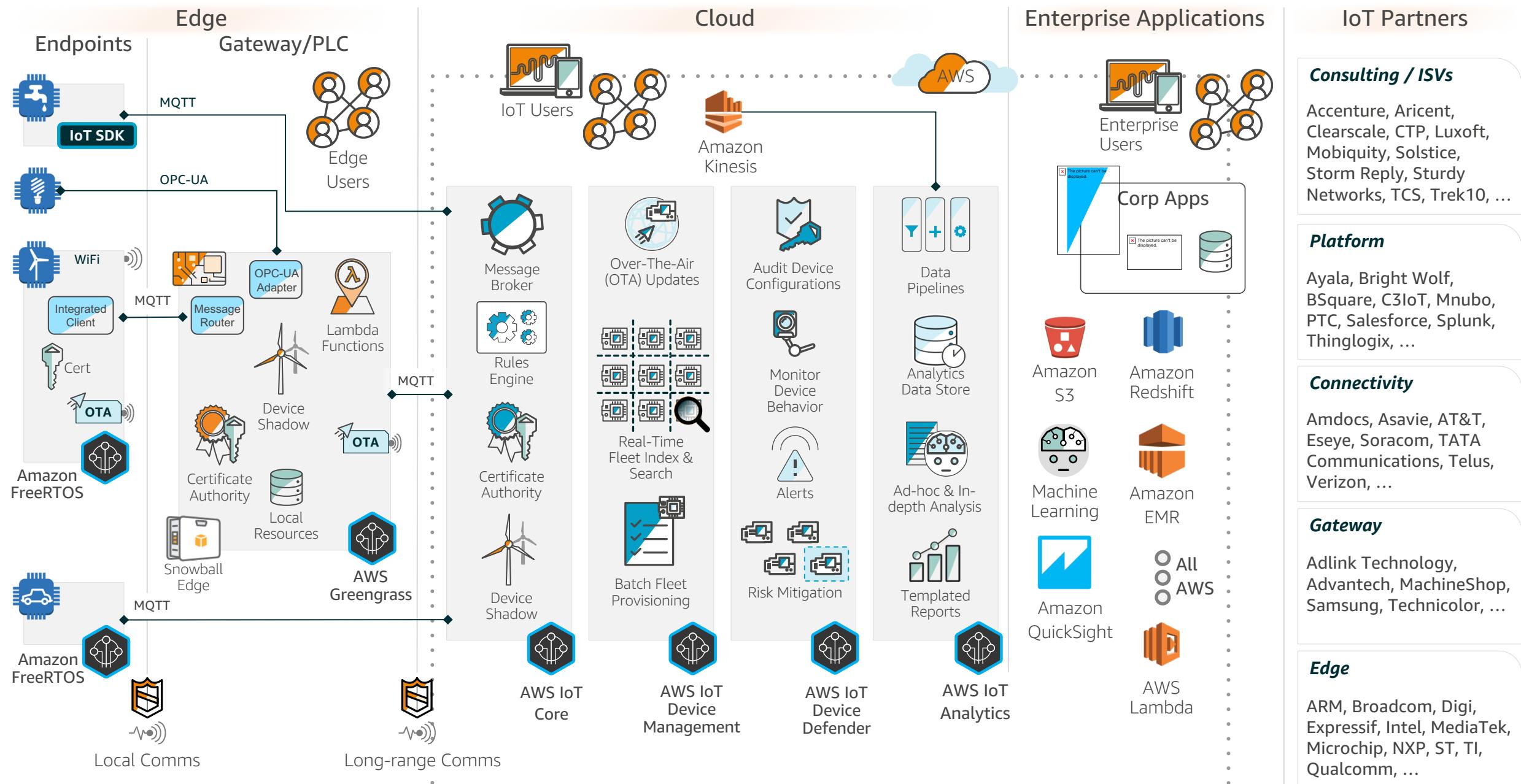


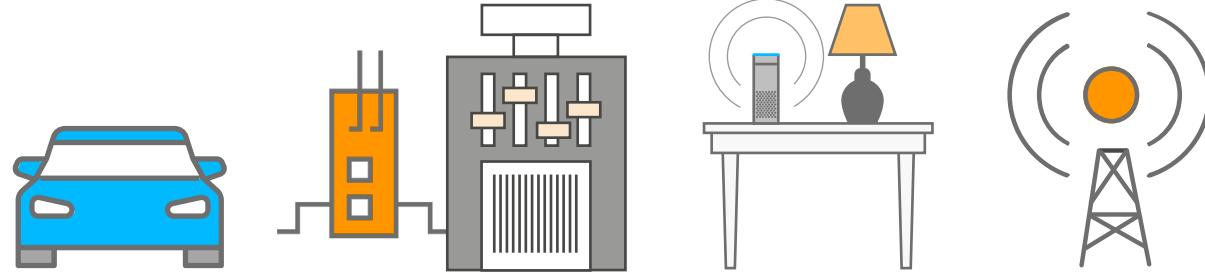
AWS IoT Analytics

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Helping customers to build their end to end vision of IoT

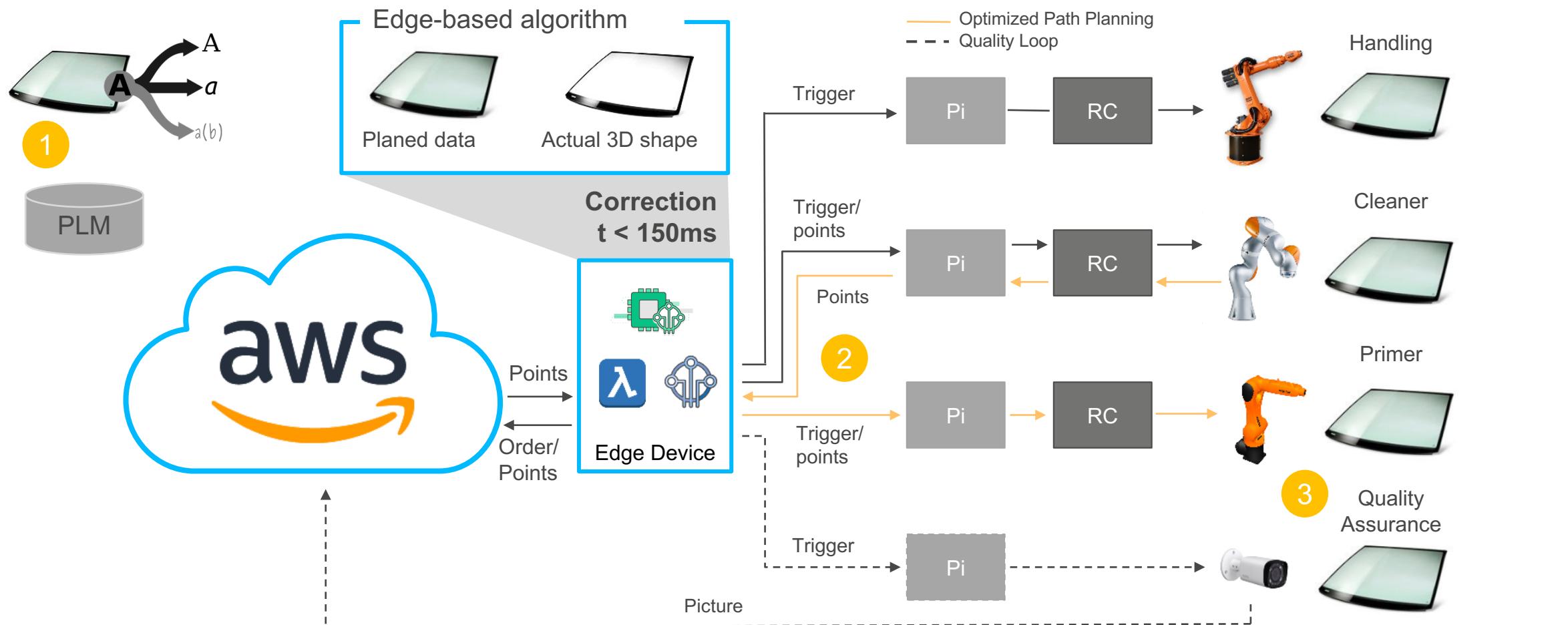




Demotime!

Automotive Windshield Production

- 1 **Fast Ramp-Up**
No more template generation
- 2 **Geometry adaptive process**
No more re-teaching
- 3 **Self-optimizing QA processes**
Increased quality for small batch sizes



Showcase at Hannover Messe

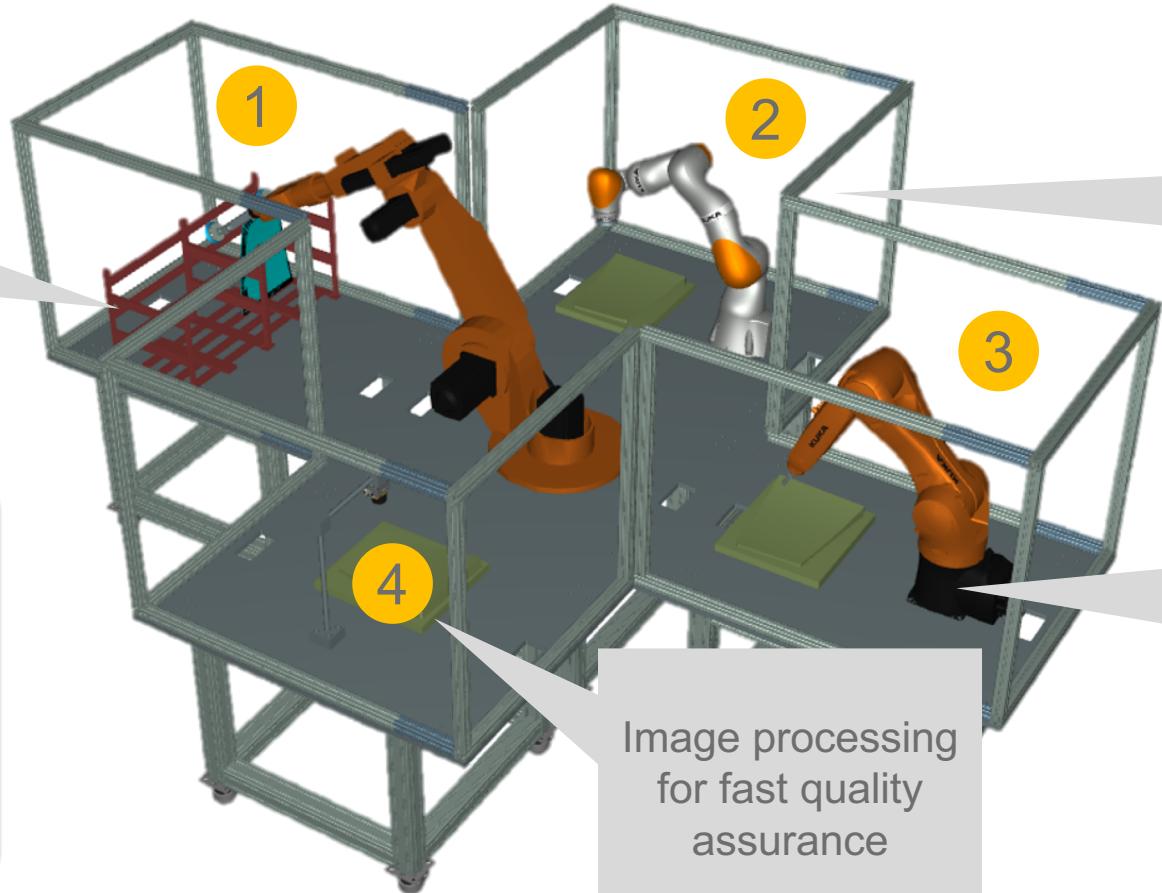
1 Handling

2 Cleaner

3 Primer

4 QA

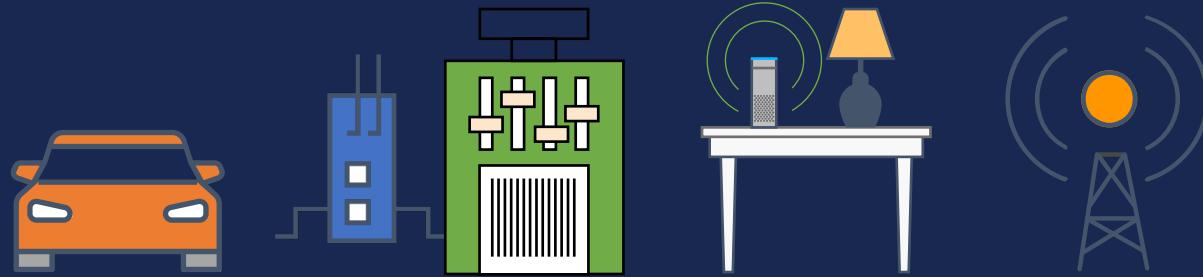
Trigger the handling with product data



Detection of deviations

Rapid adjustment of the primer program

Image processing for fast quality assurance



Thank you! Questions?

For more information visit: aws.amazon.com/iot/



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