

Benefits of Network Automation in an OT Environment

Tom Goerke, Cisco
GM Innovations Centres ANZ

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Innovation
Central

A collaboration led by 



Curtin University



Innovation Central

Proven Partnerships

Between corporate, SME, academic, research and government

Foundational Technologies

That enable secure IoT in agriculture, smart cities and transport

Customer-centric

Prioritise projects, solutions with high customer impact and that are scalable across the market

Data Science Enabled

Access to pool of world-class Data Scientists who can provide advice and implementation skills

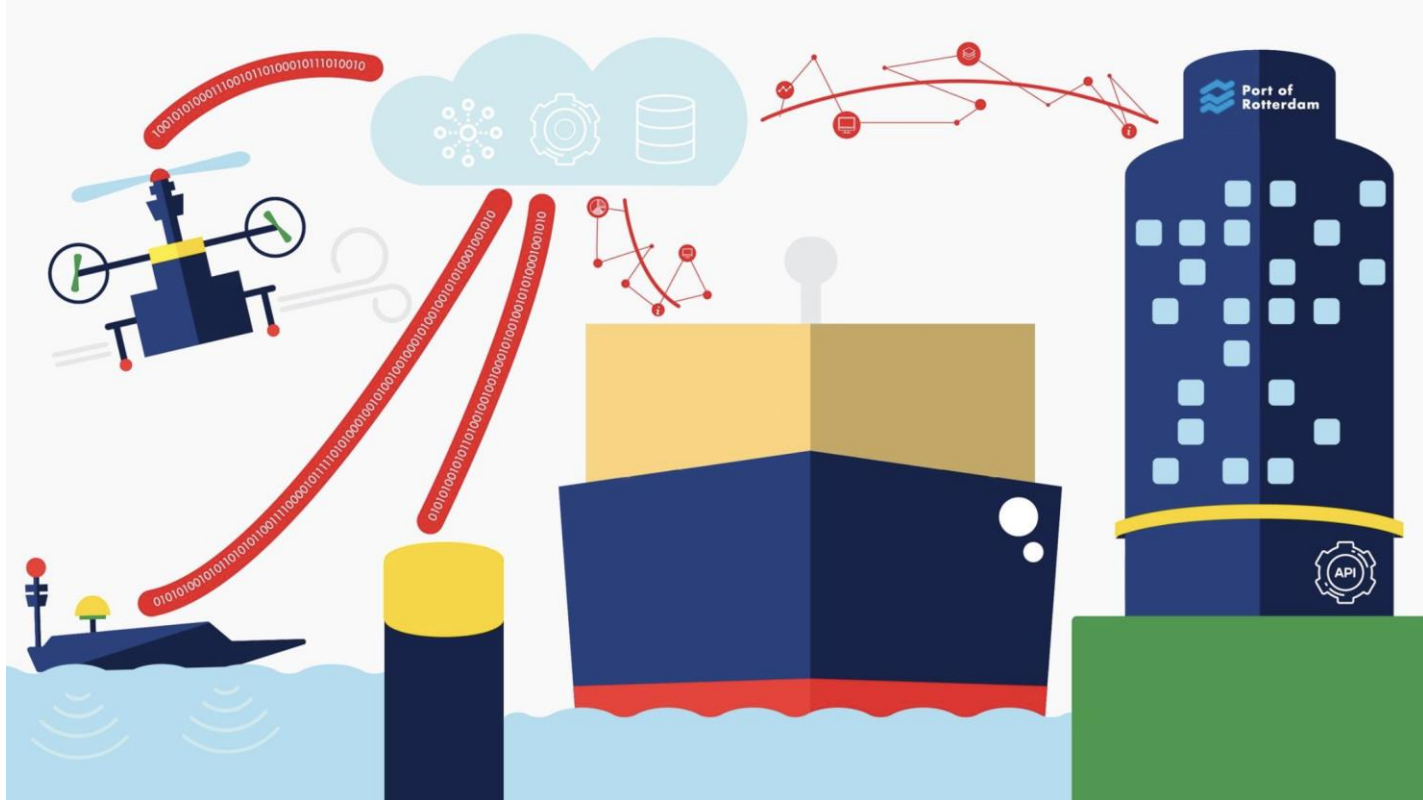
Accelerated solution development

Sprint projects that verify technical viability and provide good commercial insight

Port of Rotterdam



Smart Infra



IT and Operational Teams (OT) have different requirements

IT

What is this thing?

Does it belong to this network?

Is its connection functional?

What network access does it need?

Is it behaving as designed?

OT

How do I connect this thing?

Is it working & connected?

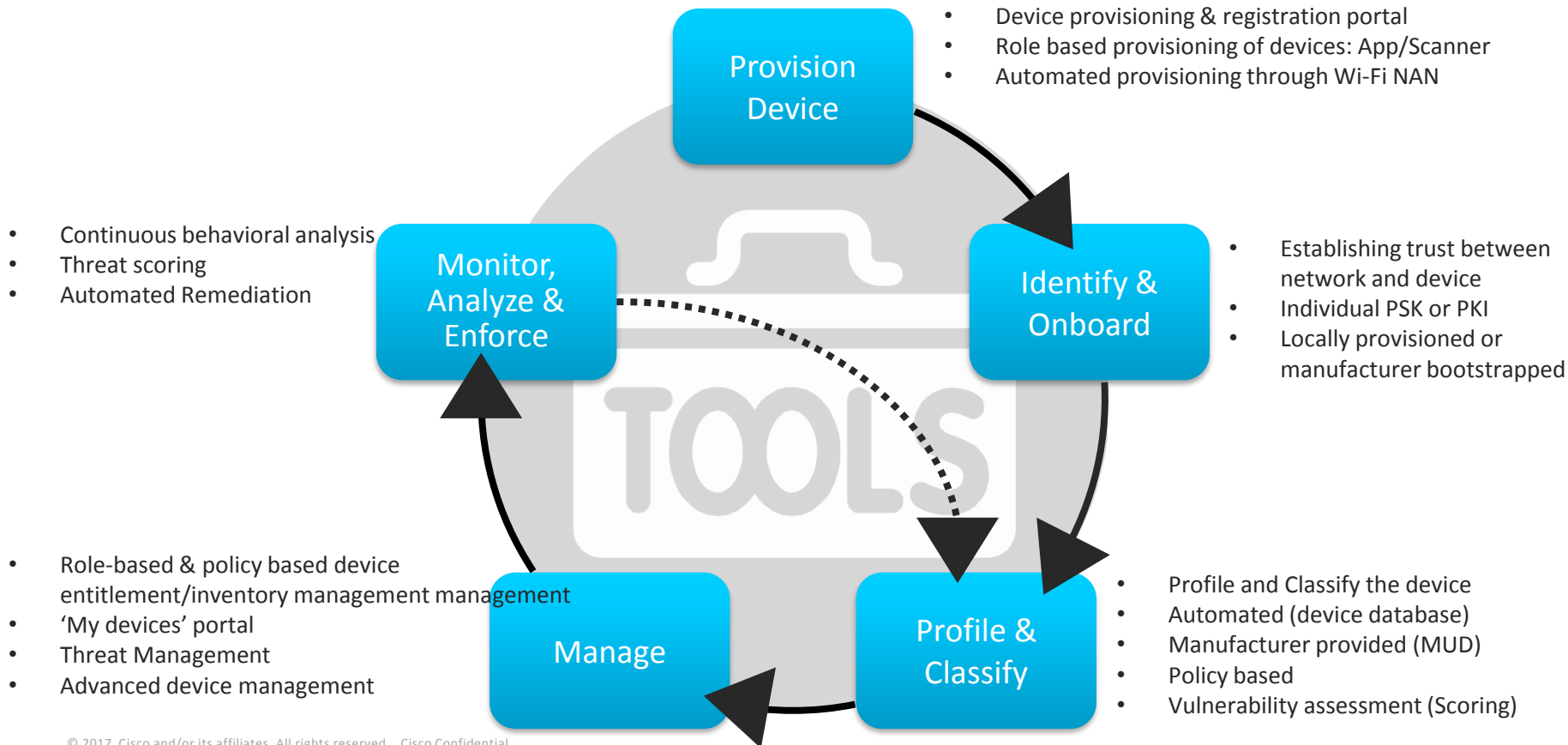
Does it need maintenance?

Is it communicating with its App?

Is it sending and receiving the data?

Everything is now a shade of grey

IoT Operational Tools: Managing IoT Lifecycle

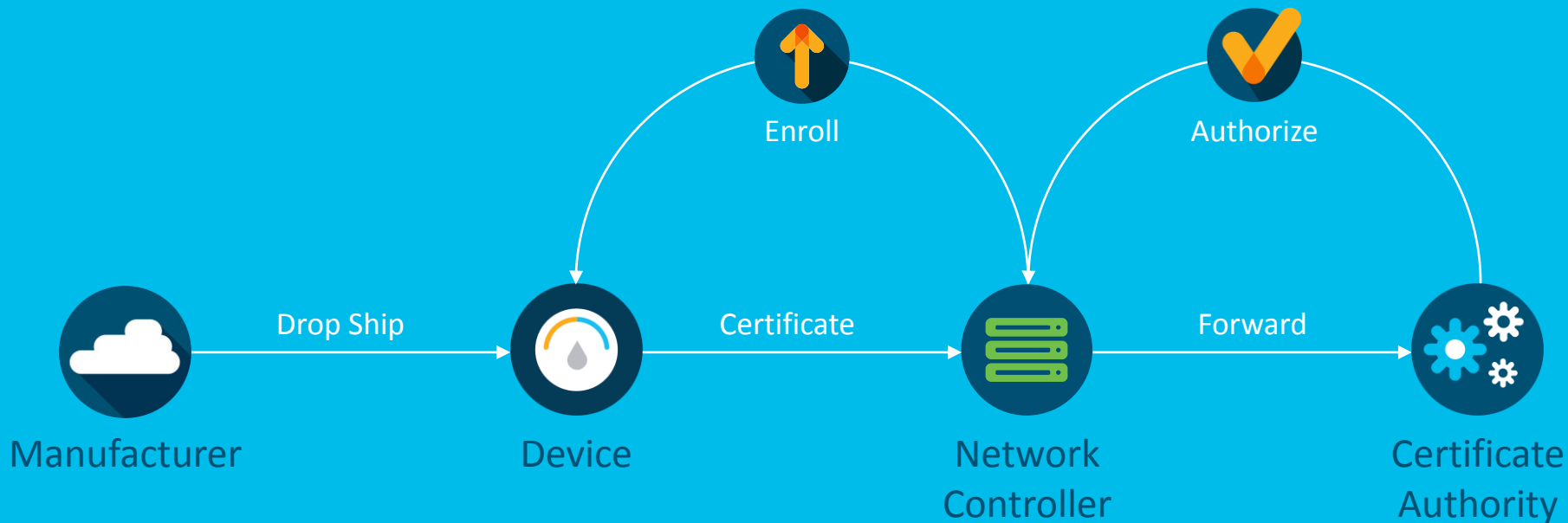


Problem

Scalable Autonomous onboarding with strong device identity

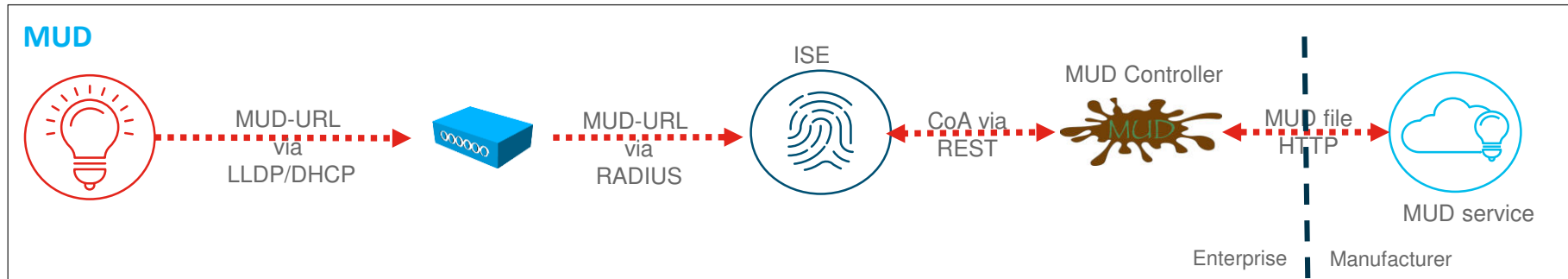
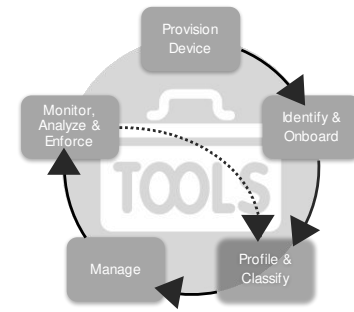
Solution

IETF Standards Bootstrap Remote Secure Key Infrastructure (BRSKI / ANIMA)



What is behind it: Automated Profiling of IoT Devices

1. OUI (MAC address)
2. AAA
3. DHCP/LLDP
4. RF Fingerprinting
5. Behavioral analytics
6. Manufacturer Usage Description (MUD)

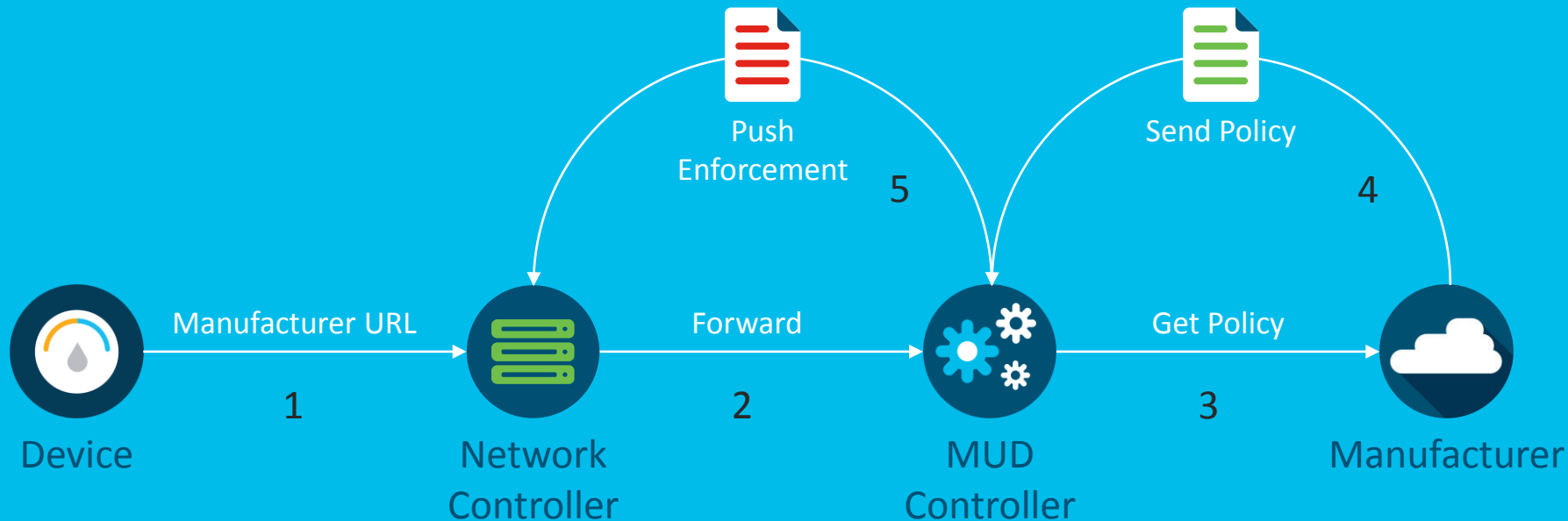


Problem

Understand expected device behavior
and turn it into policy

Solution

IETF Standard Manufacturer Usage
Descriptions (MUD)



What is behind it: Managing & Monitoring IoT Devices

1. Monitor

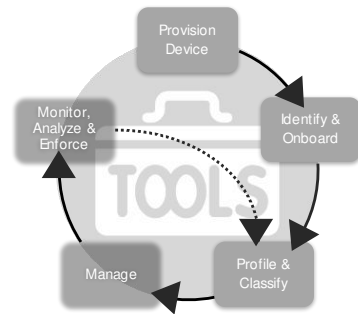
- RF Fingerprinting
- Traffic/Flow Inspection
- Stealthwatch
- Umbrella/Talos

2. Manage

- DNA-C network policy management
- DNA-C IoT policy manager
- IoT Insights mobile management tools for IT and OT

3. Enforce

- TrustSec



Summary

Summary

- Number of IoT devices will be exponentially higher than IT
- Manual approaches used in IT will NOT scale to IoT
- Industrial OT environments are in the process of increasing the number and types of sensors and devices
- IoT Security must be autonomous and simple
- Network teams need to be factoring in the Business requirements for IoT and starting the journey now
- Cisco is drafting these new standards and implementing them
- WISE Programme supporting this in ICP in Perth

Wireless Industrial Sensor Environment

An ICP Program



Vision

Validate cost effective, alternative approaches to digitise industrial assets through the development and evaluation of battery powered sensors

Approach

Build a low power access radio lab environment. Integrate the data acquisition platform. Stream sensor data into various historian and analytics platforms. Evaluate and drive the smart sensor market

Outcome

Understanding of ideal sensor, connectivity and data acquisition solutions to support massively scalable industrial sensor networks

