Simple Steps to Secure your IoT Devices

Rob Dobson, Device Authority

Chris Torr, MultOS

DEVICE AUTHORITY
Trust for every Thing

Today's Speakers & Key Objectives

Robert Dobson, Director of Technology, Device Authority

Chris Torr, Technical Manager, MAOSCO Ltd

Key Objectives / Outcomes

- Understand secure by design approach for chip to cloud security
- Learn why an IoT IAM is key for chip to cloud security
- Understand how you can apply data centric privacy, token based auth & cert based auth to IoT devices
- Gain understanding of how to automate security for IoT

DEVICE AUTHORITY
Trust for every Thing

Business Challenges for IoT leaders

Safety and confidentiality

Personal data theft

Device tampering and Ransomware

Brand damage and reputation

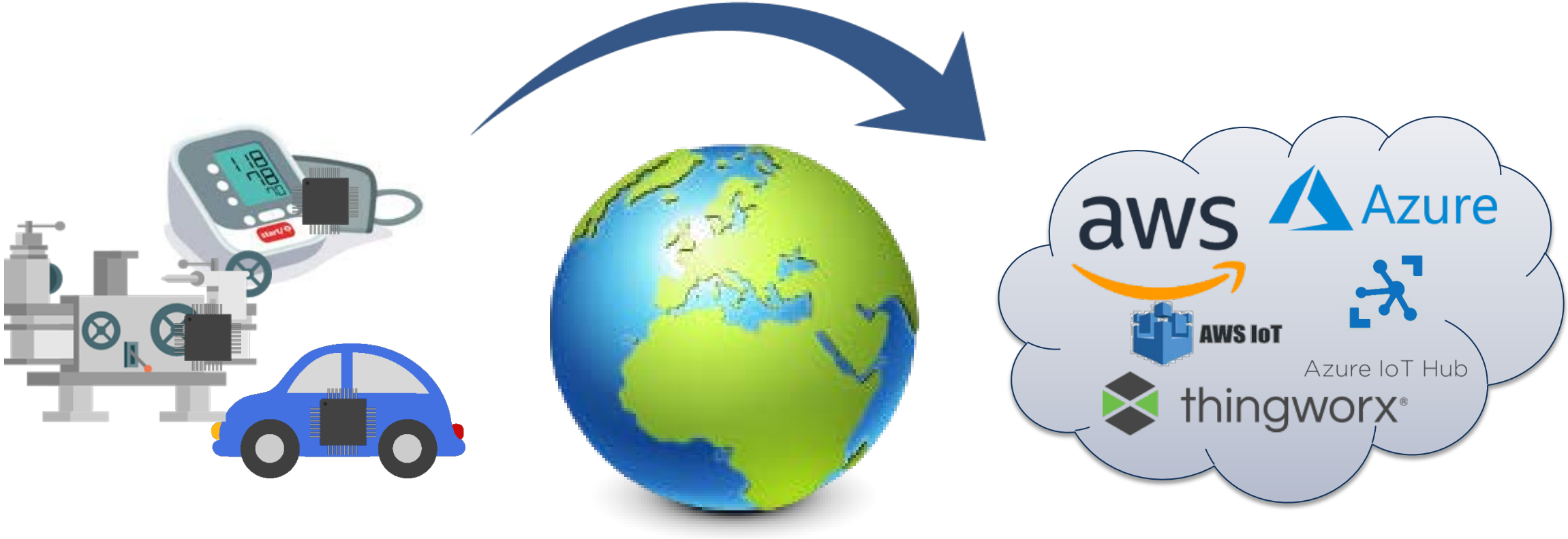
Compliance and regulatory adherence

Financial liability

- GDPR the higher of **€20 million or 4% of annual global turnover**

DEVICE AUTHORITY
Trust for every Thing

What do we mean by chip to cloud?



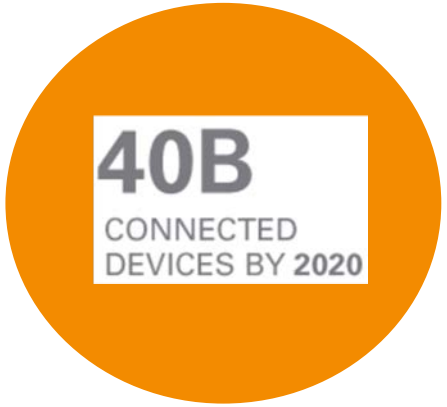
How do you build in and manage security from device to cloud?

DEVICE AUTHORITY
Trust for every Thing

Some challenges …

IoT Device

- Trusting the device
- Securing device boot
- Validating app code
- Securing Software Updates



Scale

- Provision, manage identities
- Implementing data protection
- Managing encryption keys
- Authenticating devices, not users!

IoT Platform

- Device Authentication
- Managing data privacy?
- Validating the app

Compliance

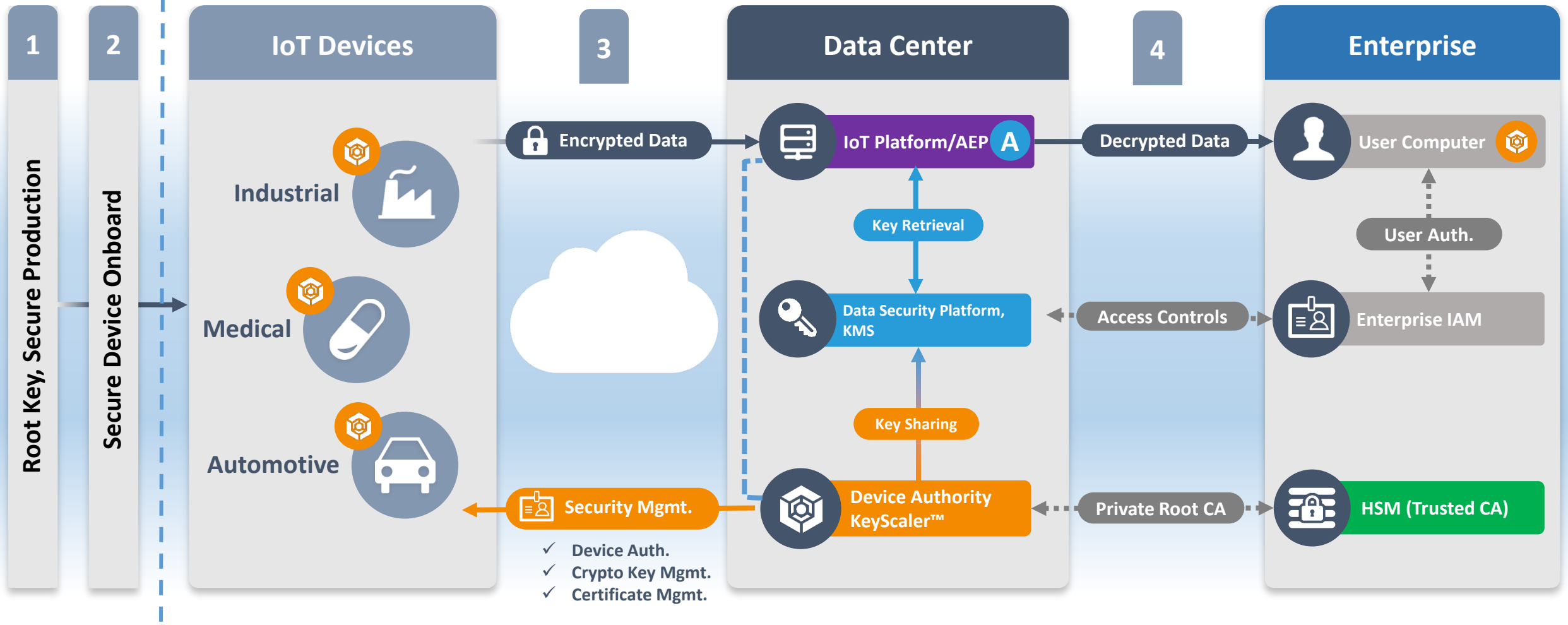
- Standards for protecting data
- Gaining consent for data processing
- Enhanced data subject rights

Secure by design!

DEVICE AUTHORITY
Trust for every Thing

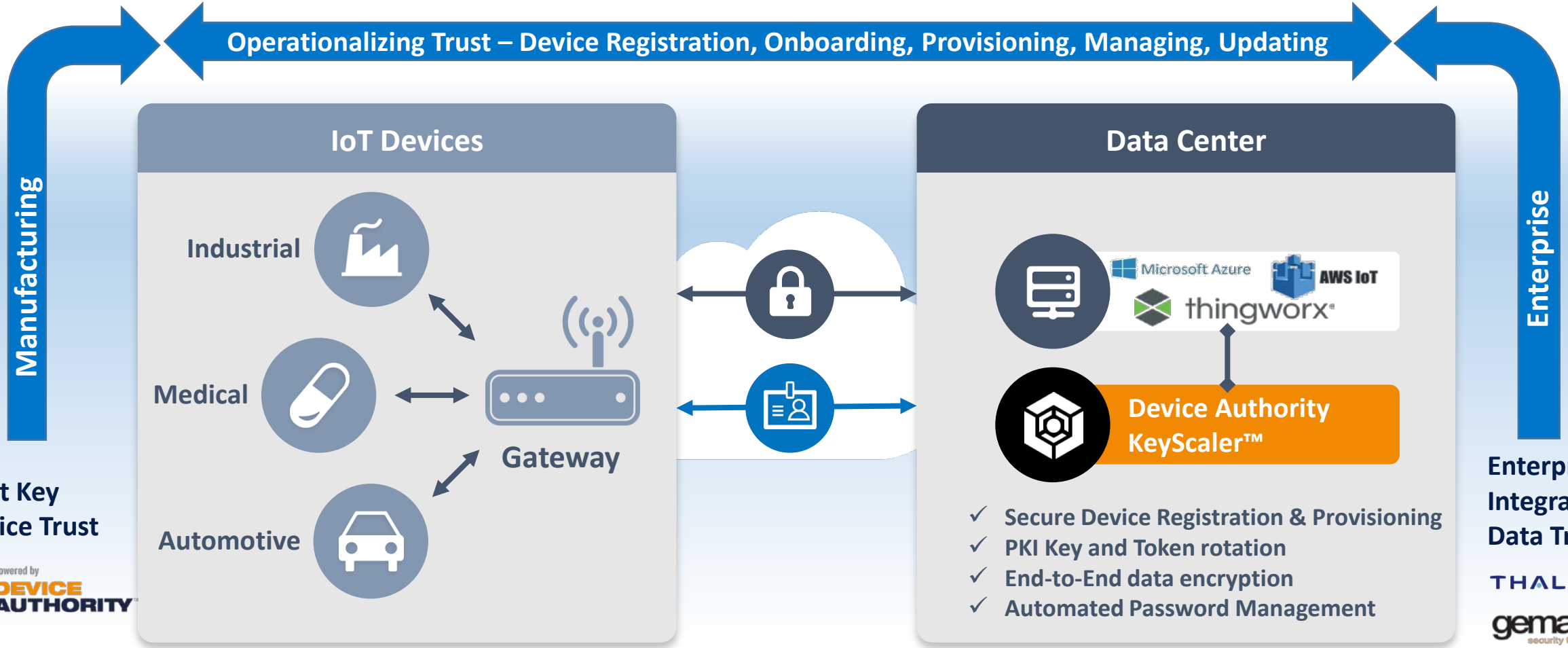
The bigger picture…

- Device Trust - Identity, Integrity
- Data Trust - Security, Privacy
- Operationalizing the trust at IoT Scale



Device Authority IoT IAM

IoT Trust and Scale problems solved with Device Centric IAM Platform



Secure by design with “off the shelf” components

- Make security as easy as possible for customers
- Providing off-the shelf options for OEMs to build in security
- Enabling customers to focus on gaining valuable insights and business value out of the data and application
- Providing all the pieces for device and end to end cloud solution
- IoT IAM enabling choice for IoT Platform & Security operations
  - Pre built connectors to IoT Platforms, CAs and HSMs
- Meeting a wide range of use cases and applications

Software

gemalto
security to be free

Go to market options for this…

DEVICE AUTHORITY
Trust for every Thing

Example: DA and MultOS

- ✓ *Makes security easier to apply to products, secure by design*
- ✓ *All the benefits of secure MCU & security management*
- ✓ *Connecting all the IoT Components together*
- ✓ *Flexibility to address many verticals including Healthcare, Industrial, Automotive*
- ✓ *Supports many security operations: Device reg, E2E crypto, Token and Cert based auth*

DEVICE AUTHORITY
Trust for every Thing

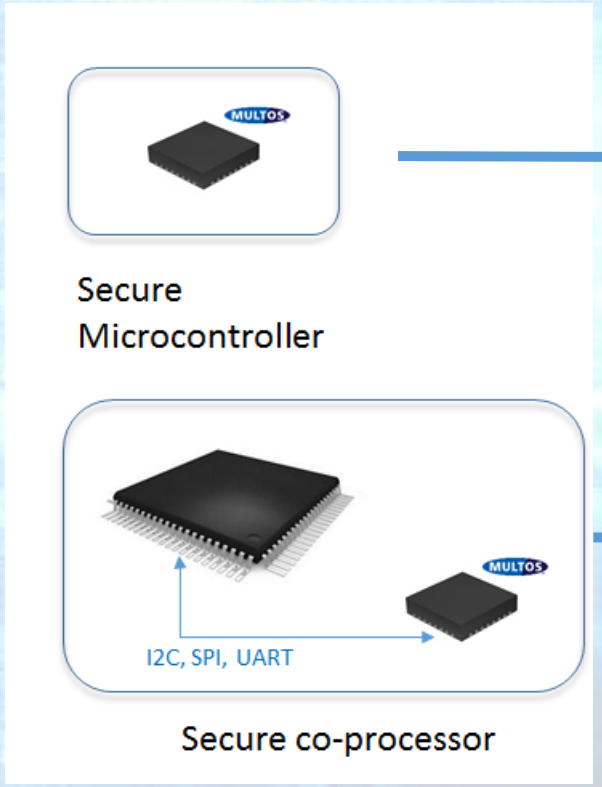
MULTOS Capabilities for IoT

- A hardware root of trust
  - A unique cryptographic identify for each device
- Secure storage of keys, private assets and all data
- A secure environment for executing all code
- Hardware cryptographic accelerators
- Multi-application environment (firewalled)
  - Impossible to load rogue or corrupted apps
- Secure boot

PLUS

- All the features of a small, general-purpose MCU

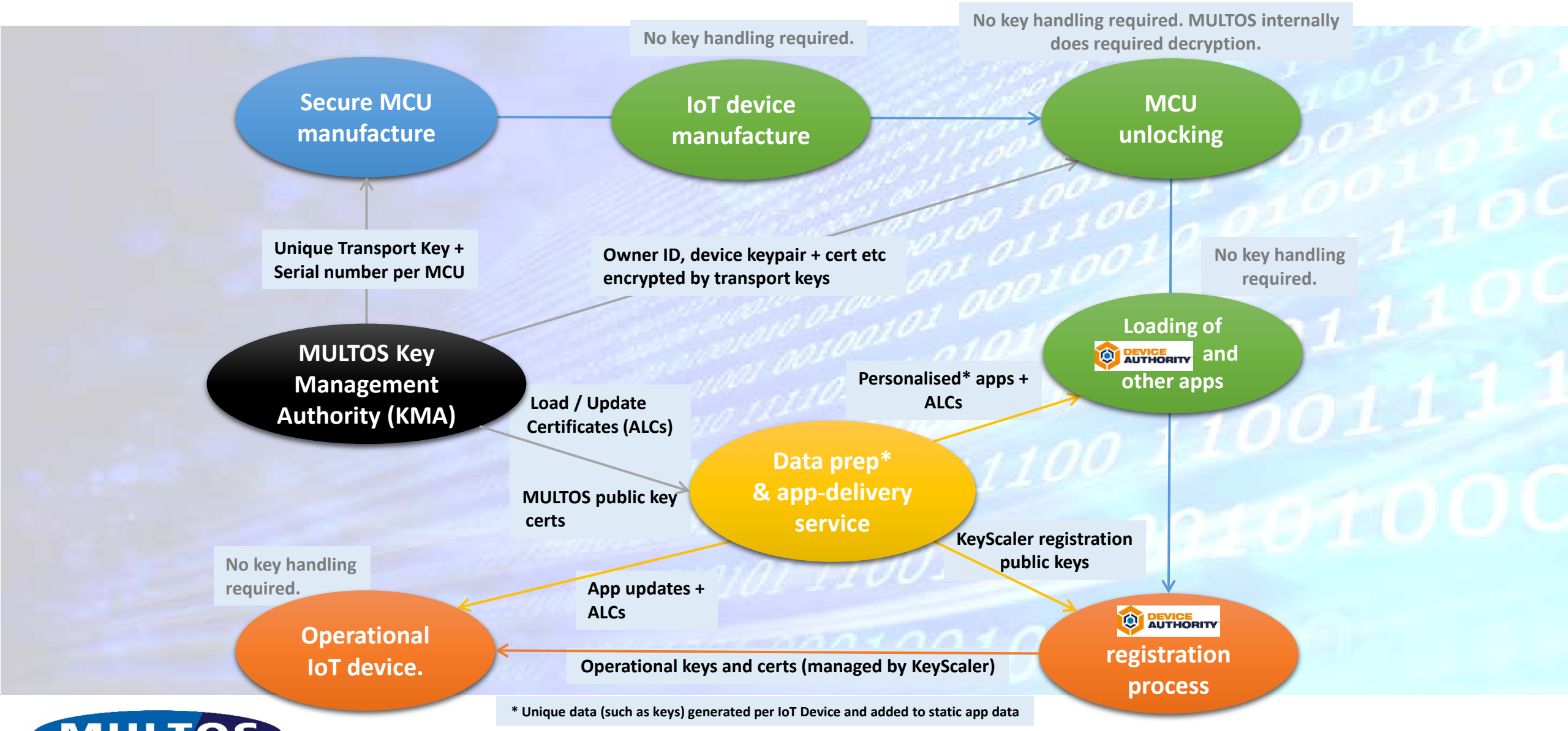
IoT Use Cases



Combined: Functionality + Security

Delegated Security: Main MCU delegates security functionality to MULTOS chip

MULTOS Secure lifecycle with Device Authority KeyScaler



MULTOS tm

Chip to Cloud Security – The “Simple” Steps

- Utilize “off the shelf” solutions to build security into your products
- Pull in experts and solutions to compliment your products – You don’t have to be experts in everything!
- Use solutions which enable you to operationalize security and manage security into IoT Platforms
- Adopt a methodology
  - Secure by design approach
  - Review the end to end security posture
  - Design in security during each dev cycle
  - Choose solutions designed for IoMT
  - Test you solution and test again
  - Monitor and review in the field
- Have vulnerability disclosure policy
- Build a culture

DEVICE AUTHORITY
Trust for every Thing

Thank you!

Robert.Dobson@deviceauthority.com
www.deviceauthority.com
@DeviceAuthority

chris.torr@multos.com
www.multos.com
@multos