

# Windows 10 IoT Update

Microsoft IoT Device Experience 사업부

조한규 부장

2018년 11월 15일





기술의 발전

프라이버시, 보안

윤리적 AI



# Microsoft will invest \$5 billion in IoT



# Products

## Windows IoT



Productive



Trusted



Connected

Windows IoT Enterprise  
Windows IoT Core

## Azure IoT



Agile



Comprehensive



Secure

IoT PaaS, SaaS  
Extend AI/AA to edge  
Provision at scale

# Products

## Windows IoT



Productive



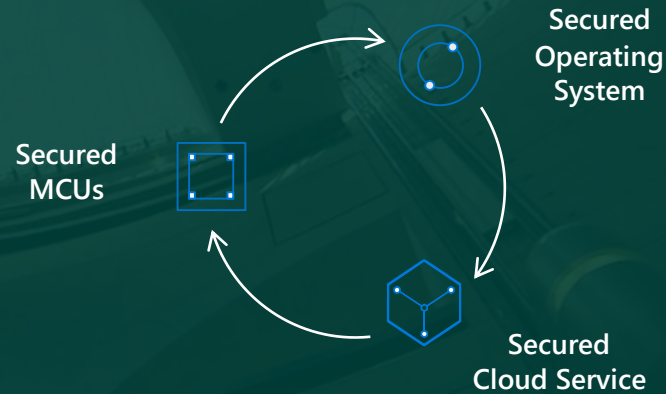
Trusted



Connected

Windows IoT Enterprise  
Windows IoT Core

## Azure Sphere



Secure and power intelligent edge to cloud

## Azure IoT



Agile



Comprehensive



Secure

IoT PaaS, SaaS  
Extend AI/AA to edge  
Provision at scale

# Windows IoT powers the intelligent edge

## Faster time to market



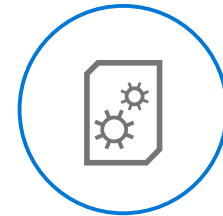
Innovate and get to market faster with powerful Windows development tools and Azure integration

## Intelligent security



Protect devices, data, and identities with intelligent security, built in and up to date

## Smarter devices



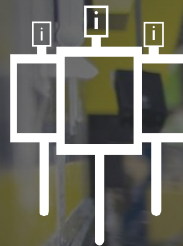
Optimize your edge and cloud intelligence with devices that can do more

# Windows 10 IoT editions



## Windows 10 IoT Core

Bringing the core of Windows to smart devices

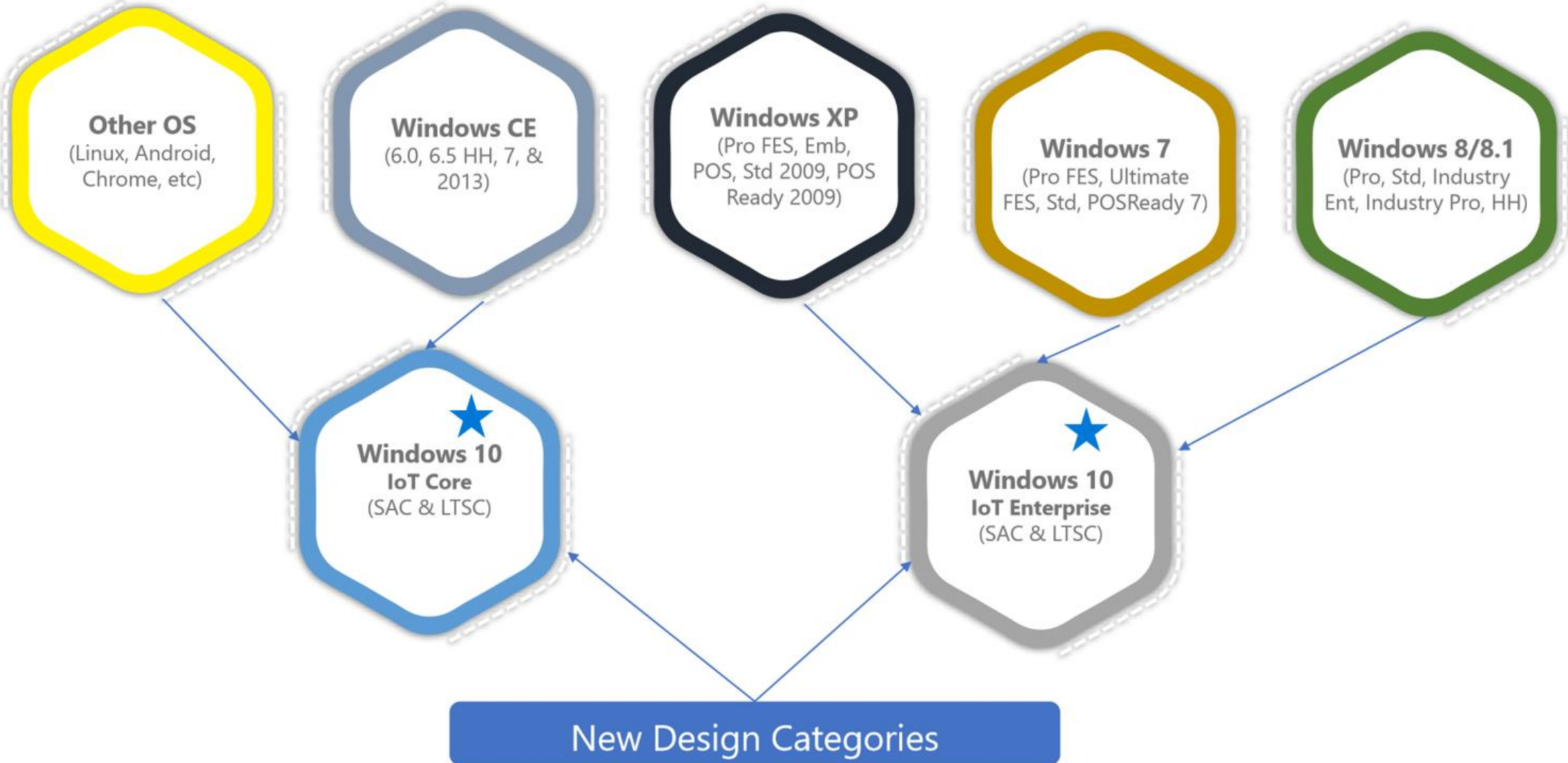


## Windows 10 IoT Enterprise

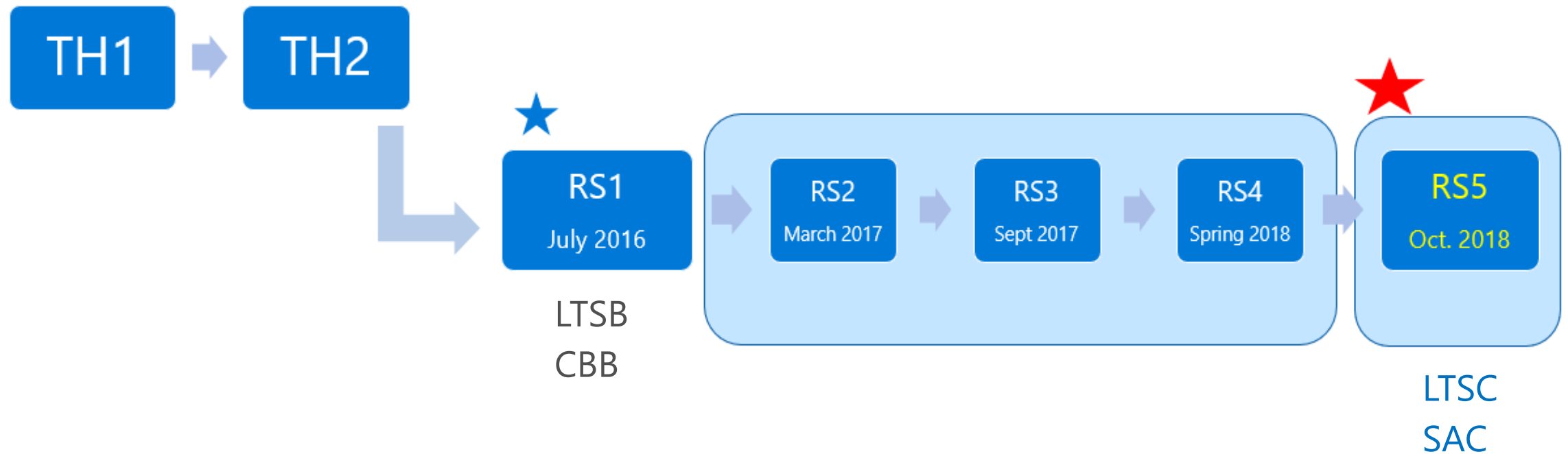
Bringing the full power of Windows to smart devices



# Windows IoT Product Migration Path



# Windows 10 IoT Release History



# IoT End-to-End Security Offering



Protect



Detect



Remediate

## Core HW & Platform

Malware resistance w/  
**SecureBoot**

Securing keys in the  
TPM

Information protection  
for data at rest with  
**BitLocker**

Execution control via  
**DeviceGuard for IoT**

Security updates

## Trusted Execution Control

Secure point-to-point  
communication from  
cloud to I/O pin

Securing IO operations  
through policy-based  
execution on cyber  
physical systems (CPS)

**Non-repudiated**  
auditing for  
tamperproof logging

## System Guard\*/DHA

Security related data  
points validated by  
**Remote Health**  
**Attestation Service**

**Measured boot data**,  
protected by the TPM,  
sent to service for  
verification

**Conditional Access** to  
sensitive assets based on  
device health assessment

## Windows Defender ATP\*

**Advanced Threat**  
**Protection** with cloud-  
powered, behavioral-  
based, post-breach  
detection

**Anomaly detection**,  
combined with Microsoft  
threat intelligence  
knowledge base

**Forensic investigation and**  
**mitigation** capabilities

## Recovery and DM

**Remediate** the affected  
device **via DM** (e.g. flash  
the device)

**Root of Trust for**  
**Resiliency**  
Auto restoring FW to a  
state of integrity after  
corruption

# Windows 10 IoT Enterprise highlights

October 2018 release

Next release of Windows will be **LTSC-10 years support**

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Azure IoT **Device Management** support

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**Windows AI Platform support** for Azure IoT Edge

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Improvements to Assigned Access

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# Windows 10 IoT Core highlights

October 2018 release

[NXP support](#)\* for I.MX6, I.MX7, and I.MX8

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Windows [AI Platform support](#) for Azure IoT Edge

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Intune [Device Management](#) support

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Windows 10 IoT [Core Services \(10 Years, LTSC\)](#)

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\* Available in private preview; GA targeted for end of CY 2018



# Windows IoT Manageability

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Intune management for IoT Core

Azure IoT DM for IoT Enterprise

	IoT Core	IoT Enterprise
Azure IoT DM	✓	October 2018 release
Intune MDM	October 2018 release	✓

# Introducing Windows 10 IoT Core Services

Commercialize your project with enterprise-grade security and support



## Updates

- Take control of Windows updates with cloud-based **IoT Core Device Update Center (DUC)**
- Manage updates for OS, apps, settings, and OEM-specific files from the cloud
- Distributed over same global CDN used by Windows Update



## Security

- Help ensure the safety of your network and devices with cloud-based **Device Health Attestation (DHA)**
- Backed by the **same security research team and validation process** used by 500M Windows 10 devices
- Leverage hardware and cloud services to provide tamper proofing and remote attestation of device health



## Support

- Count on stable systems with **10 years of LTSC (Long Term Servicing Channel) support** with security updates only (no new features) Access to monthly published Windows IoT Core packages
- Official Microsoft Lifecycle Support statement - links to software license agreement
- Access to monthly published Windows IoT Core packages for **building fully patched images** with OEM tools

# IoT Core Capability for Faster Time to Market

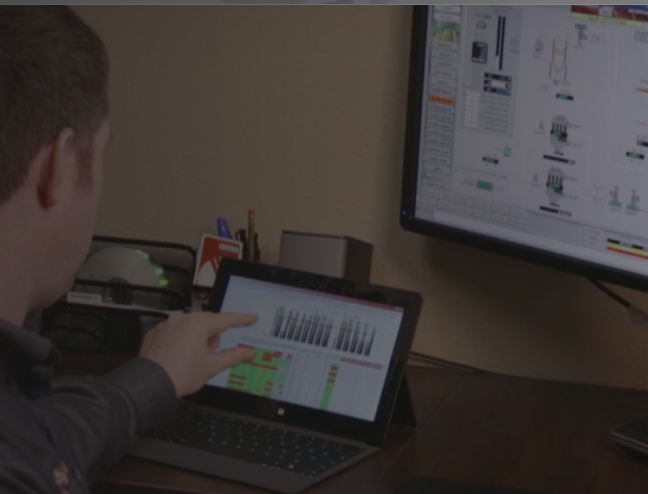
- **Build amazing user interfaces**

- ✓ Adaptive UI, Touch, XAML
- ✓ Pen and stylus interactions
- ✓ Cortana Devices SDK
- ✓ Speech Runtime
- ✓ Beamforming w/ multi-microphone topology
- ✓ Audio Graph
- ✓ Video transcoding, stream syncing, playback
- ✓ IMFSensorTransformFactory (attach sensors to frames/computer vision)
- ✓ Face analysis
- ✓ HoloLens / MR capabilities

- **Devices/Stacks work out of the box**

- ✓ Bluetooth
- ✓ NFC
- ✓ Cellular (Mobile Broad Band sticks)
- ✓ Networking, VPN
- ✓ Soft AP
- ✓ Connection Management (incl. Metered)
- ✓ IoT Busses (GPIO, I2C, UART, SPI)
- ✓ Retail Peripherals (incl. Camera Barcode Scanner)
- ✓ USB Class Drivers
- ✓ Haptics (ex: vibration)
- ✓ Sensor and Location Platform







Windows

# Business Model & Pricing

# Windows IoT Business Model & Pricing

## Today

Windows 10 IoT Enterprise SAC/LTSC sold as OEM SKU based on Value Based Pricing

Windows 10 IoT Core is a FREE edition available for download through Web & OEM

## Starting October 2018

Windows 10 IoT Core Services Subscriptions (10 Years of Support (LTSC), Update Control, & Device Health Attestation)

	Windows 10 IoT offerings	Windows 10 IoT Enterprise SAC/LTSC	Windows 10 IoT Core	Windows 10 IoT Core Services
Per Device Price*		\$\$	Free	\$0.X/Device/Month (10 Yrs. Pre-Paid in OEM Channel**)
Channels				
Azure EA				✓
CSP				✓
OEM		✓	✓	✓
Web			✓	✓

■ In Market
 ■ RS5
 ■ In Preview

\* List Price

\*\* 10 Years Pre-Paid Subscription SKU will be launched through OEM Channel

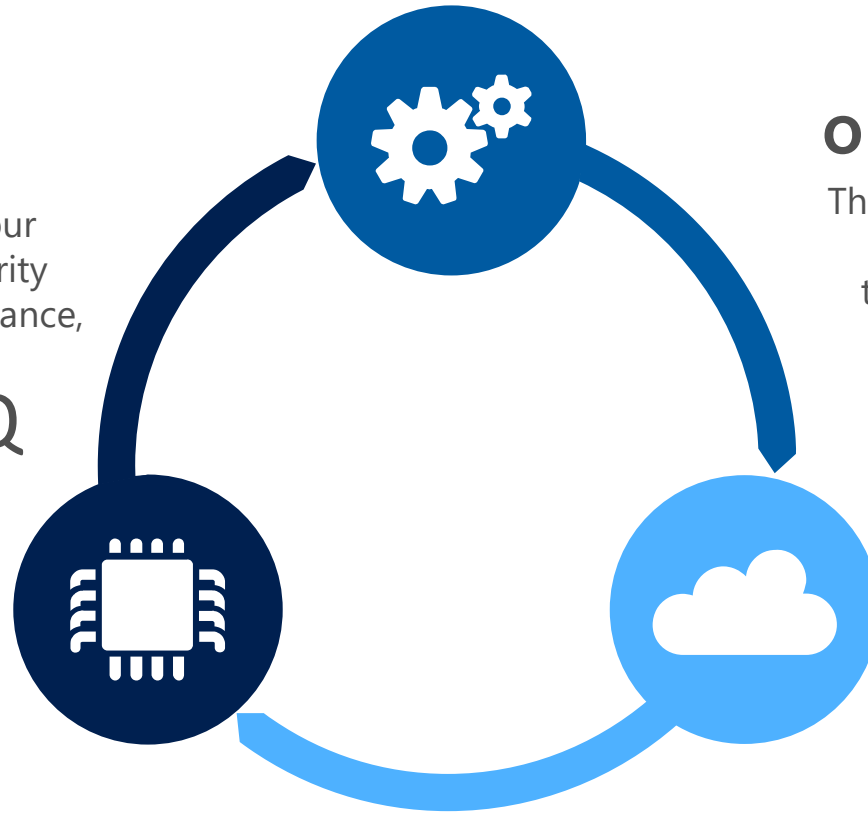
# Azure Sphere is an end-to-end solution for creating highly-secured, connected MCU devices

## SECURED MCUs

A new class of crossover **4x4 MCUs**, from our silicon partners, with built-in Microsoft security technology provide connectivity, high performance, and a secured hardware root of trust.



Q



## SECURED OPERATING SYSTEM

The highly-secured **4x4 IoT OS** combines the best of Microsoft and OSS technologies to create a **trustworthy platform** for new IoT experiences

RST

## SECURED BY OUR CLOUD SERVICE

The **4x4 Security Service** guards every 4x4 device; it **protects** your devices and customers, **detects** emerging threats, and proactively **responds**.

UVW

# Strategic Investment

## Target verticals



Energy



Retail



Factory/Industrial



Security & Surveillance



Healthcare



Buildings

1

Concept development

Lowest Investment Dollars

2

Proof of Concept (POC)

Medium Level of Investment

3

Pilot/Proof of Business (POB)

Highest Level of Investment

# Windows 10 IoT edition comparison highlights

	Windows 10 IoT Core	Windows 10 IoT Enterprise*
User experience	Single UWP app active in foreground at one time with supporting background apps & services	Traditional Windows shell with advanced lockdown features
Headless supported	Yes	Yes
App architecture supported	UWP	UWP & Win32
Cortana	Yes	Yes
Management	Azure IoT DM, MDM	Azure IoT DM, MDM, traditional agent-based (e.g. SCCM)
Device security technologies	TPM, Secure Boot, BitLocker, Device Guard, Device	TPM, Secure Boot, BitLocker, Device Guard, Device
CPU architecture support	x86, x64, ARM32, ARM64	x86, x64
System resources	512MB RAM + 2GB storage	1GB RAM + 16GB storage**
Licensing	Online licensing terms agreement and embedded OEM agreements, royalty-free, subscription	Direct and indirect embedded OEM agreements
Usage scenarios	<ul style="list-style-type: none"> <li>Digital signage &amp; kiosks</li> <li>IoT gateway</li> <li>Manufacturing devices</li> </ul>	<ul style="list-style-type: none"> <li>Small medical devices</li> <li>Wearables</li> <li>Smart building</li> </ul>
		<ul style="list-style-type: none"> <li>Digital signage &amp; kiosks</li> <li>IoT gateway</li> <li>Manufacturing devices</li> </ul>
		<ul style="list-style-type: none"> <li>Large medical devices</li> <li>Industry tablets</li> <li>POS, ATM</li> </ul>

\* Windows 10 IoT Enterprise is Windows 10 Enterprise with different licensing and distribution

\*\* 2GB/20GB for 64-bit