IoT Plug and Play certification

Koichi Hirao

Dec 2019

What partners are saying

"**We need toolchains to tailored to support specific devkits** like Jetson TX2 boards. We need to have the exact device image to be working on ARM64. Most low-level codes are written in C++ and you can't wrap around with C#. These device bring up is taking 3-4 weeks and sometimes a month " Device developers

"**Onboarding, learning, and getting to prototype is difficult**. Hand-holding is really needed. We spent 3 weeks on a prototype and out of those 3 weeks, 2.5 were spent figuring out where stuff is." Princ Engr of Product Development

"We make modules, customers are looking for end device. We need **to find other partners to build devices** with and that is time consuming for each use case. Customers are segmented in different industries. They need a lot of different specs. We need Microsoft to **help with standardizing and providing code** and making it easier build across. " Product Developer

"**It's nice to simulate a device before making actual device purchase** at bulk to understand the data is sent to Azure IoT services. This can accelerate the device development in PoC" Device developer
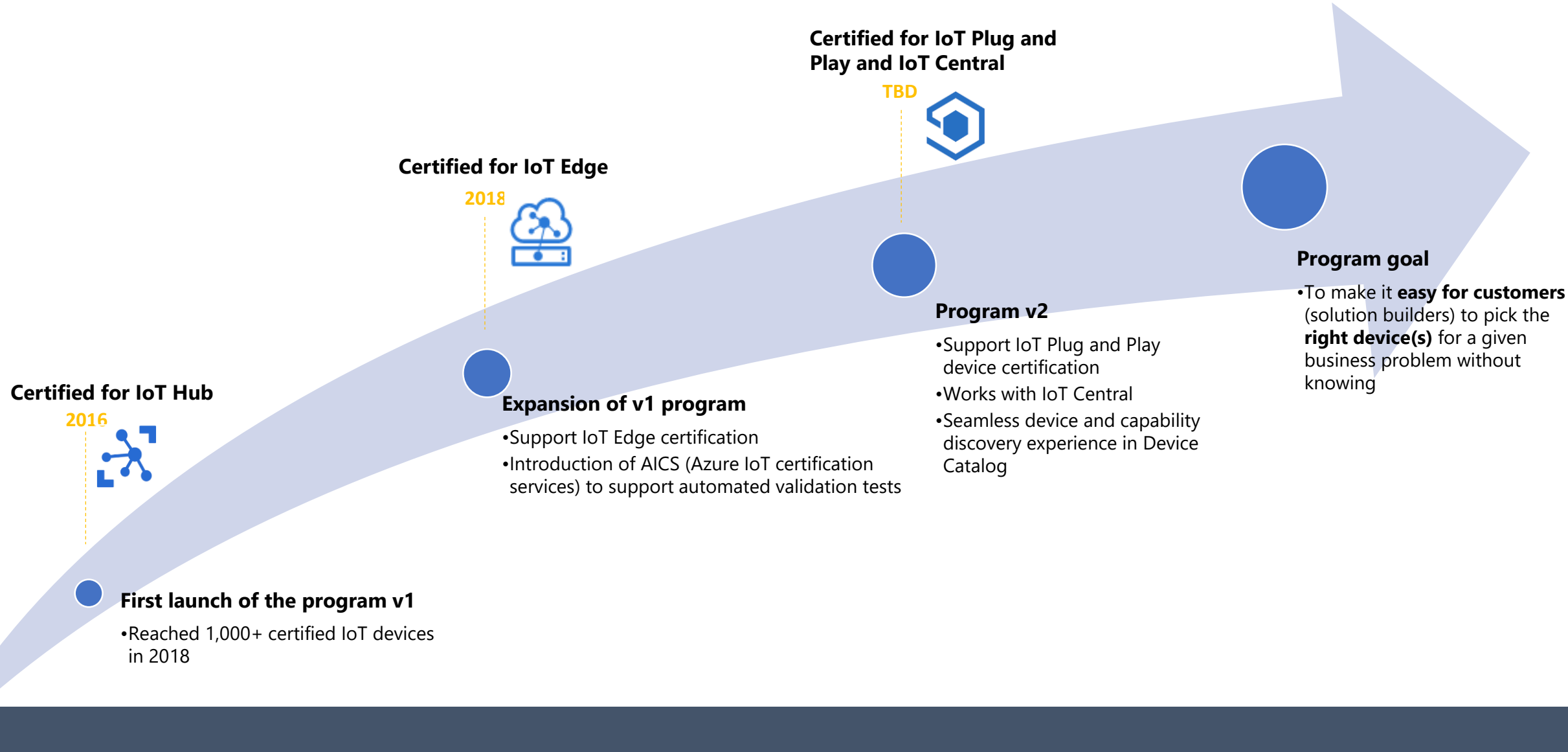
Azure

Device certification vision

- We simplify prototyping for builders

- We make unboxing and development magical

- We allow builders to standout

- We give confidence to device buyers

Core Certified IoT PnP promises to buyers

- Compatible with DTDL and easily consume-able by IoT Central and IoT Hub
- Deliver best-in-class out of box experiences to provision to IoT Hub/IoT Central
- Up-to-date 'Get started' documents
- Bootstrapped toolchain installation and device onboarding
- Support all programming languages to easily develop device codes by buyers
- Ability to simulate based on the DCM to IoT Hub/Central

Azure Certified for IoT program evolution

Certified for IoT Plug and Play and IoT Central

TBD

Certified for IoT Edge

2018

Certified for IoT Hub

2016

First launch of the program v1

•Reached 1,000+ certified IoT devices in 2018

Expansion of v1 program

•Support IoT Edge certification
•Introduction of AICS (Azure IoT certification services) to support automated validation tests

Program v2

•Support IoT Plug and Play device certification
•Works with IoT Central
•Seamless device and capability discovery experience in Device Catalog

Program goal

•To make it **easy for customers** (solution builders) to pick the **right device(s)** for a given business problem without knowing

Introducing Azure IoT certification service (AICS)

- Consistency
  - Web based workflow to automate certification tests for IoT devices

- Expansion of tests
  - Additional tests for IoT Hub primitives to bi-directional messages

- Flexibility
  - Validation against the software code w/o IoT device SDK usage

- Simplicity
  - Easy to navigate user experience that is simple and intuitive
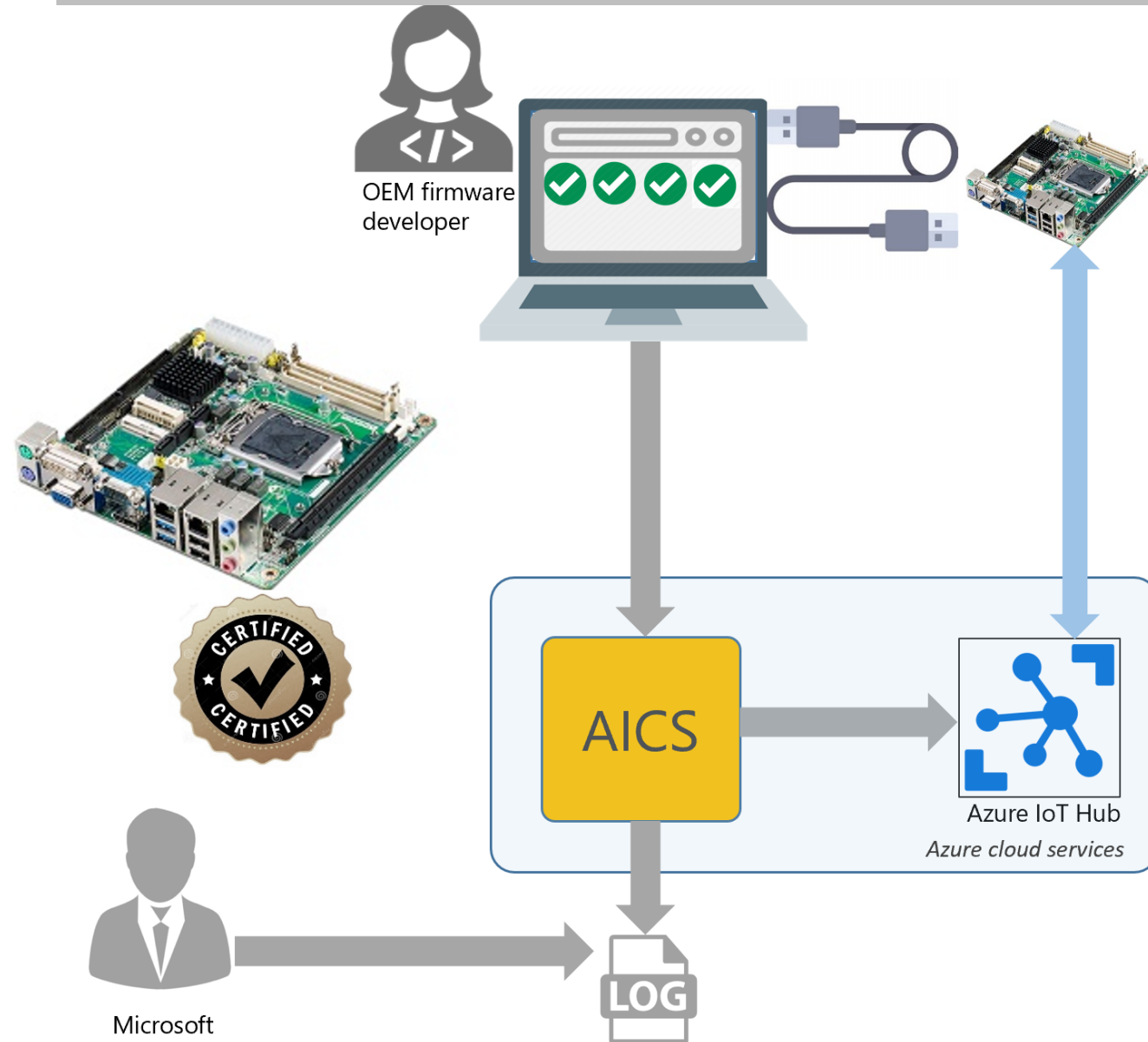
Investments to the IoT PnP certification program

Available Now

[Certification Portal]
- **New partner onboarding**
- PnP model/interface management
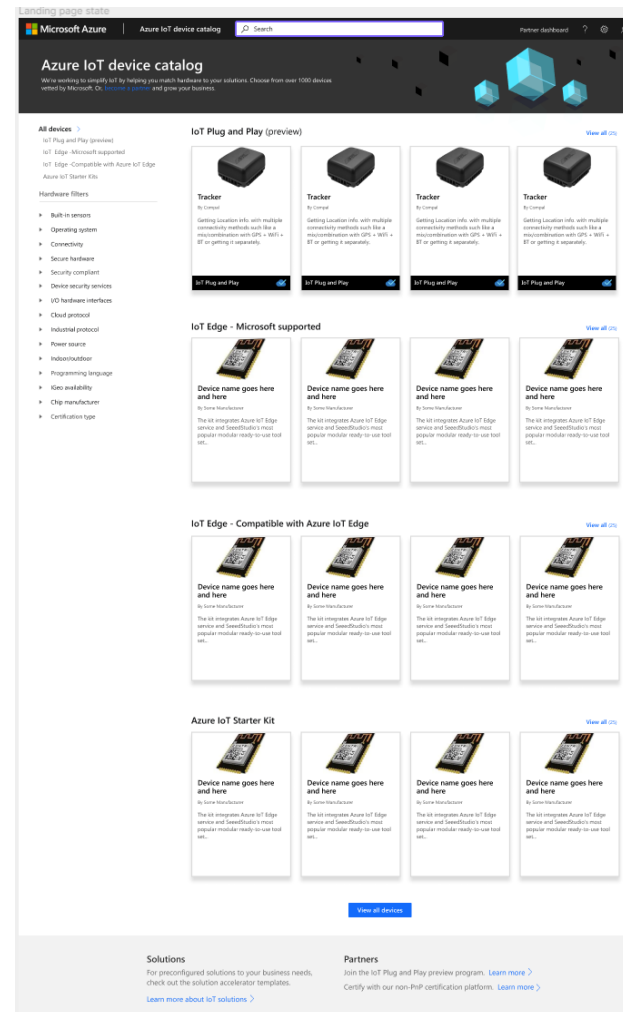- Running validation tests
- Publish to the device catalog

[AICS]
- **Streamlined validation tests**
- Compliance with DTDL v1
- Compatibility with IoT Central

[PnP Core]
- **Device Info collection**
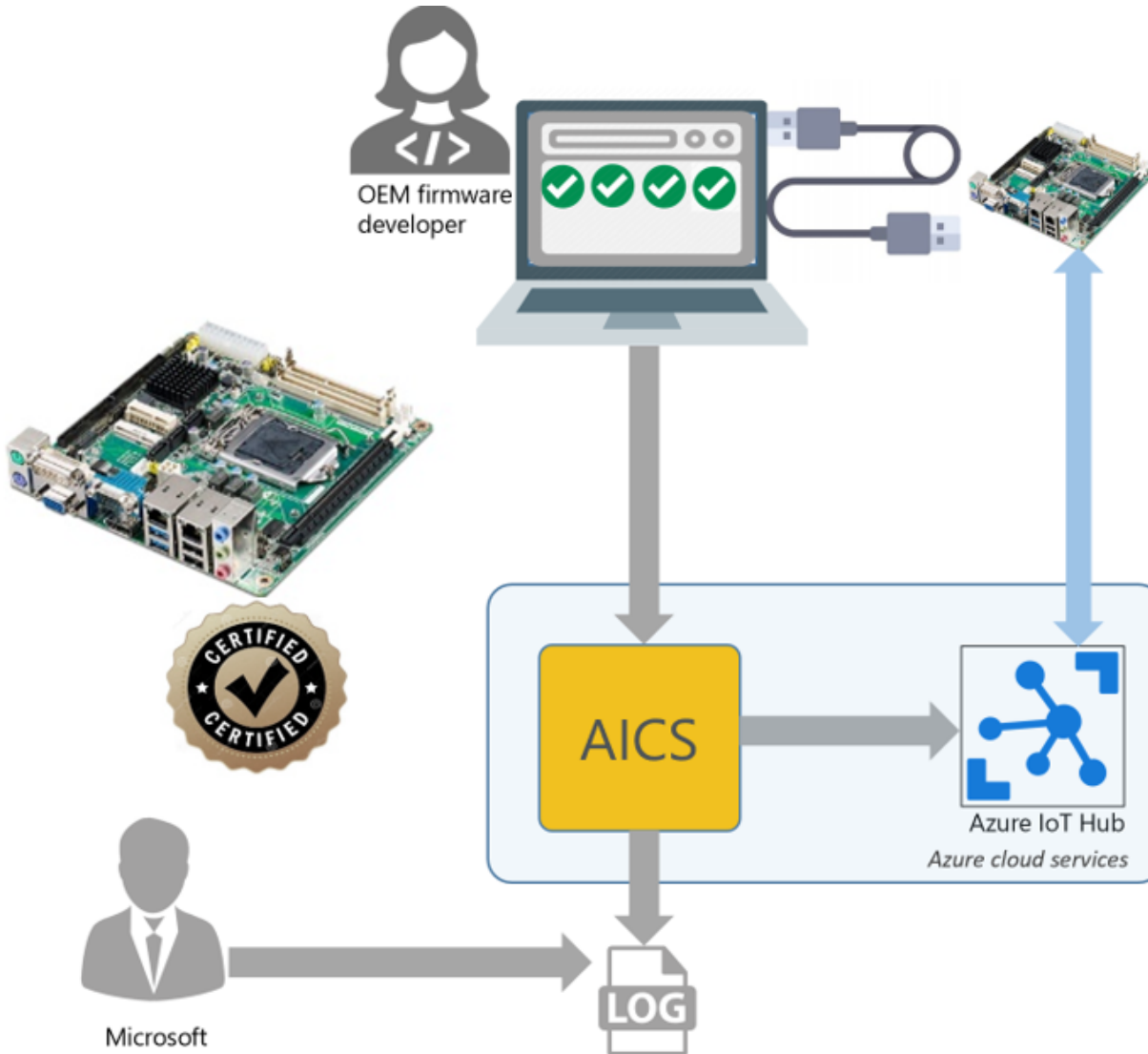
New device catalog landing page

Coming with PnP GA

[Device Catalog]
- FE/BE Code rewrite
- FE UX improvements: Search, SEO, Page load..
- Featured devices
- Badged experiences
- Integration with Azure Marketplace
- Match make with App template with IoT Central

Azure Certified & IoT Plug and Play

The Azure Certified for IoT devices will move to leverage IoT Plug and Play beginning with public preview ("Certified-Ready" submissions)

Bar for certification raises the bar on out-of-the-box functionality and overall Azure IoT compatibility guarantees

Device builders will connect their real device, with working firmware, to the Azure IoT Certification Service (AICS).

Each IoT Plug and Play interface (telemetry, properties, commands) will be verified by AICS

Once certified, firmware and capability model will be made available to solution builders evaluating or purchasing a certified device

PnP baseline cert requirements for Public Preview

- Adoption of the PnP Device SDK
- Pre-installation of the PnP capable device code (FW code) on the device
- DPS support: X.509 cert, symmetric keys, and TPM attestations
- Implementation of common interfaces:
  - DeviceInformation interface (Namespace: http://azureiot.com/DeviceManagement/)
  - ModelDefinition interface (Namespace: http://azureiot.com/ModelDiscovery/)
- IoT Central requirements and validations

Quick portal demo

Thank you