Artificial Intelligence on the Edge

Industrial AI IoT Gateways

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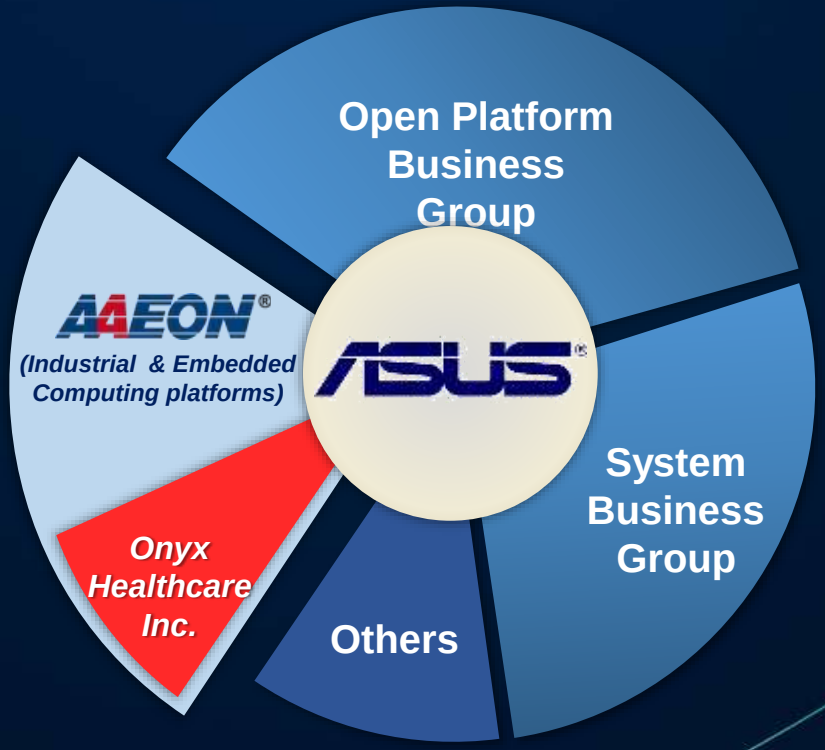

The Industrial IoT company of ASUS

- Worldwide Industrial PC manufacturer since 1992
- Growing and stronger presence in Europe
- Solid expertise with any kind of standard form factor
- From board to system level solutions
- Strong at customizations
- Committed to innovation
- Focused on Industrial AI IoT

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www.industrialgateways.eu

www.aaeon.eu

Our Mission

Spreading Intelligence In The Connected World

INTELLIGENCE / INTELLIGENT

where we are going

INDUSTRY / INDUSTRIAL

where we come from

IOT

where we are

Smart Manufacturing

Smart City

Safety & Security

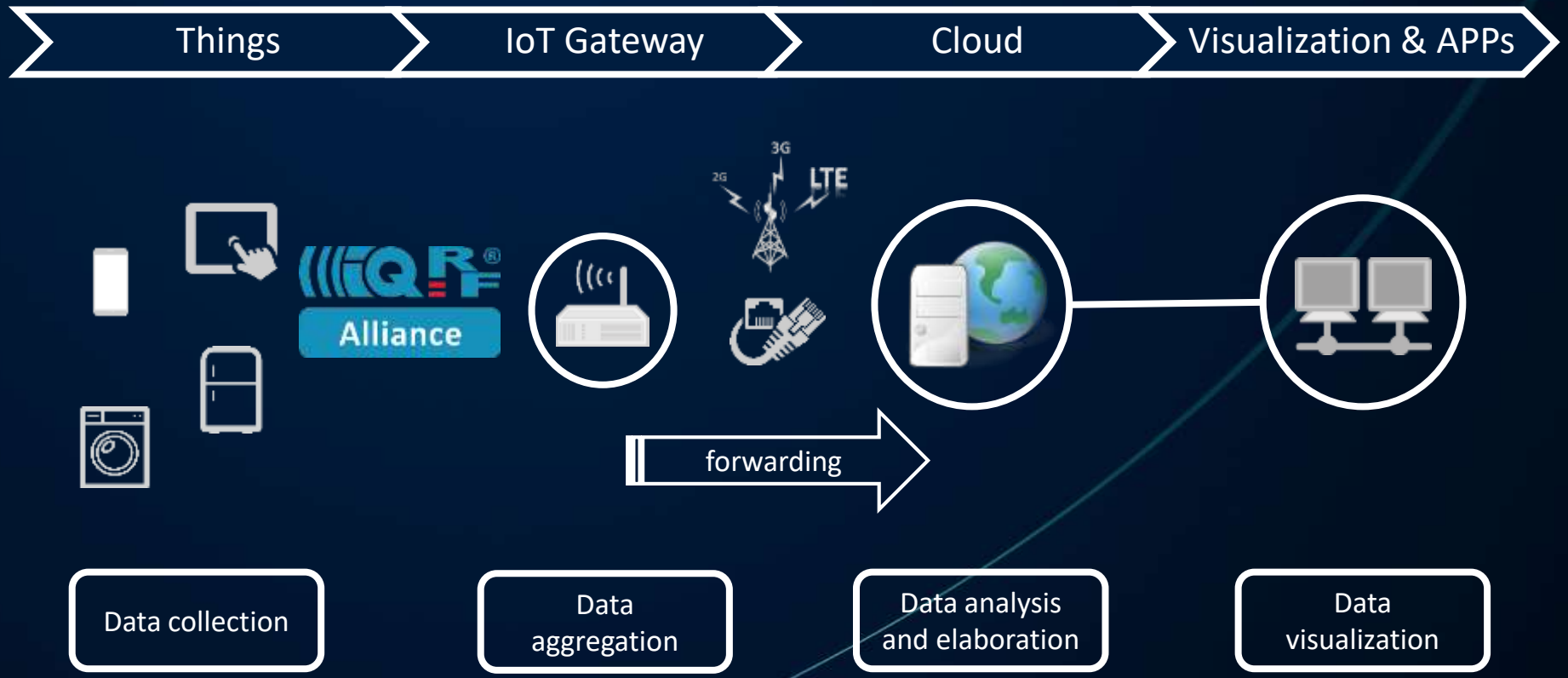
AI

AAEON

Smart Retail

Smart Healthcare

Classic IoT application pattern



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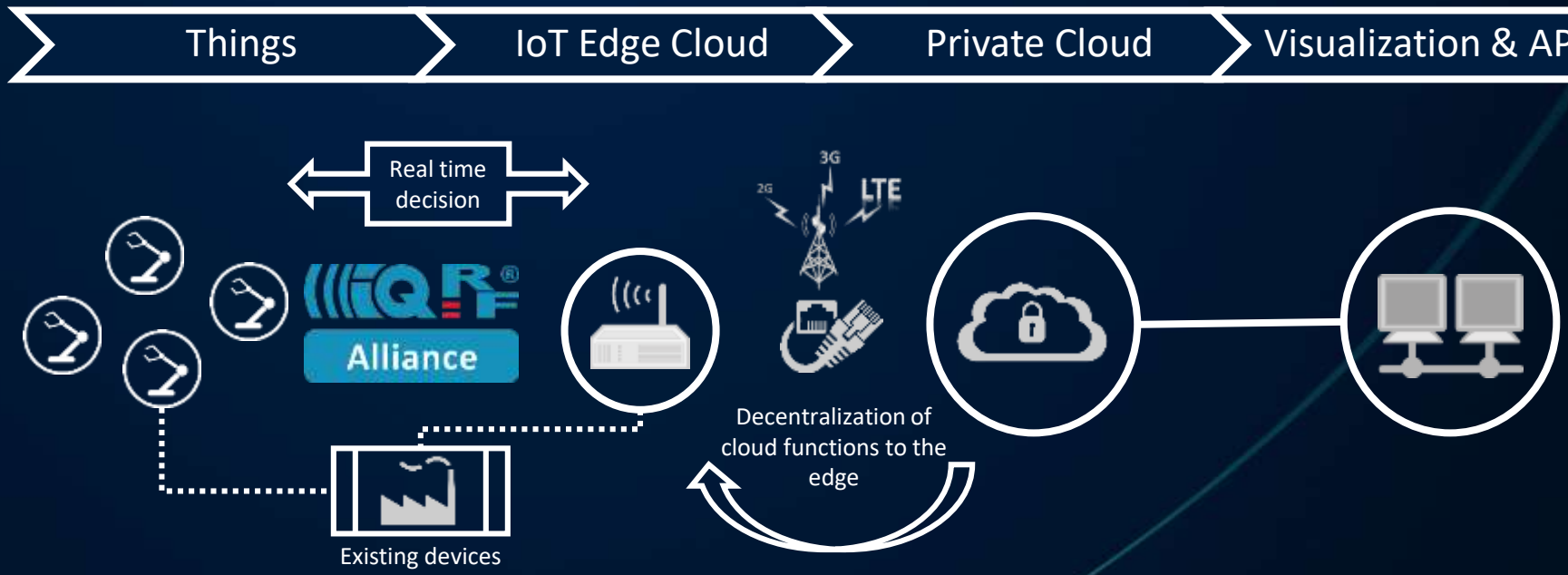
DECISIONS CANNOT ALWAYS BE TAKEN IN THE CLOUD

WE NEED ARTIFICIAL INTELLIGENCE ON THE EDGE

Artificial Intelligence Industrial IoT application pattern



Why customers need a different approach?

- “Need faster, cheaper and smarter approach than the traditional one”
- “Inefficiencies can be eliminated only if fully detected and identified”
- “Need to contain this “data deluge”, transferring only the information that matters instead of raw streams of sensor data”
- “Want to keep customer’s sensitive data into a controlled private environment”

Bring Cloud to the edge for the Industry 4.0

- **More efficiency**
  - Reduce unplanned downtime
  - Improve work safety
  - Improve assets performances

Cheaper and more robust network

- Reduce bandwidth usage
- Overcome network latency problem
- Mitigate network outage issues
- Reduce the risk of losing predictive maintenance and process optimization functions

More security

- Operate offline into a private and closed network
- Select and Secure data before sending them out - local authentication and cryptography

AI IIoT Edge Cloud benefits

Decentralized decision making, a design principle of the Industry 4.0 concept

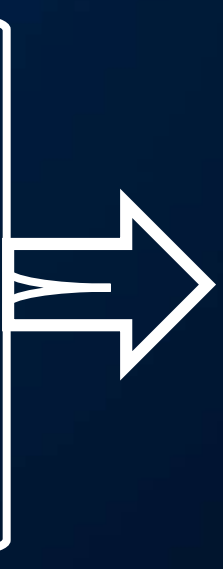
- Able of advanced on-device processing beyond the data storage, buffering and communication
- Real time operations/reactions into perimeter network allows to dynamically apply tactical decisions and modification into the process
- Availability first and immediate analysis of massive amount of data, which grows with the growth of available sensing solutions
- Artificial intelligence and machine learning functions at the edge

IIoT Edge Cloud: outlooks and predictions

- In 2017, 10% of enterprise generated data was processed on the edge. It is going to reach 50% by 2022
- IDC™ research forecasted the IT departments to spend up to 18% of total budget on edge infrastructure by 2020
- MarketsandMarkets™ research on Edge computing market revealed the global edge computing market is expected to reach USD 6.72 billion by 2022 at a compound annual growth rate of a whopping 35.4 percent

Edge cloud concepts when building a gateway

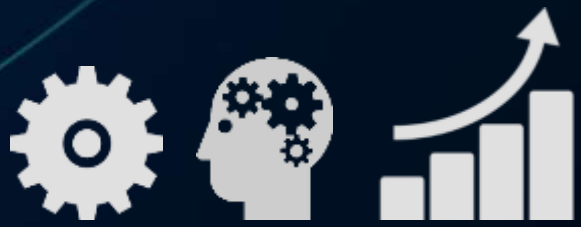
- More computational power
- Low power consumption
- Limited resources (processing and costing)
- Decentralized cloud functions
- Real time decision at the edge
- Reliability and robustness



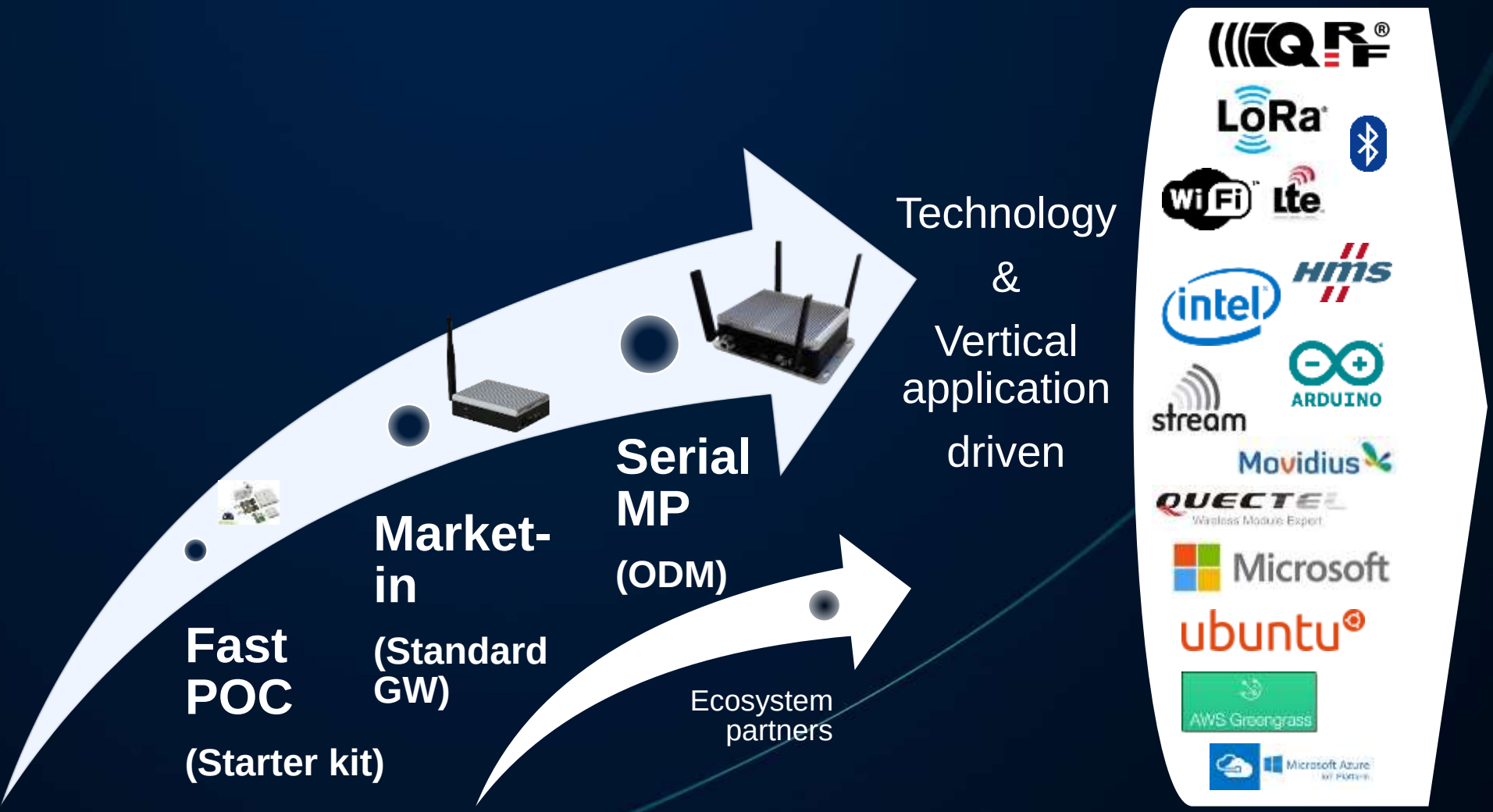
- Efficiency (Gflops/W)
- Reasonable Cost
- Industrial Grade Architecture

AAEON Europe AI IIoT strategy

- Industrial AI IoT gateways for advanced edge computing
- Innovation oriented devices
- Technology-ready solutions
- Robust and flexible platforms
- Multi service platforms able to link legacy with new applications
- Focused on verticals
- Scalable solutions



AAEON Europe's Approach



IQRF Industrial IoT Solution line

IP68 Outdoor IQRF Edge Gateway

Indoor IQRF Edge Gateway

IQRF Starter Kit

4G Automation Edge Gateway

Artificial Intelligence Edge Gateway

IP68 Outdoor 4G LoRa Edge Gateway & Network Server

IIoT LoRA Edge Gateway & Network Server

4G LoRa Edge Gateway & Network Server

Ready edge IQRF solutions

UP IQRF IoT Starter Kit

The purpose of the UP-IQRF IoT Starter Kit is to enable you to build your complete IoT solution from sensors and actuators, through a gateway up to different clouds and mobile apps just in a matter of a couple of hours.

Afterwards, you will be able to extend your network with ready IQRF interoperable devices and use your solution for proof-of-concept projects.

Specification of Gateway:

- Intel® ATOM™ x5-Z8350 CPU 64 bits 1.92GHz
- 2 GB / 4 GB DDR3L RAM
- 16 GB / 32GB eMMC
- Microsoft Windows 10 Pro / Home / IoT Enterprise • Microsoft Windows 10 IoT Core • Linux • Android

IQRF IoT Edge indoor Gateway

- Project-based availability
- Intel® Apollo Lake SoC Pentium E3950, 8 GB LPDDR4 memory, 64 GB eMMC Storage
- IQRF module on board
- Optional Artificial Intelligence neural network module Movidius Myriad X
- 2 x Gigabit LAN,1 x HDMI, 1x DP, 3 x USB 3.0, 1 x USB 3.0 OTG
- Ubuntu image pre-loaded
- CE RED certified system (on request)

IQRF IoT Edge outdoor IP68 Gateway

- Project-based availability
- Intel® Apollo Lake SoC Pentium E3950, 8 GB LPDDR4 memory, 64 GB eMMC Storage
- IP68 protection rate
- Operating temperature from -20C to +70C
- IQRF module on board
- Optional Artificial Intelligence neural network module Movidius Myriad X
- 2 x Gigabit LAN,1 x HDMI, 1x DP, 3 x USB 3.0, 1 x USB 3.0 OTG
- Ubuntu image pre-loaded
- CE RED certified system (on request)

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Open Edge Gateway from Logimic