Artificial Intelligence on the Edge

Industrial AI IoT Gateways

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ASUS Group

- 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
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
Classic IoT application pattern

Things | IoT Gateway | Cloud | Visualization & APPs

Data collection | Data aggregation | Data analysis and elaboration | Data visualization

forwarding
DECISIONS CANNOT ALWAYS BE TAKEN IN THE CLOUD

WE NEED ARTIFICIAL INTELLIGENCE ON THE EDGE
Artificial Intelligence Industrial IoT application pattern

Things

- Data collection + actuation

IoT Edge Cloud

- Data collection
- Data aggregation
- Real time decision
- Decentralization of cloud functions to the edge

Private Cloud

- Data analysis and elaboration

Visualization & APPs

- Data visualization
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

- **Fast POC (Starter kit)**
- **Market-in (Standard GW)**
- **Serial MP (ODM)**
- **Ecosystem partners**
- **Technology & Vertical application driven**
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, 1 x 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 -20°C to +70°C
- 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)
Open Edge Gateway from Logimic

Industrial Solution

Bundle of UP Squared board with Open Edge Gateway software with guaranteed reliability, performance and technical support. Product launch in May 2019.

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