



# AAEON IQRF Solution : When AI meets IQRF

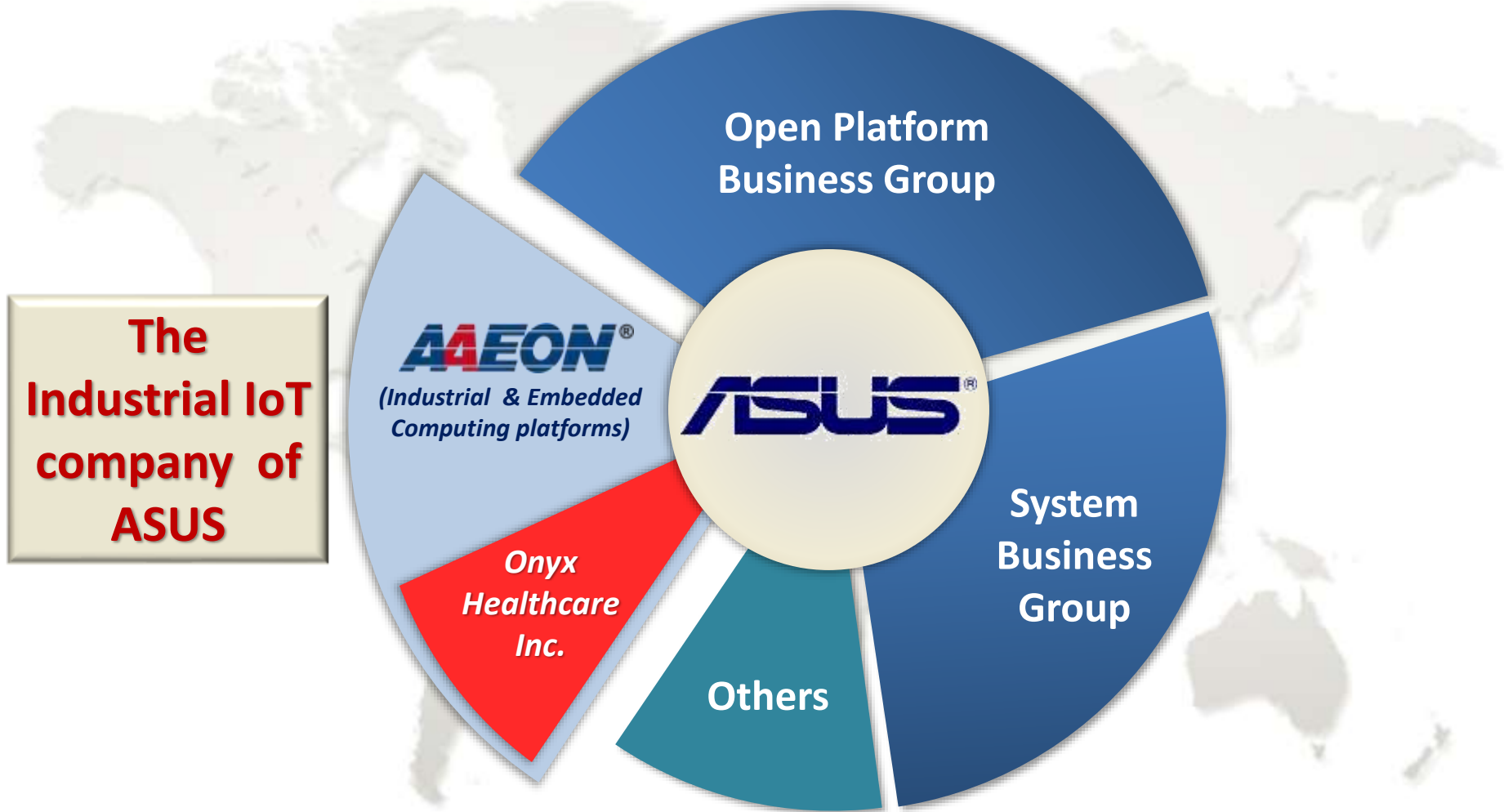
*Spreading Intelligence in the Connected World*

**AAEON @ IQRF 2018 Summit, Prague**

*Presenters : Fabrizio Del Maffeo, VP & Managing Director AAEON Europe, UP Founder  
Daniele Cleri, Senior Software Architect*

# ASUS® Group

**A4EON®**  
an ASUS assoc. co.



# AAEON Worldwide Offices







# AAEON's Mission

Spreading Intelligence In The Connected World





# ARTIFICIAL INTELLIGENCE ON THE EDGE



## Intelligent Retail

- POS & Mobile POS
- Mobile Payment
- Smart Vending
- Digital Signage &
- KIOSK



## Intelligent Manufacturing

- Industrial Robot
- Machine Vision
- Digital Factory
- Logistics & Warehousing



## Intelligent Transportation

- In Station Facility
- In-vehicle Signage & Security
- Ticketing Machine
- Gas Station & Electric Charging Station



## Intelligent Security

- NGFW / UTM
- SDN/NFV/vCPE
- VPN/VM
- Network Appliance
- Video Surveillance



## Intelligent IOT

- Commercial Robot
- Machine Learning
- Drones
- Computing Vision
- Internet of Things

IoT Platform + Solution

# IIoT Solution line



Smart city IP68  
Edge Gateway



Indoor 4G  
Edge Gateway



Starter Kit





# Starter kit

- Status: Available in IQRF market place and UP Shop
- Pricing: USD 379
- Value Proposition:
  - Easy startup with IQRF technology
  - Complete solution HW + SW
  - Worldwide delivery in 3 days
  - Supported by UP Community
  - Same Hardware of IOT Indoor Gateway
- Part Number : RE-UP-PACK-IQRF-001



# 4G Automation Gateway

- Status: sample ready
- Pricing: USD 369
- Value Proposition:
  - High Performance Off-the-shelf IQRF Edge Gateway
  - Intel QuadCore Atom x5-8350, 2GB RAM, 32 GB eMMC onboard
  - Supports of IQRF/4G
  - Complete solution HW + SW
  - Worldwide delivery in 3 days
  - Same Hardware of IQRF Starter Kit
  - RED Certified
- Part Number: AIOT-IGWS01-A20-N001  
(AIOT-IGWS01-A20-CA40232+Quectel.EC25-E+IQRF)





# Smart City IP68 Gateway

- Status:
  - SGS IP68 passed, Finalizing QA test
  - MP expected by June, 8 weeks)
- Pricing: 789 USD
- Value Proposition :
  - Off-the-shelf IP68 High Performance IQRF Edge Gateway
  - Intel QuadCore Atom E3940, 2GB RAM, 32 GB eMMC
  - Supports of IQRF/4G/Wifi/Bluetooth
  - Complete solution HW + SW
  - Option for Power over Ethernet
  - Perfect fit for Smart city applications
  - Powered by UP Squared, the board adopted by Intel for IOT projects (<https://software.intel.com/en-us/iot/hardware/up-squared-grove-dev-kit>)
  - RED certified



# THE EVOLUTION OF THE “THINGS”

Connected  
Interconnected  
Autonomous  
Intelligent





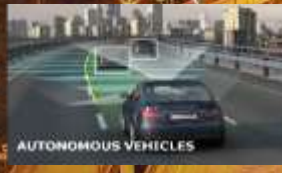
# DECISIONS CANNOT ALWAYS TAKE IN THE CLOUD

CONCERNS:

Security

Latency

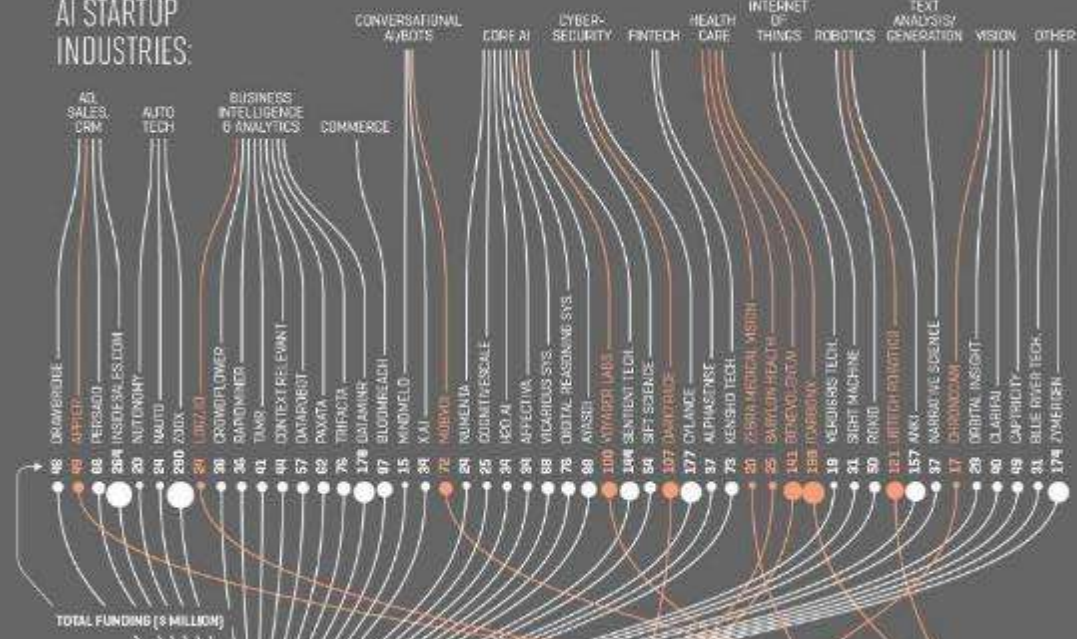
Robustness



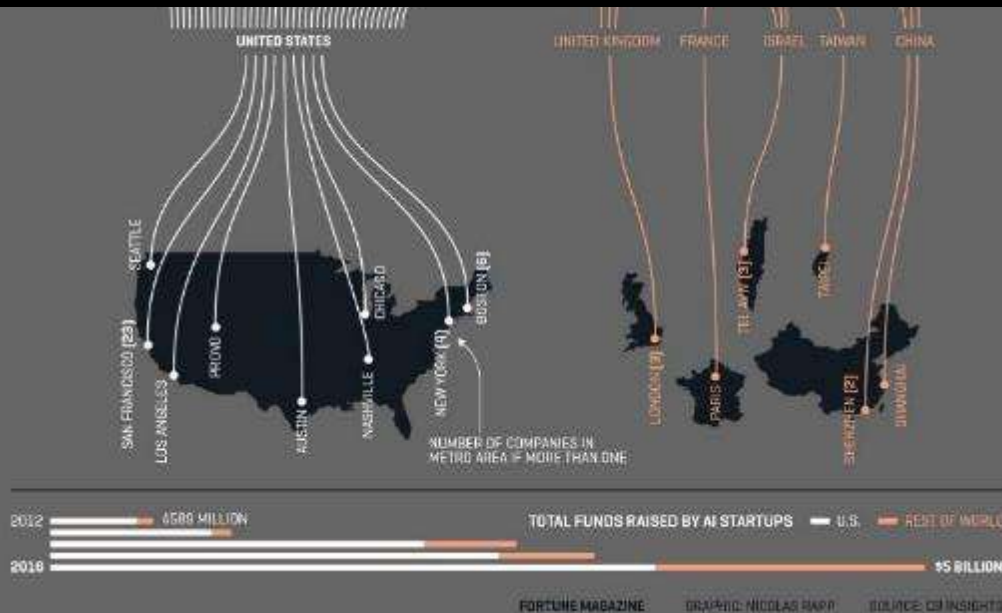
# WE NEED ARTIFICIAL INTELLIGENCE ON THE EDGE

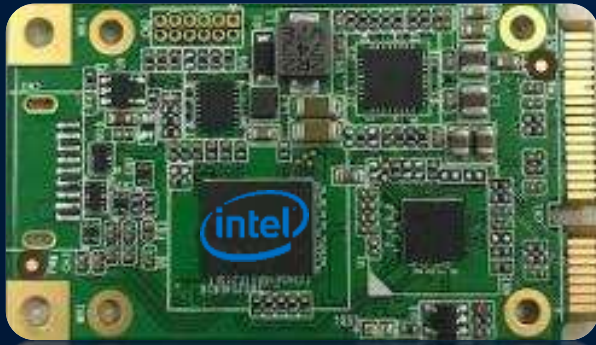


## AI STARTUP INDUSTRIES:



## UNIQUE MOMENT FOR A.I.





## AI Core



THE FIRST NEURAL NETWORK ACCELERATOR ON Mini-PCIExpress

# AI Core

Hardware Neural Network

Optimized for Machine Learning and Real Time  
Pattern Recognition

Support of Tensor Flow & Caffe software

Compatible with all x86 computers with  
mPCI-Express slot

Fully compatible with  
Intel Neural Compute Stick  
(NCS )software suite



## AI Core

mPCIe expansion board

Intel MOVIDIUS™ Myriad 2  
Video Processing Unit

Deep Learning Edge Accelerator

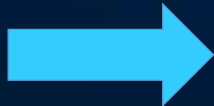
Ultra Low Power



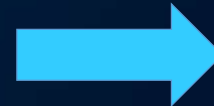
# AI Core



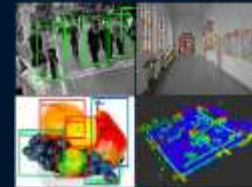
Create your  
model with  
Caffe or  
TensorFlow



Train Your  
Model  
in the Cloud



bridge  
the gap



Deploy it in the  
Field on AI Core

# (((QRF)))<sup>®</sup> + AI Edge Solution line



## Development and deployment on the same hardware

Sensors and Actuators driven by predefined logic





# Adding Intelligence on the Edge

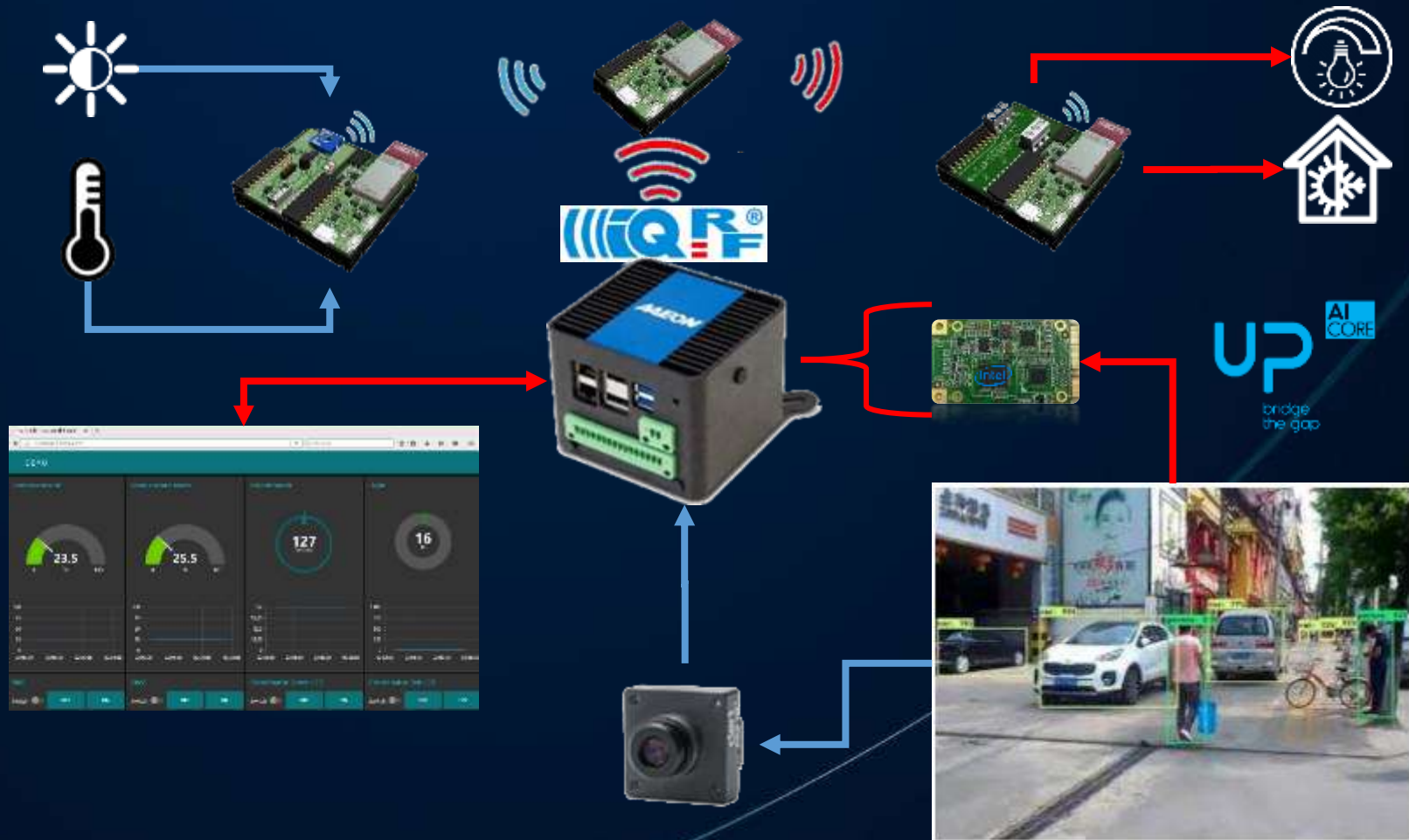
Adding a Vision camera and AI Core to an Edge Gateway → AI VISION

## AI VISION

applications can analyze and provide AI enhanced real time information into our Edge Gateways



Sensors and Actuators logic is enhanced by AI Vision



# **A4EON**<sup>®</sup> A.I. Ecosystem



Software partner in each country to enable AI on the Edge





See you on  
[www.Industrialgateways.eu](http://www.Industrialgateways.eu)  
&  
[www.up-board.org](http://www.up-board.org)