Partner Presentation
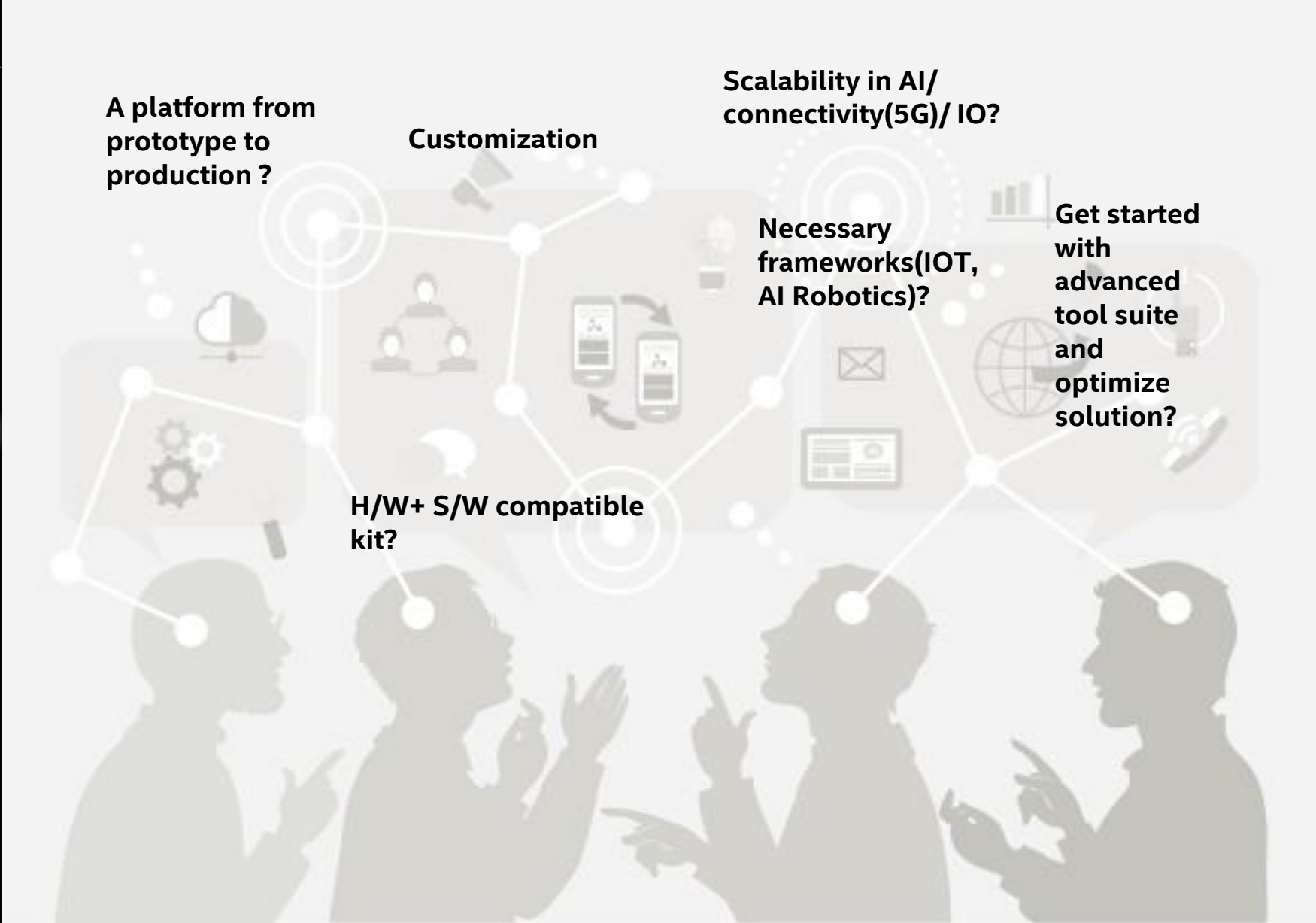
5G-Ready Platform Delivers Versatility and Scalability for AI

Owen Wei and Daniele Cleri, AAEON Technology

AAEON®
an ASUS assoc. co.

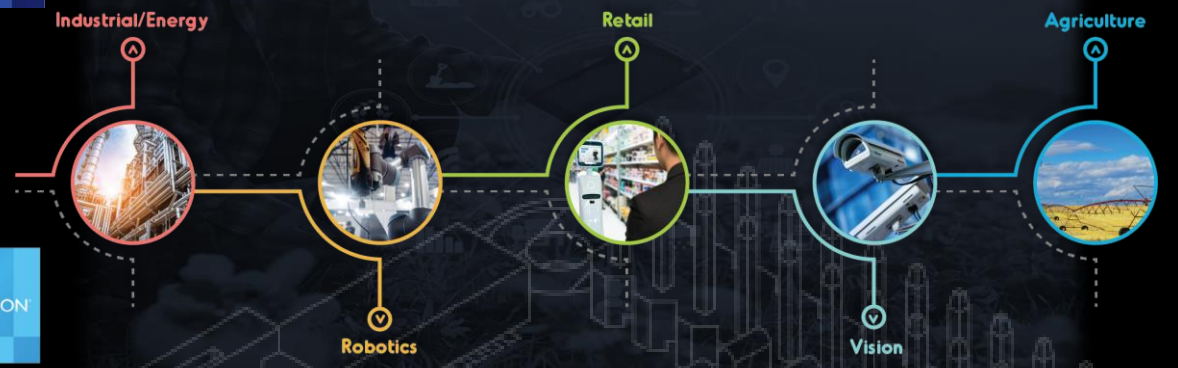# Challenges in Today's Edge Solution Development

12 moth+

Development time

A platform from prototype to production ?

Customization

Scalability in AI/ connectivity(5G)/ IO?

Necessary frameworks(IOT, AI Robotics)?

Get started with advanced tool suite and optimize solution?

H/W+ S/W compatible kit?

www.up-board.org

UP
bridge the gap

UP Squared 6000

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Fast:
- 40% CPU performance improvement
- 2x Graphic Performance enhancement
- High speed storage support (NVMe via M.2 2280)
- **3x 1GbLAN, 1x 2.5Gb LAN(i225 via main and carrier board**
- 5G connectivity up to 20Gb/s.

Industrial:
- Real-time: Intel® Time Coordinated Computing (Intel® TCC) and Time Sensitive Networking (TSN)
- Industrial I/O: serial ports + **40-pin GP-bus on board + 40-pin GP-bus on Carrier Board**
- Hardware TPM 2.0 onboard, IBECC
- Operation temp -20-70 °C (Supply in industrial sku based on project)

Expandable:
- Multiple M.2 expansions(**M.2 2230, M.2 2280, M.2 3052**) to serve different purposes
- **Mini PCIe expansion** via carrier board
- 100-pin docking for the carrier board

* Datasheet will be available soon

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Expansion options

M.2 slots available

intel MOViDIUS™

Add VPU via UP AI Core XM2280 via **M.2 2280**

Add Wi-Fi and Bluetooth via **M.2 2230**

Wi Fi
Bluetooth

Add 5G capabilities via **M.2 3052**

Carrier Board 100-pin slot available

Expandable via UP Squared 6000 Carrier board (CB)

- Add programmable 40-pin, CAN, extra **2x Gb LAN, mPCIe**, audio jack line, serial ports and more...via **100-pin slot**

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UP Xtreme i11

UP Xtreme i11
Edge Compute Enabling Kit

intel

Target Markets:

- Robotics
- Automation
- Retail
- Vision
- HealthCare

Download Datasheet

UP Xtreme i11 Edge Compute Enabling Kit

The latest 11th Generation Intel® Core™ Processor with Intel® Iris™ Xe Graphics Family, multiple video ports, and industrial IO. With both VNNI instructions (CPU) and up to 96EU (GPU), you can run AI inferencing algorithms on the CPU and/or GPU.

- 12V DC input
- Operation temp -20-70 °C (Supply in i7 sku based on project)
- Up to 4x 4k60 HDR independent display ports
- 5G, Real-time: Intel® Time Coordinated Computing (Intel® TCC)/TSN, TPM 2.0 and In-band ECC
- **4x USB 3.2, 1x USB 4.0 Type-C**
- **1 x 1GbLAN (i219), 1x 2.5Gb LAN (i225)**
- **M.2 2230, M.2 2280, M.2 3052 slots, PCIE Gen4 [x4] slot**

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- POWERFUL
- FAST
- EXPANDABLE
- INDUSTRIAL & SECURE
- AI READY
- PRODUCTION-READY COMPUTING SYSTEM

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UP Xtreme i11

Expansion options

M.2 slots available

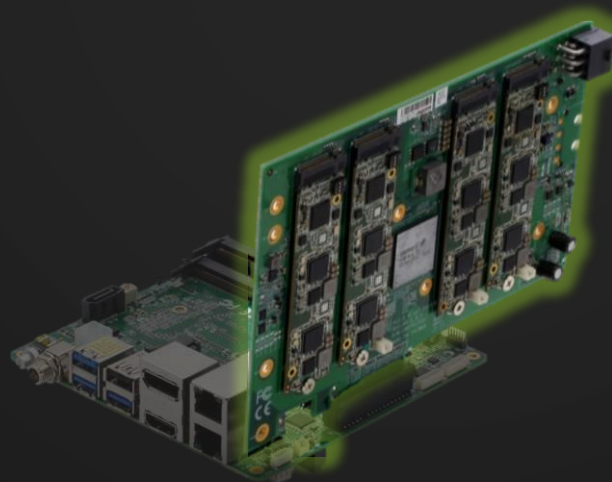Add VPU via UP AI Core XM2280 via **M.2 2280**

Add Wi-Fi and Bluetooth via **M.2 2230**

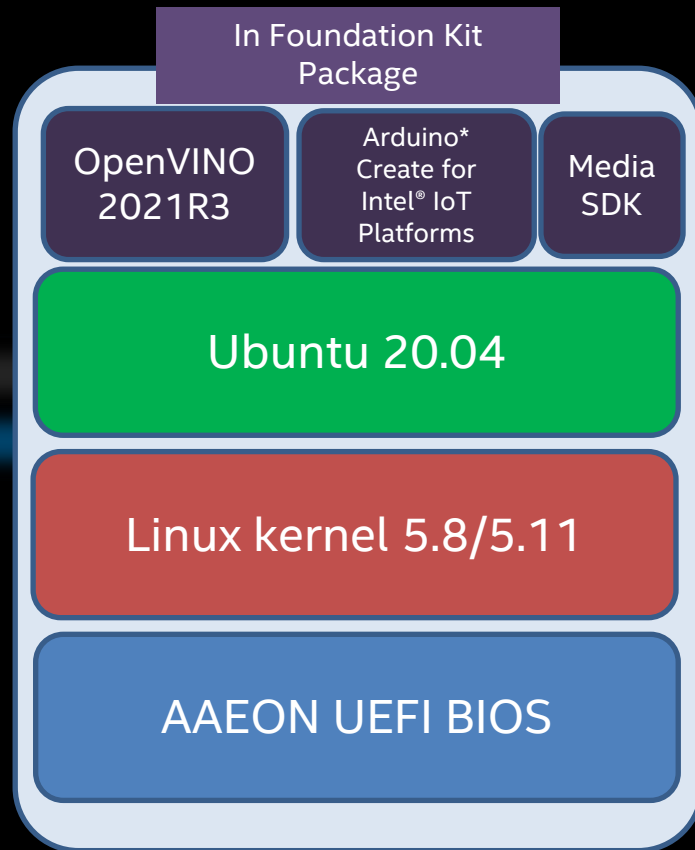Add 5G capabilities via **M.2 3052**

PCIe Gen4 [x4] slot available

Up to 8x Intel® Movidius™ Myriad™ X by adding UP AI Core XP8 via **PCIe Gen4 [x4]**

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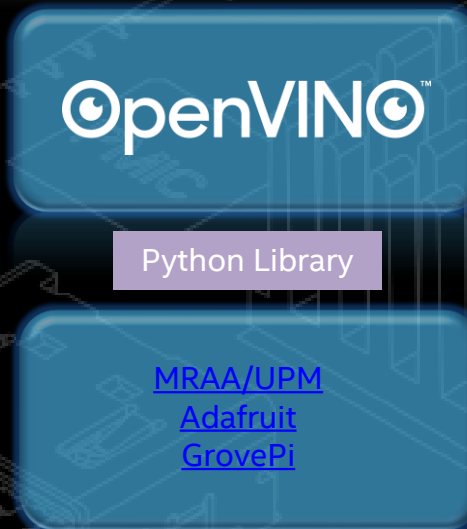# Intel® Edge Insights for Vision Development Kit Software Specifications

In Foundation Kit Package

OpenVINO 2021R3	Arduino* Create for Intel® IoT Platforms	Media SDK

Ubuntu 20.04

Linux kernel 5.8/5.11

AAEON UEFI BIOS

Additional Community SW Support

yocto PROJECT

Windows 10 SDK

Frameworks & Libraries
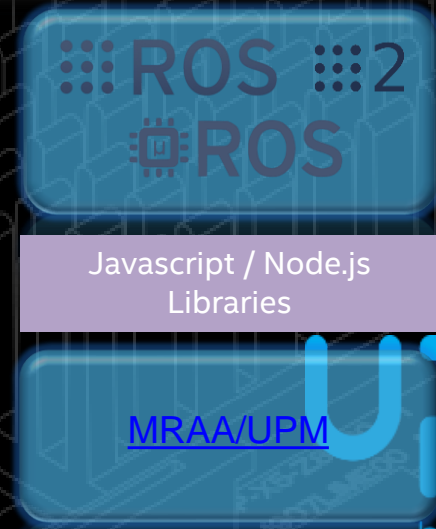
IoT Frameworks

balena

MENDER

FOUNDRIES.IO

AI Frameworks

OpenVINO™

Python Library

MRAA/UPM
Adafruit
GrovePi

Robotics Frameworks

ROS 2
ROS

Javascript / Node.js Libraries

MRAA/UPM

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Solving Challenges for Edge Solution Development

AAEON Edge Solution Foundation Kit

Pre validated and optimized HW platforms

Development-ready, reusable containerized SW package

Ready to use embedded system for rapid customization

Accelerate *Time to Market*

Reduce *Development Cost*

Scale With *Robust Edge Portfolio*

Edge use case-specific reference offerings

Complimentary AAEON and ecosystem partner offering

https://up-shop.org/

www.up-board.org

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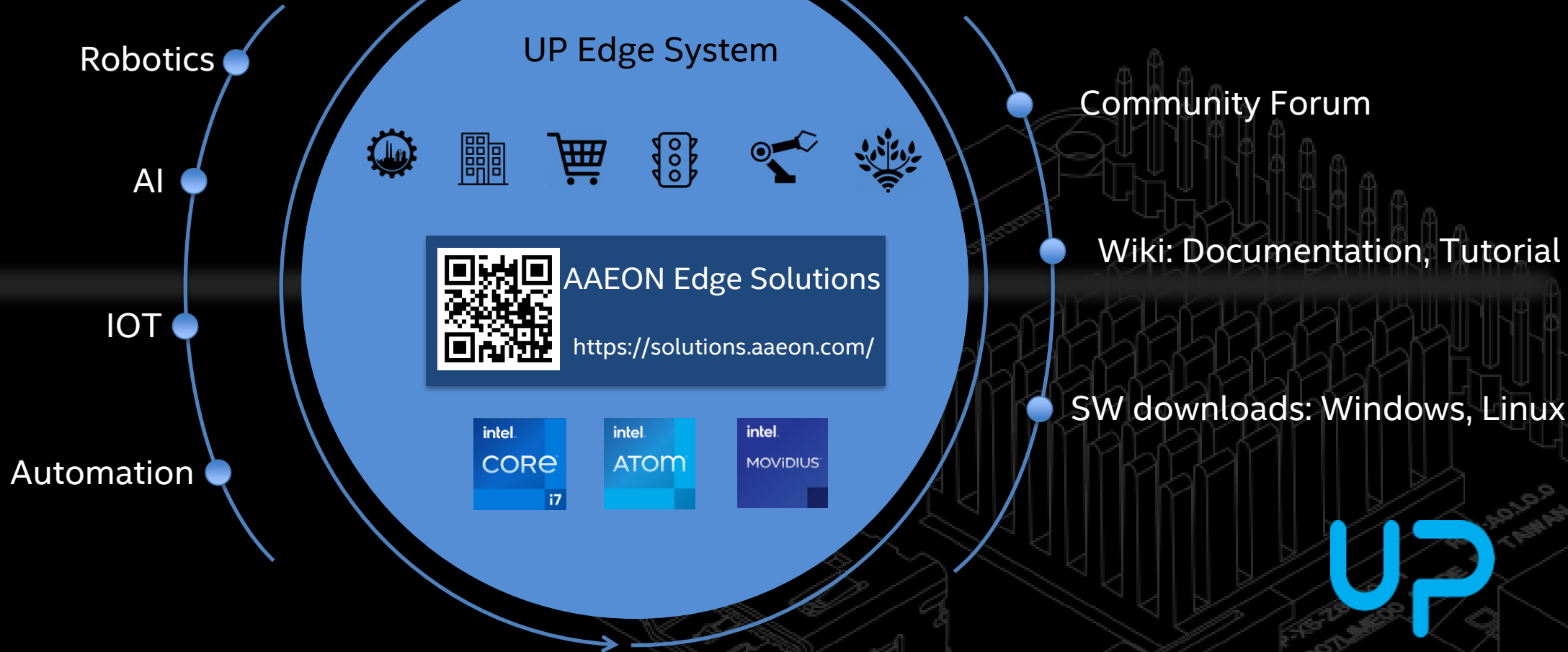
Vertical Markets

INDUSTRIAL AUTOMATION

- Enables Massive Machine-Type Communication (mMTC)
- Ultra-Reliable Low Latency Communication with Enhanced Mobile Broadband (eMBB) via 5G

Logistics

- High computing and graphic capability with low power consumption, perfect for AMR
- Next-generation 5G enabled robotics achieving low latency and seamless solutions
- Workload Consolidation using advanced robotic applications

AGRICULTURE

- Increase agricultural gains by connecting your IoT devices for control and management
- Enhance yield rate through AI vision and use of AMRs
- Improve sustainability of land and livestock by using smart agricultural analytics

SUREVEILLANCE & VISION

- 5G enabled for future Smart Homes and Cities
- Improved applications in AR and 3D Vision performance engines with faster GPU
- OpenVINO for improved AI in Object/intrusion detection, face recognition and monitoring

RETAIL

- Faster and more efficient video analytics to leverage end user's shopping capabilities
- 5G enabled low latency communication for Drone deliveries
- AI and IoT enabled for better logistical operations with automated gateways/kiosks

Smart City

- Future of smart city with 5G to connect all devices to enable orchestration among each connected device and bring disruptive application.
- 5G and AI enable new application such as drone or robots to bring new revenue stream.

AI — IoT — Robotics

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Customer Success Stories

UP Xtreme's customer success stories in Vision AI applications in safety, security, visual animation and film industry

Software Foundation Kit, powered by Intel SoC.

UP Xtreme Edge Compute Enabling Kit

UP Xtreme Edge Compute Enabling Kit, powered by the 8th Generation Ultra-Low Power Intel® Core™ i3/i5/i7/Celeron CPU, is designed to boost your AI on-the-Edge. The kit enables multiple use cases in vertical markets – IoT, automation, retail and robotics. With a measure of 190mm x 129mm x 78.6mm (7.48" x 5.07" x 3.09"), the fanless system delivers a comprehensive feature set and I/O, which allows you to reach astonishing performance. The product comes with Ubuntu Image and a set of software tools to speed up your development process.
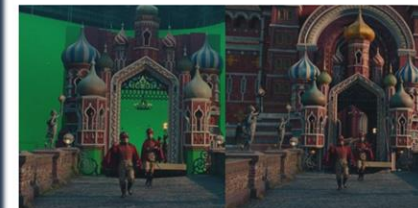
Offload AI workloads from Intel® Core™ CPU and integrated GPU to the optional VPU by selecting the kit configuration with the UP AI Core XM2280, powered by 2 Intel® Movidius™ Myriad™ X.

starting at **$499**

Order Now

Film / TV VFX industry

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Finding the perfect balance between security and efficiency

Check-in and Bag Drop

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Data Reuse in VFX Post Production

Real-time VFX Preview

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Spreading intelligence throughout a digital world

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