

EDGEMATRIX *Edge AI Station*®

Artificial Intelligence Video Analytics Platform



Anytime

24 x 365 support
Realtime / Batch

Anywhere

On-site / On-prem / DC
Indoor / Outdoor

Any use case

Various AIVA are supported
Flexible SI

What is "Edge AI Station" ?

1. **Edge AI platform products to accelerate implementation and deployment of practical videoAI apps**
 - ▶ Edge AI Box – Operates on the EX series, allowing implementation of various video AI apps.
 - ▶ Quick and easy field deployment by porting already developed video AI applications to Edge AI Station.
2. **Supports various functions required for practical/commercial use of "Video Edge AI"**
 - ▶ Various AI-related configuration functions, full device management and operation functions, high security functions, etc.
3. **Implements "video pipeline processing" that maximizes the performance of the "Edge AI Box-EX"**
 - ▶ Multiple cameras and multiple apps operating simultaneously.
 - ▶ Enables the latest AI models to run in a rapidly evolving AI development environment.
4. **Flexible and easy construction of business logic using video AI analysis results**
 - ▶ Transmission of real-time machine control, alerts and periodic reports of analysis results via various communication methods.
 - ▶ Supports snapshot and recording functions with storage to high-capacity devices.
5. **Provided as a product that operates independently on-premise**
 - ▶ Advanced GUI implementation and stand-alone operation without external network connection.
 - ▶ Remote support by EDGEMATRIX (* Internet access and paid maintenance service contract required)



8 Features



Standalone

- ▶ All in one functionality that can operate independently is implemented within the box.
- ▶ No choice of network environment such as Internet connection, closed network, wireless network, etc.



Logic

- ▶ Freely build business logic in Node-RED
- ▶ Send alerts and analysis results
- ▶ Supports various protocols



Integration

- ▶ Implement API for external system integration
- ▶ Integration with building management systems, SCADA, etc. possible
- ▶ Integrated management and operation of multiple Edge AI Stations



Security

- ▶ Data encryption
- ▶ Role-based access control : Admin, Operator, Guest
- ▶ Privacy protection with edge image processing



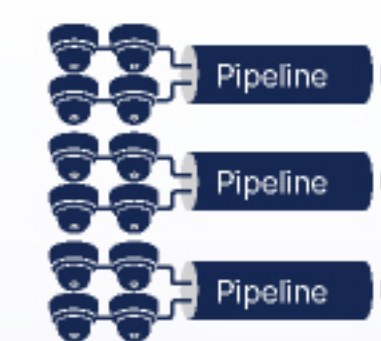
Remote

- ▶ Remote control by various communication functions
- ▶ Remote software updates and various settings
- ▶ Provision of remote support (fee-based service)



Realtime

- ▶ Real-time monitoring by AI
- ▶ Immediate alerts when abnormalities occur
- ▶ Real-time control of machines



Parallel

- ▶ High-speed parallel processing
- ▶ Simultaneous multi-camera (stream) processing
- ▶ Simultaneous multi-application processing multiple apps



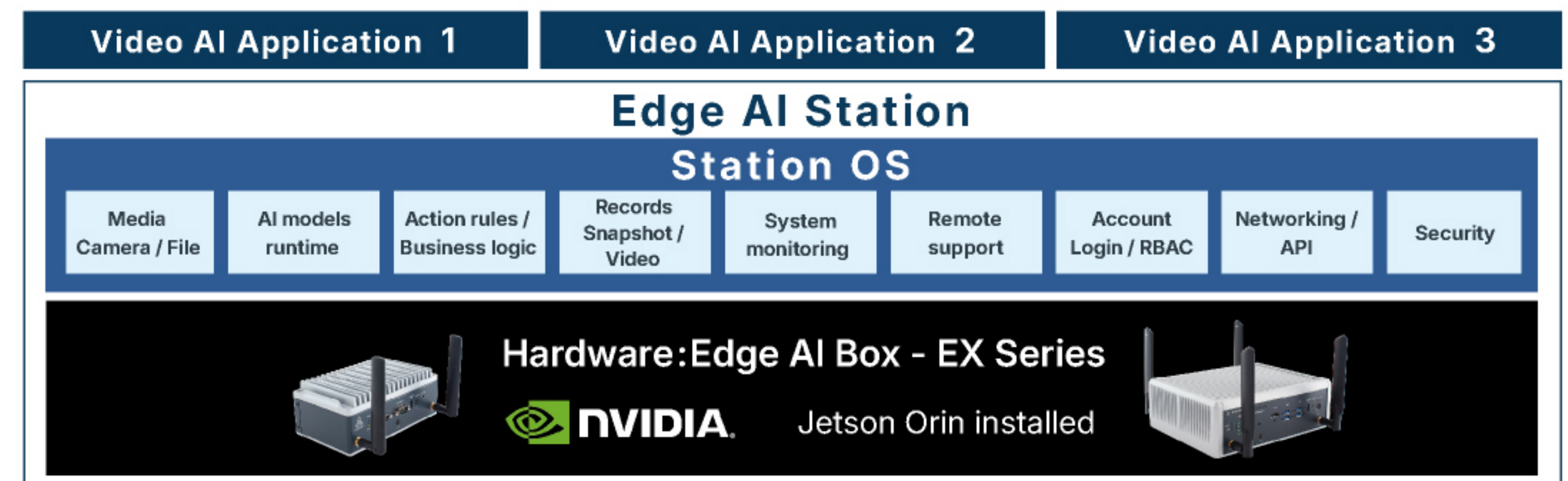
Low cost

- ▶ Reduction of cost (per camera) by simultaneous processing of many cameras
- ▶ Realization of low operating costs through commercialization
- ▶ Edge processing reduces communication costs

Deployment Platform for Video AI Applications

— Edge AI Station = Appliance product with hardware(Edge AI Box-EX) + software(Station OS) —

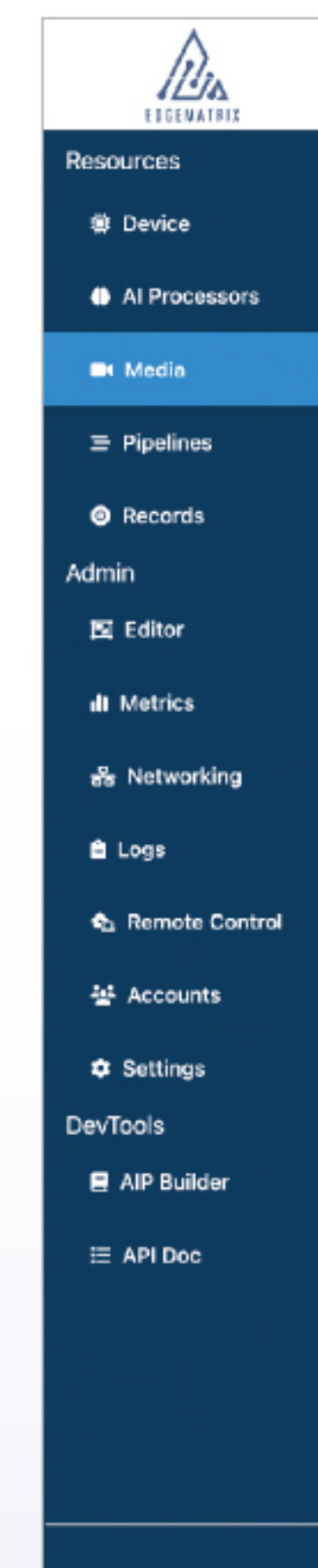
- ▶ High-performance and high-reliability hardware combined with "AI Station Platform (Station OS)" that provides a full range of operational functions focused on deploying video AI applications
- ▶ Station OS enables customers and AI application developer to quickly commercialize their own video AI applications in various fields and installation environments without system development, thereby significantly reducing costs.



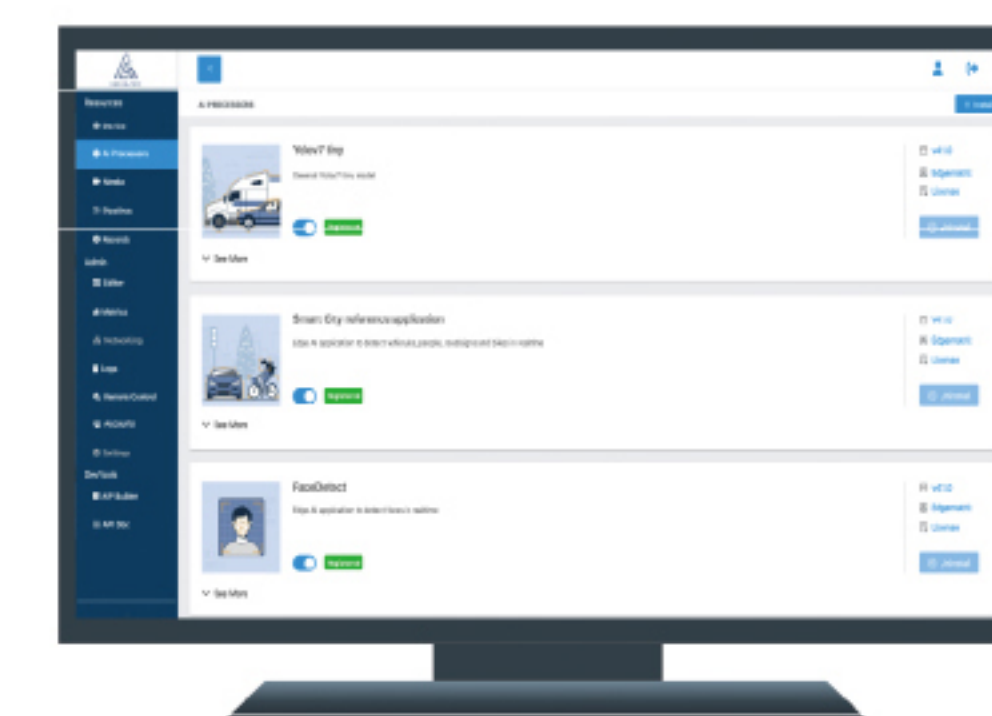
Advanced operational functions and GUI

- ▶ Edge AI Station supports a variety of operational needs
- ▶ Web Server is implemented for easy access to operational functions through an advanced GUI

Screen & Functions(Examples)



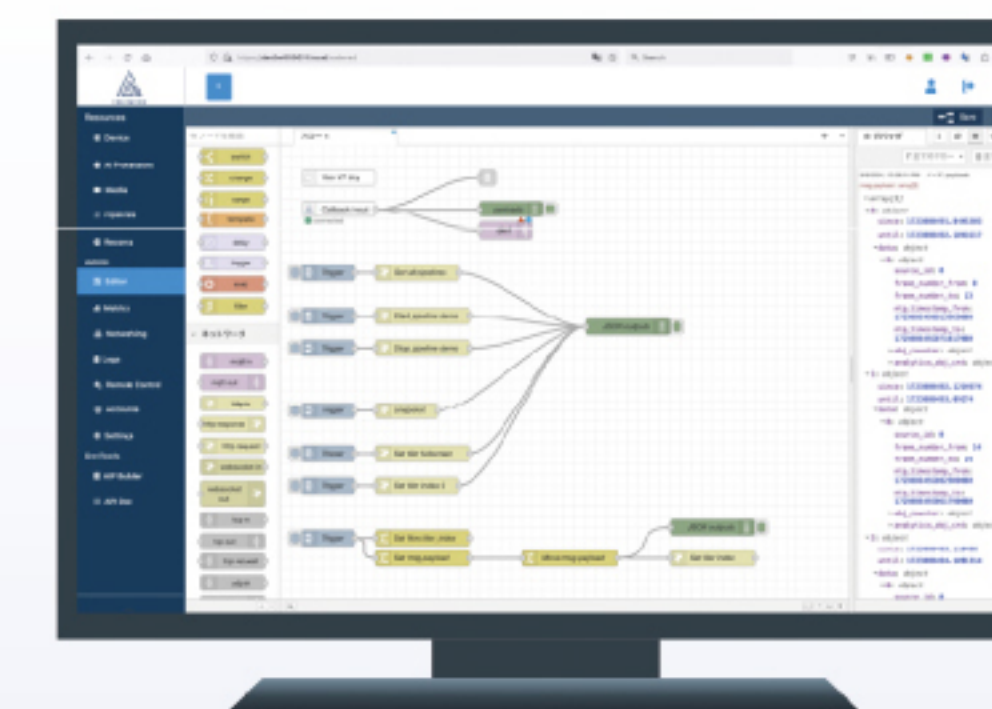
Menu



AI Processor

Application management function

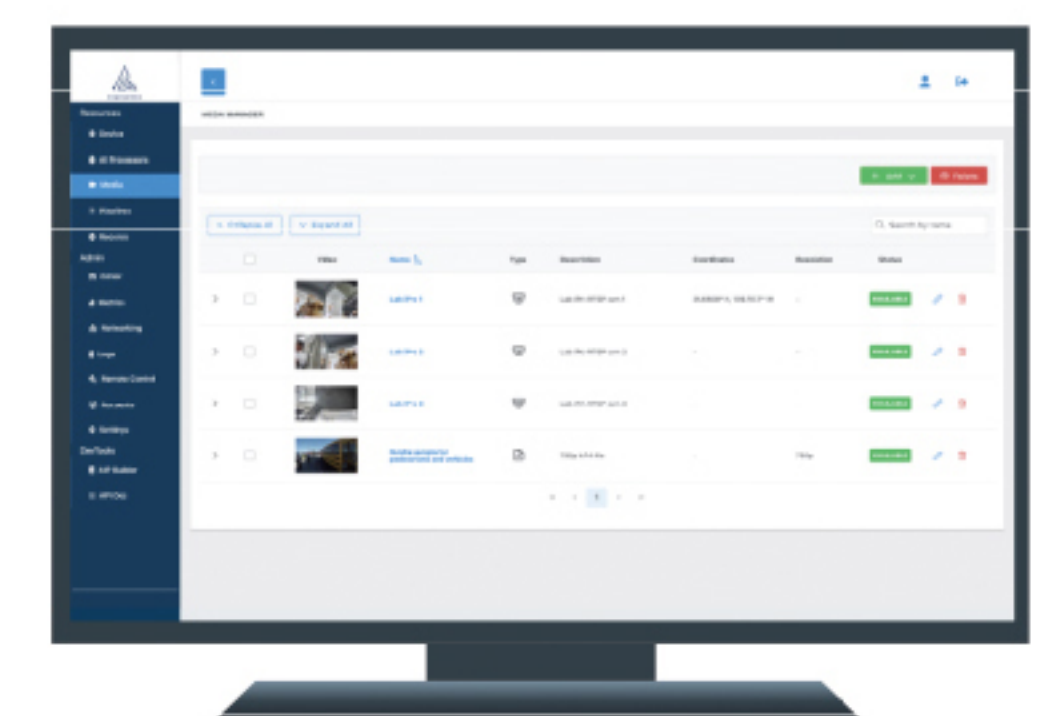
- ▶ Installation and removal of AI applications
- ▶ List of installed AI applications
- ▶ Displaying AI Application Details
- ▶ License management



Editor

Business logic

- ▶ Create business logic with Node-RED
- ▶ Open development environment for Sler / 3rd Party
- ▶ Interfacing with EdgeAIStation's API and other devices using various protocols



Media

Supported Inputs : 3Media

- ▶ IP camera : RTSP
- ▶ Filem : p4,mov,h264,h265
- ▶ USB camera
- (※ Supported sequentially from Sep. 2024 onward)



Metrics

Monitoring of various resources

- ▶ Graphical display of various resource information such as CPU load, GPU load, memory usage, etc.
- ▶ Utilized for debugging, failure analysis, etc.
- ▶ 30-day history can be viewed graphically

New product

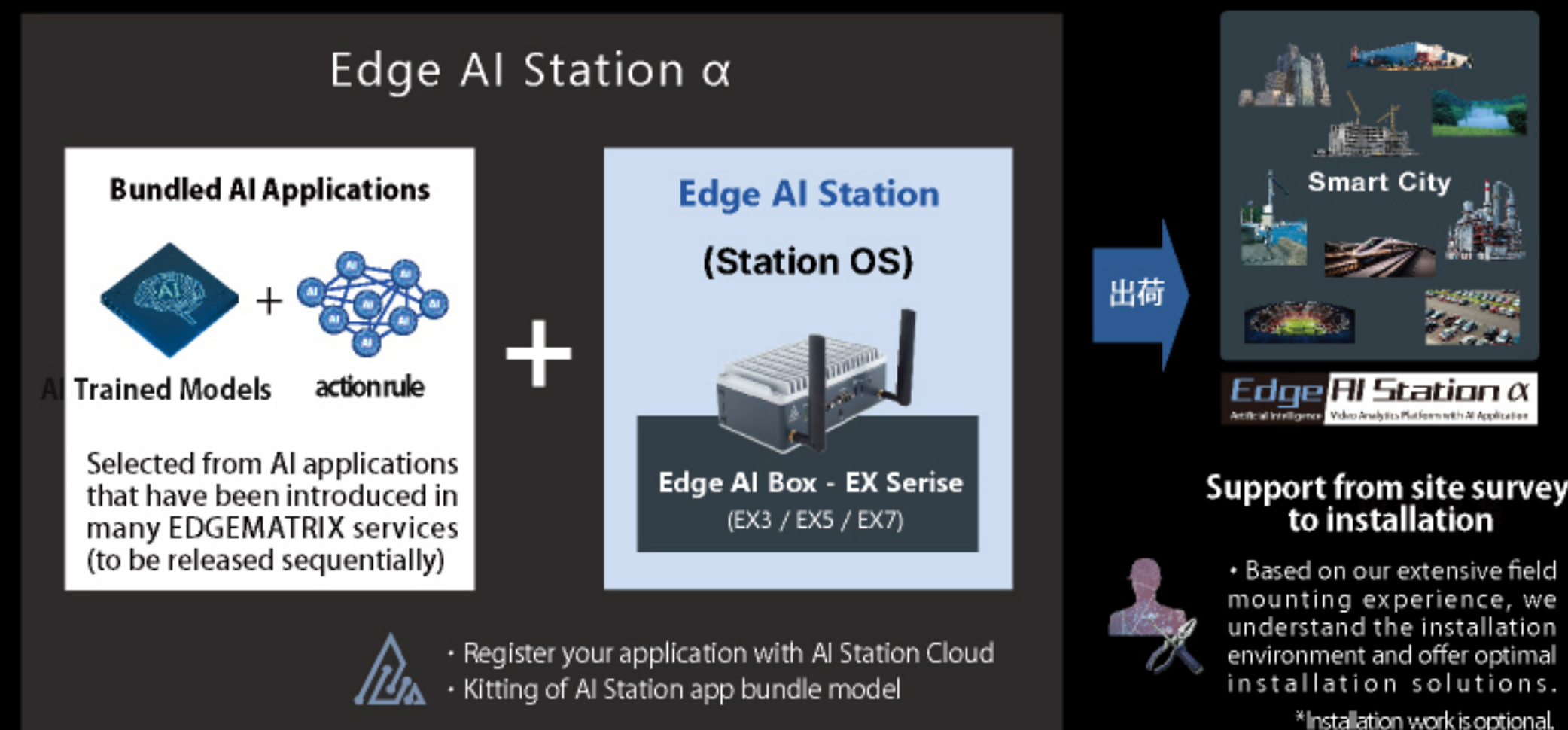
Edge AI Station α

Video AI application bundled AI Station

—Appliance Products—

What is Edge AI Station α

Edge AI Station α is an application bundled turnkey product with practical video AI applications pre-installed on the Edge AI Station. The proven and practical applications for a variety of use cases will be provided, reducing the burden of developing original AI applications and AI models for the use cases to be utilized, enabling rapid implementation and cost reduction.



Multifunctional headcount counting application for a variety of situations and uses

The first EAIS α "Kaleidoscope-equipped model" is now available!



AI Application Overview

A single AI application that detects a person's whole body or head and performs the following functions

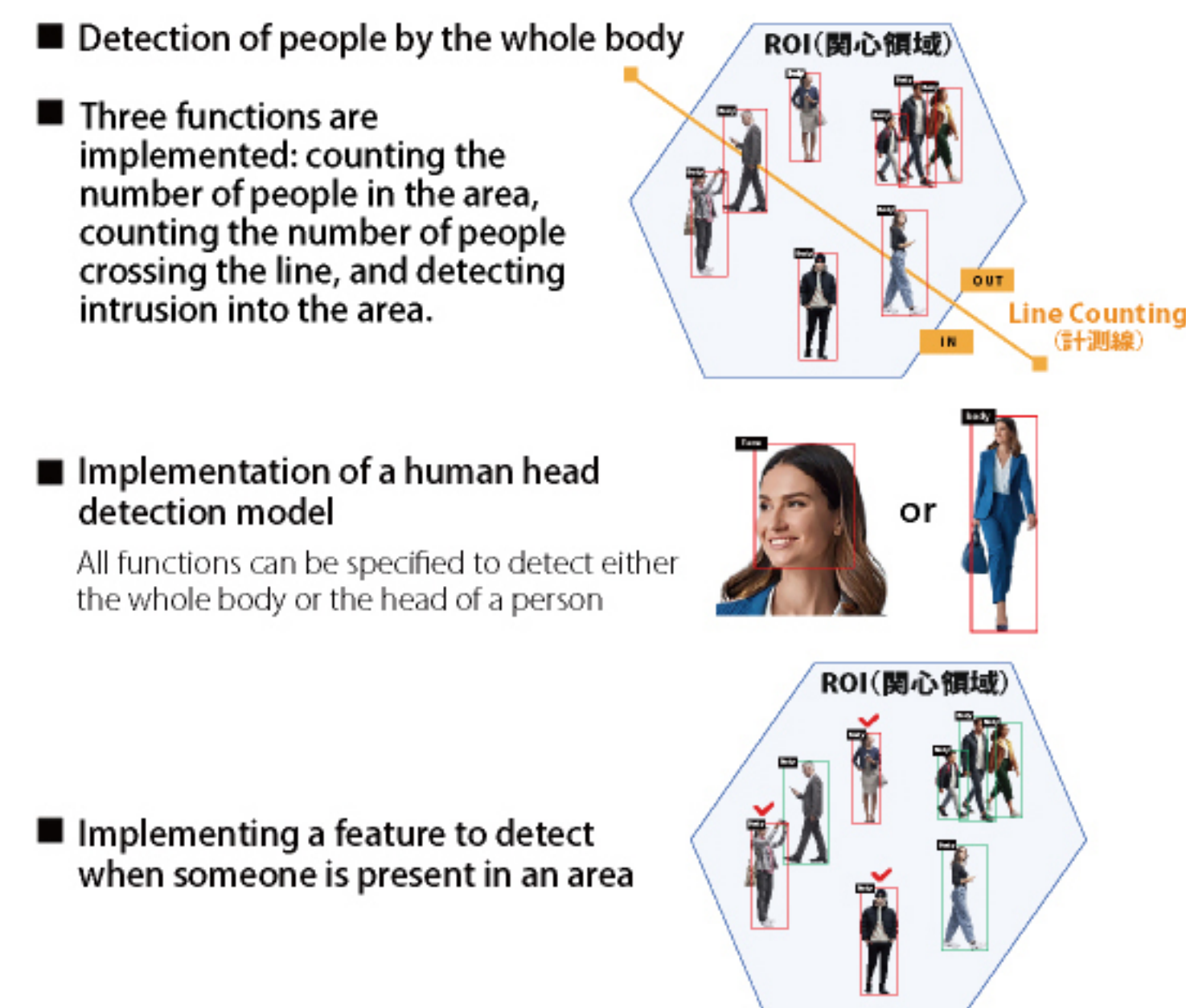
- Counting the number of people in an area
- Counting the number of people crossing a line
- Intrusion detection within the area
- Detection of presence within an area

Post-processing (Node-RED) Section Overview

Node-RED flow for generic external system integration will be provided

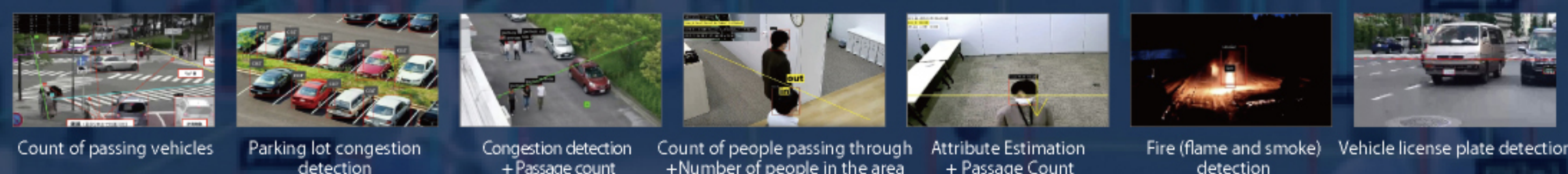
*Node-RED is a visual programming development tool for interconnecting hardware devices, APIs, and online services.

Feature implementation (release) schedule



Edge AI Station α Series

Releasing AI applications that leverage our extensive development experience and track record



*The release of new models under development and the selection of AI applications will be announced on our website.

Smart Factory

- ▶ Inspection of products
- ▶ Ensure safety and security
- ▶ Abnormality and hazard detection
- ▶ Local 5G utilization and alerting
- ▶ Closed network installation

Outdoor Parking Lot

- ▶ Occupancy measurement, long-time parking, license plate detection
- ▶ Cost reduction through multi-camera processing, etc.
- ▶ Alerting based on action rules
- ▶ Information visualization and presentation

Roads and Railways

- ▶ Ensuring safety and security
- ▶ Detecting abnormalities and dangers such as trespassing on highways and railways
- ▶ Detecting conditions such as traffic jams
- ▶ Issuing alerts based on action rules

Use cases for Edge AI Station

Video AI Platform for Smart Cities

—Flexible SI through "easy," "short term," and "low cost" implementation in system development—

Smart Buildings / Facilities

- ▶ Real-time AI monitoring of multiple cameras
- ▶ Enhanced security, safety, and convenience for buildings and venues
- ▶ Centralized monitoring via BOS integration
- ▶ Supports on-premise and closed network installation

Rivers / Reservoirs / Harbors

- ▶ Water and tide level measurement
- ▶ Anomaly and danger detection
- ▶ On-site video / image monitoring
- ▶ Alerts and equipment control based on action rules

Construction sites, plants

- ▶ Real-time video monitoring of construction progress
- ▶ Ensures safety and security
- ▶ Abnormality and hazard detection
- ▶ On-site video/image verification
- ▶ Alerting and equipment control based on action rules

System configuration image



Industrial Hardware

Robust, High Performance, High Quality

- **NVIDIA Orin Series:** Unparalleled inference performance with high-performance GPUs
Multi-stream and multi-application support for many cameras in a single Edge AI Box - EX
- **Extensive wireless interfaces and system I/O for a variety of use cases**
Wireless I/F: Supports 5G, LTE, WiFi, Bluetooth, GPS. System I/O: 2 x PoE GB Ether, 2 x USB, HDMI, CAN, DIO
- **Highly reliable design with high environmental performance and ARMM recovery function in case of failure**
Recovery functions: cold boot with Watchdog, reboot of 5G/LTE module, reboot of PoE (camera)
- **High-speed, high-capacity edge storage (NVMe)**
EX3 / EX5: 256GB, EX7 : 512GB



EX3·EX5



EX7

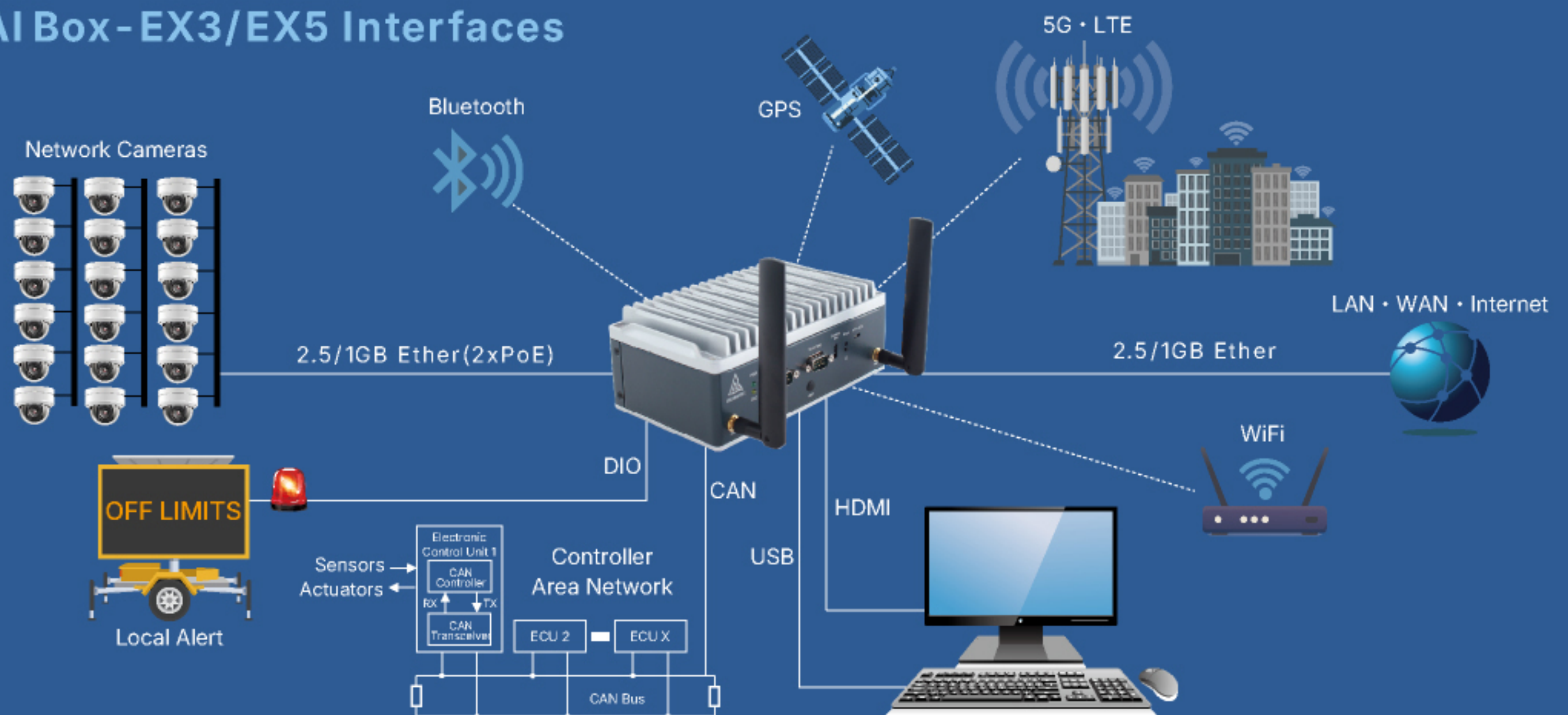


Cover for outdoor (option)



Internal ARMM

Edge AI Box - EX3/EX5 Interfaces



Product Maintenance • Support

- **EDGEMATRIX Station Cloud** to provide product maintenance and support services
 - Issue a ticket to EDGEMATRIX Customer Support
 - Online remote connection for troubleshooting
 - Edge AI Station Software and License Renewal
 - Warranty and support for Edge AI Station hardware

*The Station Cloud service requires an Internet connection for the Edge AI Station.

*This service requires an annual contract (fee-based).

**Station
Cloud Service**

Sales Agent

EDGEMATRIX
EDGEMATRIX Inc.
www.edgematrix.com

