ADLINK
LEADING EDGE COMPUTING

Evolving a New Generation of Robotics: from Automation to Autonomy

www.adlinktech.com

The Future of Robotic-based Systems

Ongoing advances in robotics are making human-machine collaboration and unmanned vision easier to achieve. Highly-integrated secure environments enable robotic systems to more easily recognize and respond to diverse environments. These systems are becoming more adaptive and flexible, allowing them to access instructions and information more intelligently. AI-enabled real-time, system-wide communications boost performance significantly, such that, as the systems get smarter, a wider variety of complex tasks can be accomplished.

Easy-Integration	Scalability	Security
Real-time Communication	Intelligence	High Performance

A ROScube-X

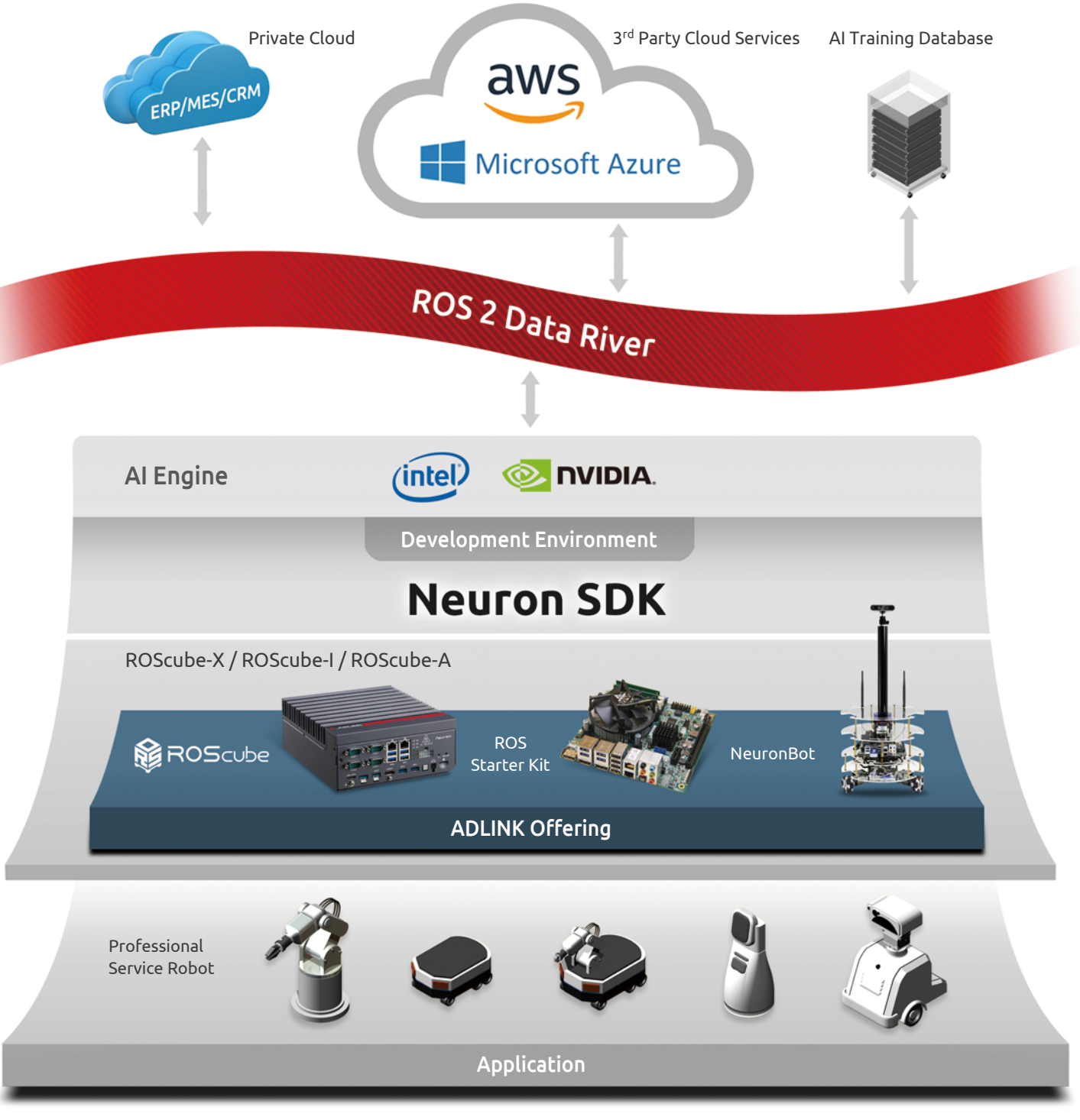
- High AI computing
- Low power consumption

B ROScube-I

- Mainstream architecture for ROS 2 development
- Deal with complex algorithms with CPU

ADLINK's ROS 2 Robotics Solutions

ADLINK robotics solutions allow users to develop complex robotic applications with minimal investment outlay, whereby they enjoy the benefits of various AI engines, development environments, flexible hardware systems, and evolving Data Distribution Service.



How we can help you?

ADLINK can help create value-added robotic offerings pre-integrated with ROS 2-based tools, architected with modular packages for easy, optimized integration

- **Easy integration**
- **AI-enabled**
- **Optimized ROS environment**
- **Speedy time-to-market**

Why ADLINK?

Simplified System Integration

Rich tool/module portfolios and ROS 1/ ROS 2 compatible environment make it easy to integrate application requirements across multiple hardware, software package, and service types.

Reduced Total Cost of Ownership (TCO)

End-to-end expenditure, from purchase to disposal, including expected costs of service, repair, and warranty can be decreased significantly.

Enhanced Communications

System-wide communications connect multiple devices via DDS.

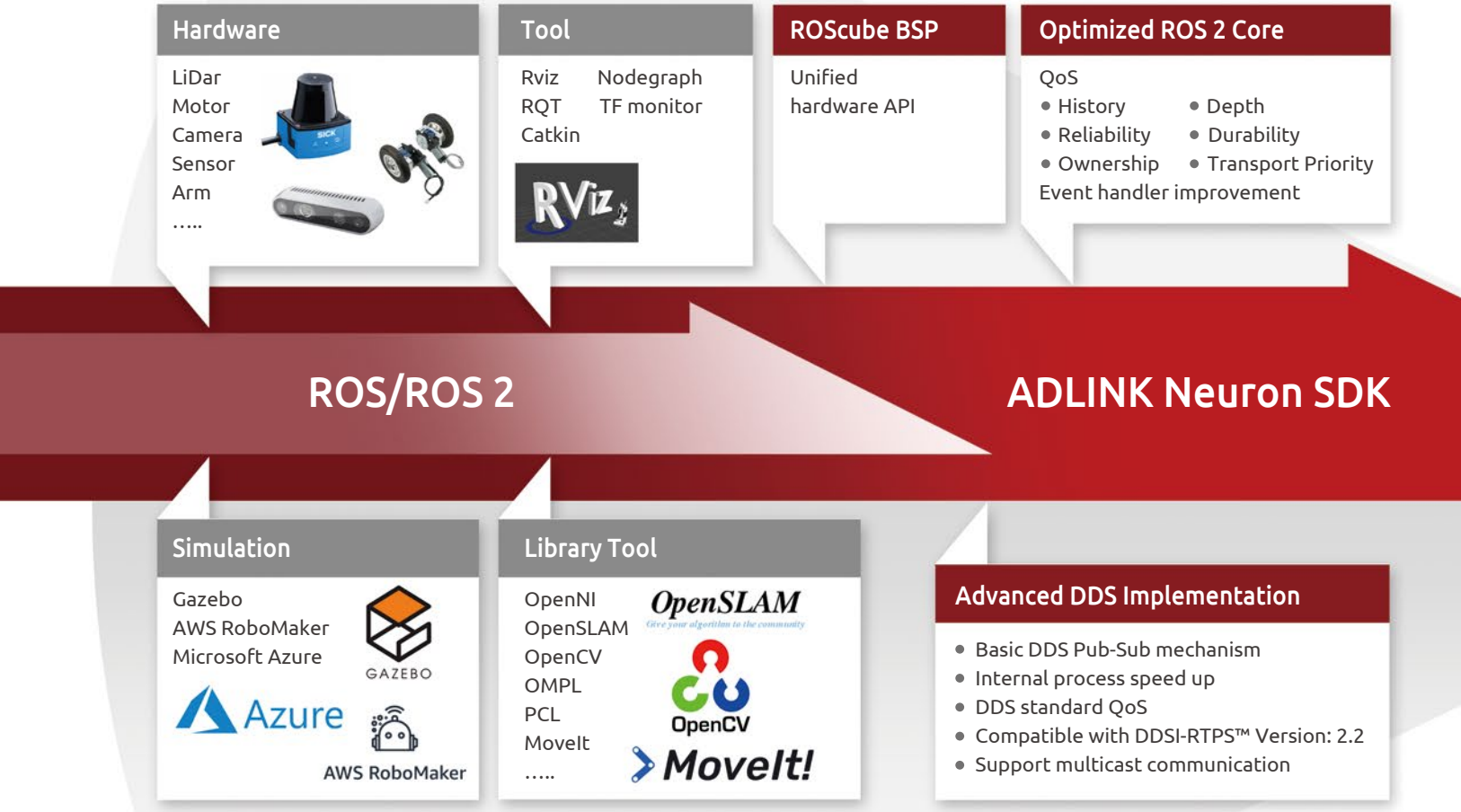
Where can you use this solution?

- **Factory – AGV, AMR, AMIR**
- **Warehouse – AGV, AMR, AMIR**
- **Hotel – Automatic delivery service robot**
- **Hospital – Automatic delivery service robot**
- **Shopping mall – Surveillance service robot**
- **School – Surveillance service robot**

ADLINK's Powerful ROS 2 Development Kit

The ADLINK Neuron SDK, delivering powerful development capabilities, is fully compatible with both ROS 1 and 2, featuring an optimized environment providing full access to hundreds of open source robotic algorithms, achieving rapid development for faster time-to-market.

- **Powerful development tool**
- **Six QoS message management Enabled**
- **High performing data delivery with advanced DDS**



ADLINK meets every user's needs

Enterprise Users

Seeking speedy entry into the robotics-enabled market ADLINK provides:

ROScube-X

Powerful AI computing for intelligent robotics development

- High-end AI based autonomous application

ROScube-I

Mainstream architecture for Professional Service robotics development

- Mainstream robotics application

- Cost-effective for mass production

Development Users

Pursuing development opportunities with open source availability ADLINK provides:

- ROS Starter Kit
- NeuronBot
- Training course

ROScube-X

ROS 2-enabled robotic controller based on NVIDIA® Jetson AGX Xavier™ module

ADLINK's ROScube-X , powered by the Xavier module, features integrated Volta GPU and dual deep learning accelerators, with a wide variety of interfaces for robotic system integration. ROScube-X supports the full complement of resources developed with the NVIDIA JetPack SDK and ADLINK's ROScube-X, and is specifically suited for robotic applications demanding high-AI computing with minimal power consumption.

- Strong AI-based computing with power consumption as low as 20 W
- Compatible with ARM-based ROS 2 environment
- Ruggedized, secure connectivity with locking USB ports

ROScube-X	
System Core	
Processor	NVIDIA® Jetson AGX Xavier™
Memory	On board 16GB
eMMC	32GB on module
Graphics	
Graphic Output	1x HDMI
Front Panel I/O Interface	
Ethernet	2x GbE
USB 3.1 GEN2	1
USB 3.1 GEN1	6
Serial Port	1x RS232/485 + 3x RS-232
Side Panel I/O Interface	
GPIO	20 bit
Other control signals	UART, SPI, CAN, I2C, PWM
Storage Device	
M.2 Extension	1x Key B+M 3042/2280
SD Card	1x µSD
Optional Expansion	
Expansion I/O	Optional 1x PCIex8 + 1x PCIex4
Power Requirements	
DC Input	9-36V
AC Input	Optional 280W adapter
Fail Reset	Recovery / Reset
Power LED Indicator	Storage / WDT
Mechanical	
Dimensions	Core module: 190mm (W) x 210mm (D) x 80mm (H)
	With expansion box: 322mm (W) x 210mm (D) x 80mm (H)
Weight	4 / 5 kg
Mounting	Wall mount
Environmental	
Operating Temperature	0°C ~ 50°C
Operating Humidity	95% @40˚C (non-condensing)
Storage Temperature	-40°C to 85˚C
Software	
Software Development Kit	ADLINK Neuron SDK
Environment	ROS 1/ROS 2
Middleware	ADLINK Opensplice DDS

ROScube-I

ROS 2-enabled robotic controller based on Intel® Core™ processors

The ADLINK ROScube-I exceptional I/O connectivity enables a wide variety of sensors and actuators for endless robotic applications. Also supported are AI computation platforms like Intel VPU and Nvidia GPU card for AI algorithms and inference. ROScube-I is a perfect platform for development of industrial use service robotic applications such as autonomous mobile robots (AMR) and autonomous mobile industrial robots (AMIR).

- X86/64 mainstream architecture for ROS 2 development
- Comprehensive I/O for unlimited device type connection
- Ruggedized, secure connectivity with locking USB ports

ROScube-I	
System Core	
Processor	Intel® Core™ i7-8850H/i5-8400H
Memory	4GB /8GB /16GB
Graphics	
Graphic Output	1x HDMI
Front Panel I/O Interface	
Ethernet	2x GbE
USB 3.1 GEN1	6
Serial Port	1x RS232/485 + 3x RS-232
Side Panel I/O Interface	
GPIO	20 bit
Other Control Signals	UART, SPI, CAN, I2C, PWM
Storage Device	
M.2 Extension	1x Key B+M 3042/2280
SD Card	1x MicroSD
Optional Expansion	
Expansion Cassette	Optional 1x PCIe x16 + 1x PCIe x4
Power Requirements	
DC Input	9-36V
AC Input	Optional 280W adapter
Fail Reset	Recovery / Reset
Power LED Indicator	Storage / WDT
Mechanical	
Dimensions	Core module: 190mm (W) x 210mm (D) x 80mm (H)
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ADLINK LEADING EDGE COMPUTING

intel partner Titanium

ADLINK ROS 2 development platform is an Intel® IoT RFP Ready Kit. Intel® IoT RFP Ready Kits are focused technology offerings that solve a class of market problems, have been deployed and tested in the field, and provide bundled hardware, software, and support. The technology is scalable, and designed to grow with customer requirements-enabling accelerated development and time to market. Intel is working with partners including ADLINK to develop and deliver these innovative RFP Ready Kit Solutions so that we can empower businesses to achieve real results, today.