



LIDAR SIMULATION IN A CERTIFIABLE ROS 2 NETWORK

SYSGO partnered with Apex.AI and Renesas to build an Automotive demonstrator that integrates the certifiable ROS 2 stack Apex.OS with the PikeOS RTOS & Hypervisor. The demonstrator is based on the LiDAR 3D perception stack demo developed by Apex.AI.

ROS 2 is a flexible, open-source software platform for developing prototype applications. It provides a collection of tools, libraries, and algorithms that simplify the task of creating complex behaviours across a wide variety of robotic and Automotive platforms.

Automotive ADAS Platform

- With partner Apex.AI
- Hardware: Renesas R-Car H3
- LiDAR simulation in certifiable ROS2 network
 - Apex.AI 3D Perception Demo
 - Replay of captured LiDAR data
 - Processing in Apex.OS / ROS 2 nodes distributed across multiple partitions
 - Visualization with RViz2 on external participant

Customer Value

- LiDAR simulation in certifiable ROS 2 network
- Platform for a Software defined smart vehicle based on hard real-time
- Deterministic, real-time, Automotive functional Safety certification up to ASIL D
- Processing in Apex.OS / ROS 2 nodes distributed across multiple PikeOS partitions
- Seamless development workflow

AUTOMOTIVE DEMO PARTNERS

Apex.AI

Apex.AI is developing breakthrough software for mobility, smart-machines and IoT. Learn more about Apex.OS, the first and only safety-certified end-to-end operating system, and Apex.Middleware. Like Apple's iOS software development kit, which enables practically anyone to create an iPhone app, Apex.OS makes programming a vehicle almost as easy as programming a phone. Apex.AI is backed by Toyota Ventures, Volvo Group VC, Jaguar Land Rover's VC arm, Continental, ZF, AGCO and more.

RENESAS

Renesas Electronics delivers trusted, embedded design innovation with complete semiconductor solutions that enable billions of connected, intelligent devices that make our lives easier. We're a global leader in Microcontrollers, Analog, Power devices, and SoC products that fuel a broad swathe of industries from Automotive, Industrial and Infrastructure to IoT.

Founded in 1991, SYSGO became a trusted advisor for Embedded Operating Systems and is the European leader in hypervisor-based OS technology offering worldwide product life cycle support. We are well positioned to meet customer needs in all industries and offer tailor-made solutions with highest expectations in Safety & Security. More information at www.sysgo.com/automotive