



FACTORY AUTOMATION

Automated Guided Vehicle

AUTONOMOUS GUIDED VEHICLE

ROS (Robotics OS) enabled Xilinx ZCU104 platform

Scope

- Industrial design of compact and powerful factory vehicle to pull around 150kgs
- Board design, COTS integration
- Software integration of Xilinx PetaLinux, Robotics OS, Sensor ROS node

Challenges

- Xilinx Zynq UltraScale+ MPSoC ZCU104
- Brushless DC Motor + Motor Controller
- 2D Lidar - Safety Laser Scanner / Scanning Rangefinder
- PoE GigE Mono Camera - Rear
- Depth Camera – Front
- IMU
- Battery

Functionality

- Forward, Backward & Turn motion
- Docking & Locking of trolley
- Obstacle detection for SLAM technology using LiDAR and Depth Camera
- Other sensing – Bump, Proximity, IMU
- Rear Panel product functionality switches and port

Tools & Framework

- Xilinx PetaLinux 2018.3
- ROS – Kinetic version

Market	Business Benefit	Delivery model	What's Next
Industrial/ Industrial Automation	Platform evaluation and performance benchmarking	Fixed bid	Product Realization

