

OD-Explorer: Autonomous robot with monitoring by control center

Motivation and goals

- Pioneer project for autonomous robots in logistics
- PoC for showcasing at fairs



Team

MVP and technical content

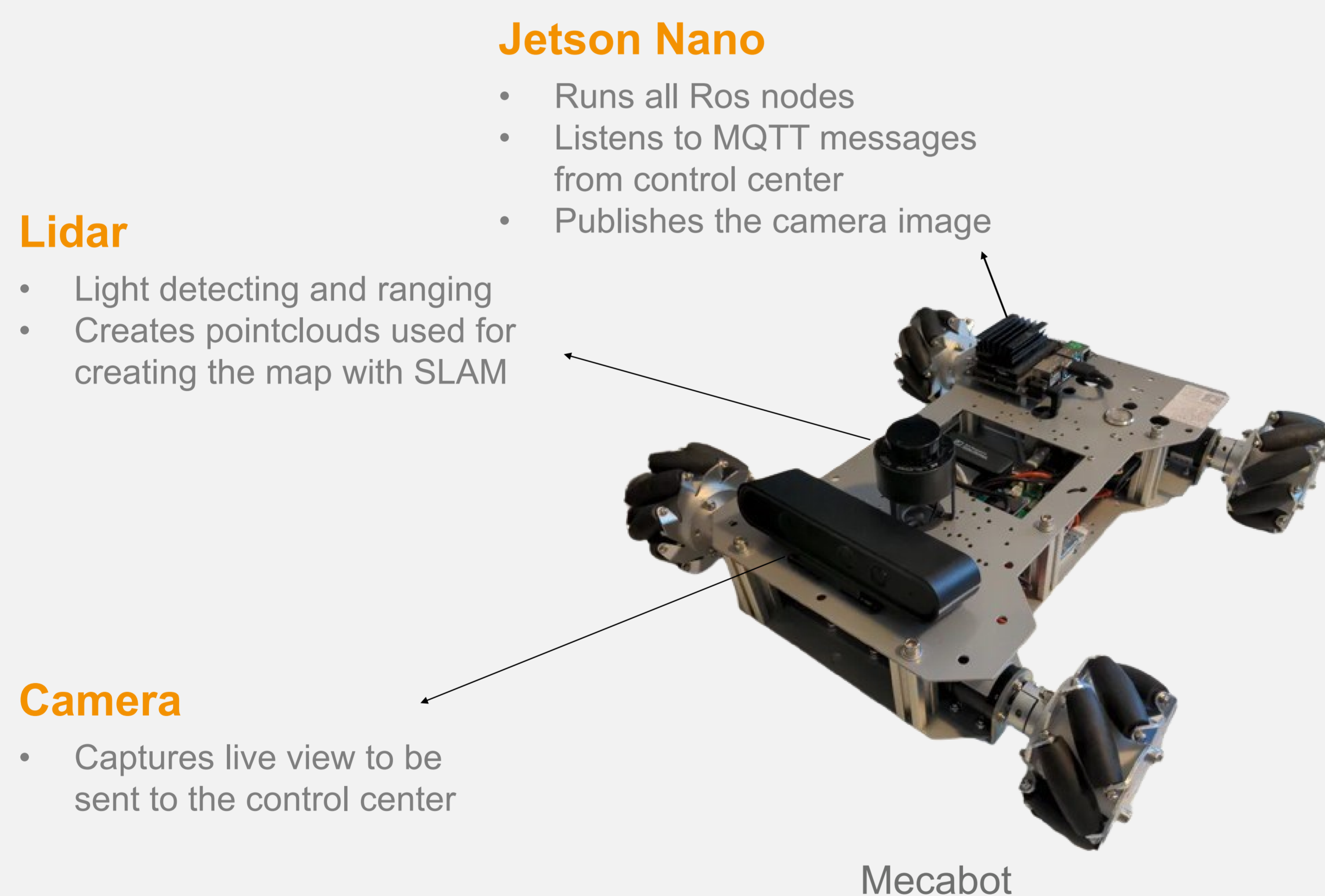
- Autonomously driving robot
- Using Simultaneous Localisation and Mapping (SLAM) for navigation
- Monitoring robot from control center with camera feed
- Stopping the robots action from the control center

Challenges

- Working with unknown technology
- Provided image for robot was broken
- Lack of English documentation

Architecture and technology

- Ros2 Galactic
- MQTT for communication
- Webserver showing live camera feed



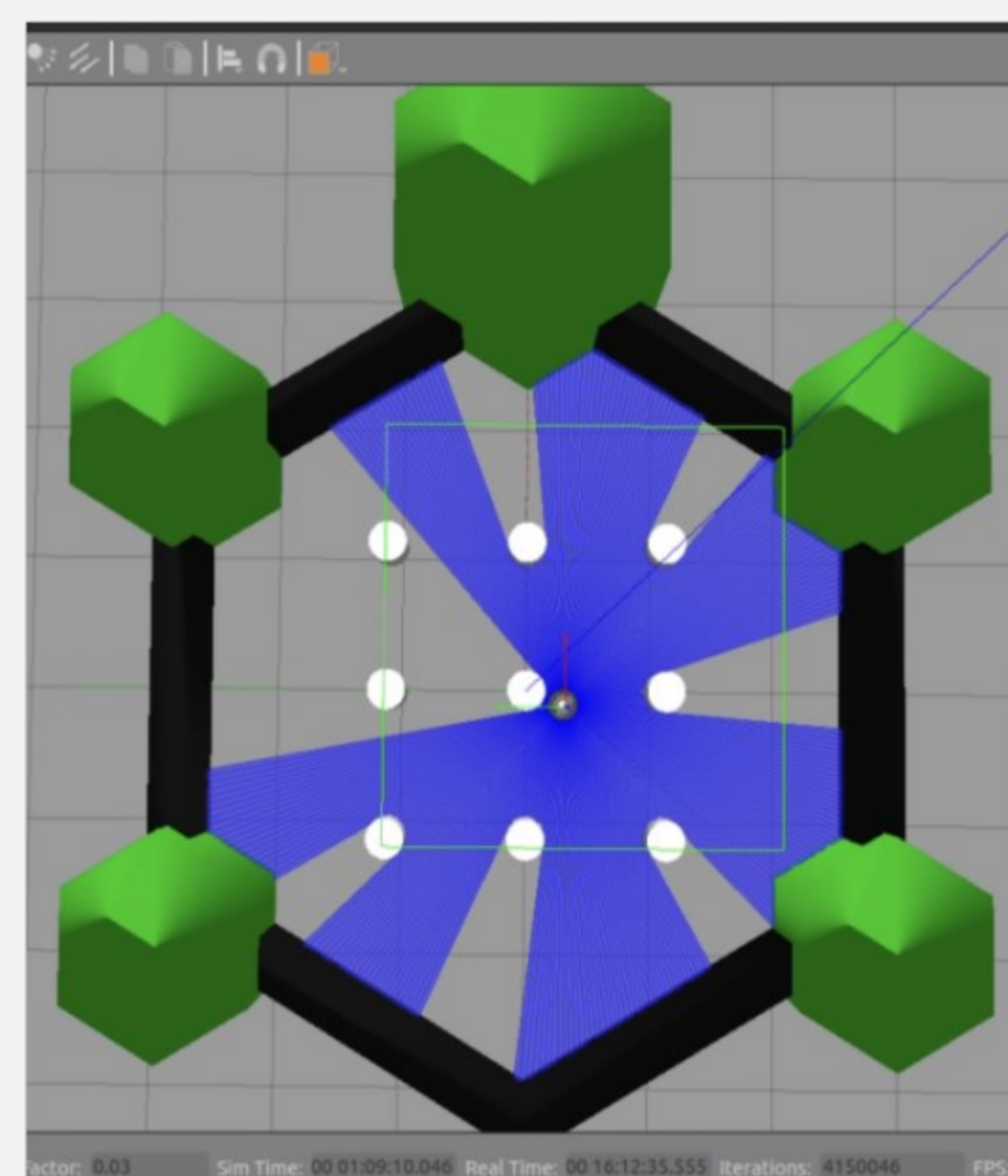
Communication
via WiFi

Control center

- Monitors the robot
- Gets the camera feed
- Sends MQTT message to stop the robot

Contributions

- Development environment
- Robot drives
- Can be stopped by MQTT message
- Live camera feed gets transmitted
- Working simulation of the robot
- Map creation and visualisation



Simulation of the robot in gazebo with visible lidar



Visualisation of created map in Rviz

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