## nnovation ab



## **OD-Explorer: Autonomous robot** with monitoring by control center

### **Motivation and goals**

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



### **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

### **Jetson Nano**

- Runs all Ros nodes
- Listens to MQTT messages from control center

#### Lidar

- Light detecting and ranging
- Creates pointclouds used for

# Publishes the camera image

### Challenges

Working with unknown technology

Team

- Provided image for robot was broken
- Lack of English documentation

### **Architecture and technology**

Ros2 Galactic

via WiFi

- MQTT for communication
- Webserver showing live camera feed



#### **Control center**

- Monitors the roboter
- 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

Visualisation of created map in Rviz

with visibile lidar

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