

SLaRC Sensor Suite

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Background

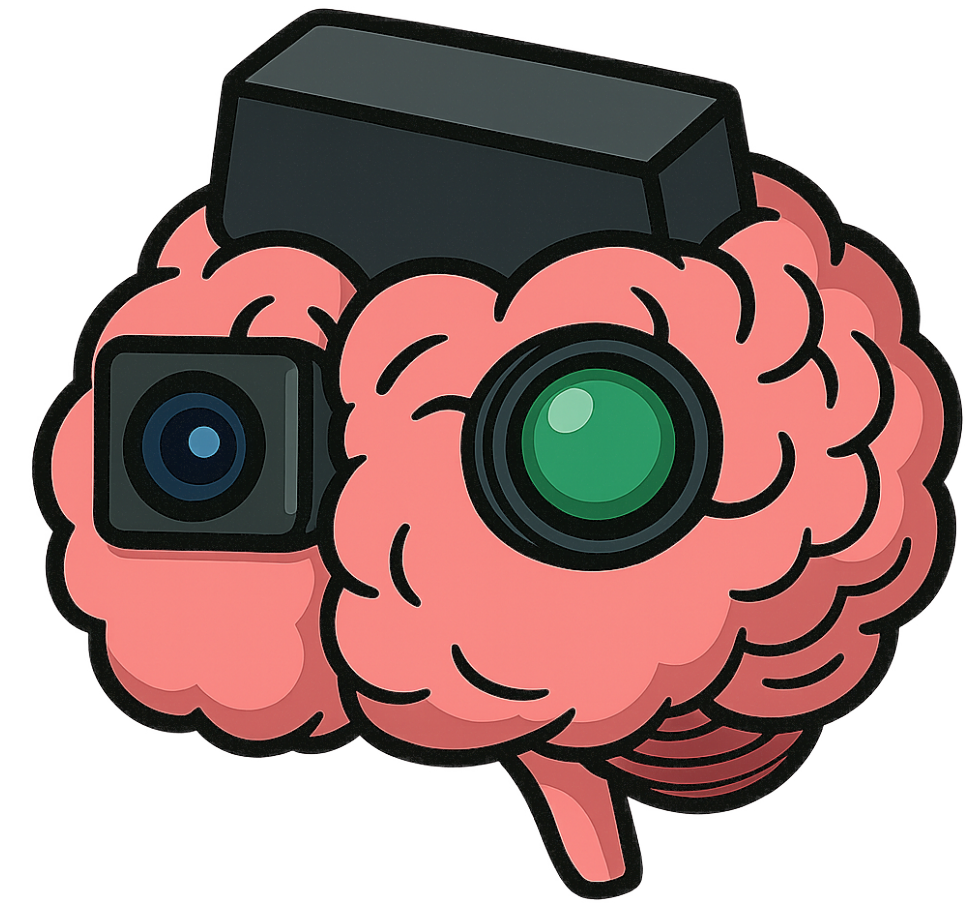
The SLaRC project consists of two teams: one building a new base platform from scratch, while the other team is developing sensors and control systems on an existing platform until the new platform has been developed.



Goal and Motivation

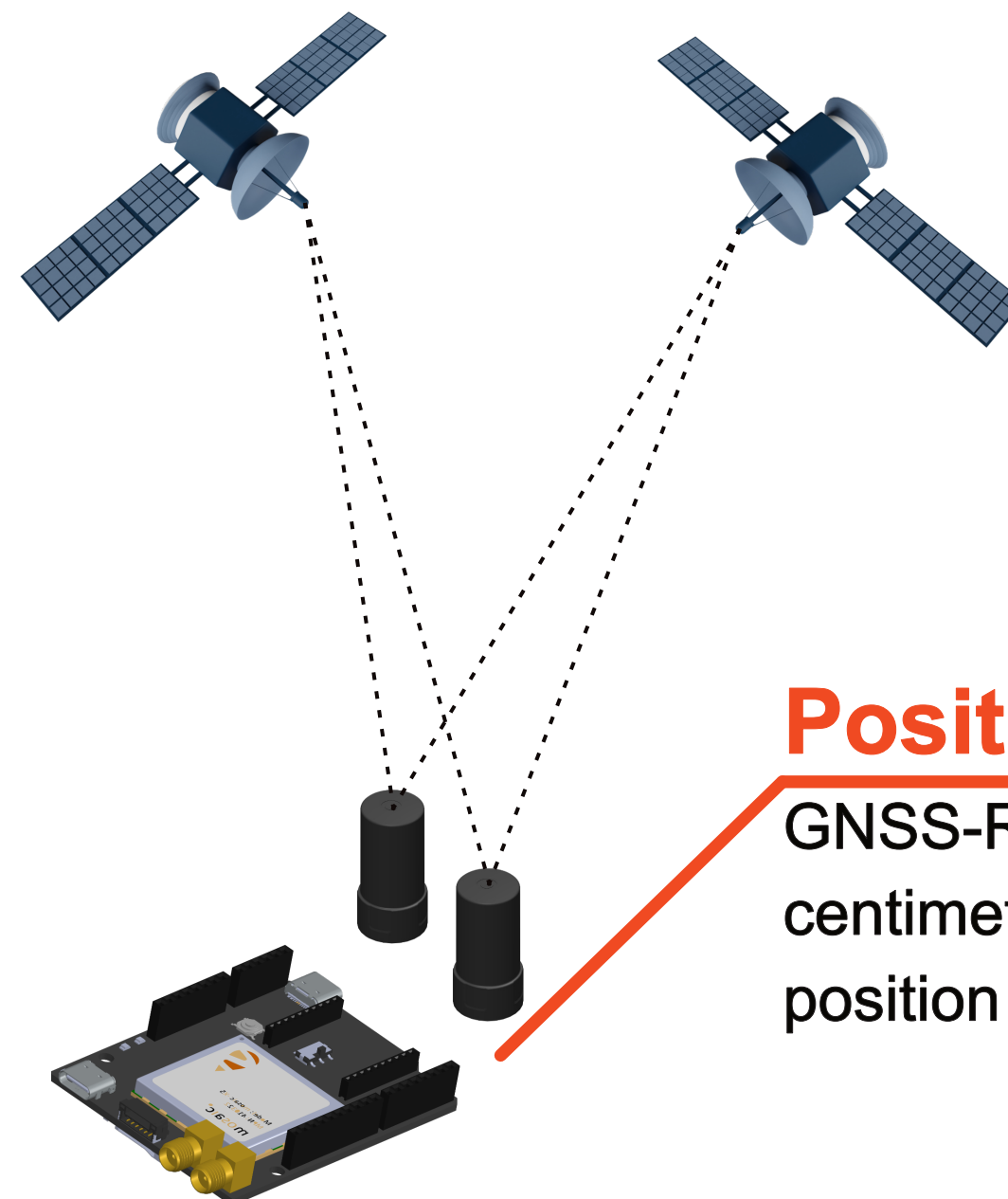
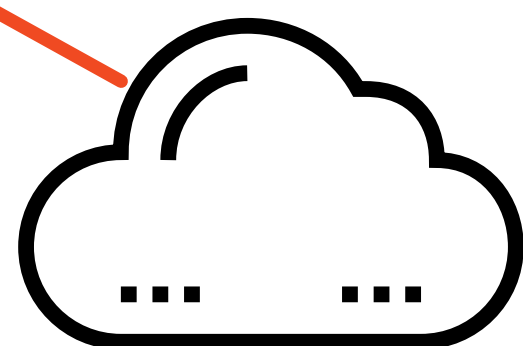
The goal is to build a robust and modular ROS2 based **software architecture** for controlling an **Unmanned Ground Vehicle (UGV)** capable of simple **waypoint following** and **environment mapping**.

The purpose of this project is to develop an **UGV platform** for the MDU Robotics Group. The platform aims to participate in the **ARES Makeathon Challenge 2027**, and to support future research in autonomous systems.



Teleoperation

Teleoperation enables a human operator to control the vehicle remotely. A first-person view video feed providing the remote operator with a view of the environment.

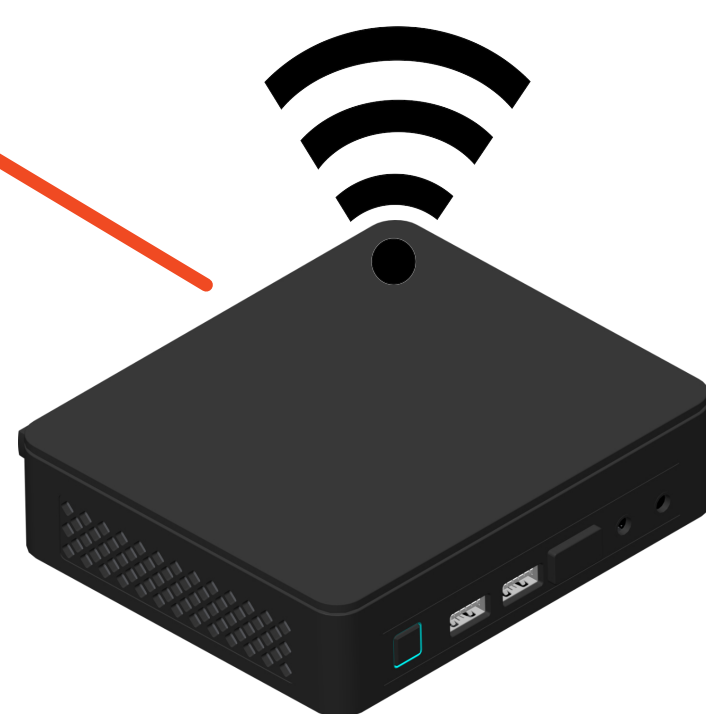


Positioning

GNSS-RTK is used to get a centimetre-level precision of its position in the real world.

Navigation

Sensor data and position information is used to navigate between waypoints while detecting and avoiding obstacles.



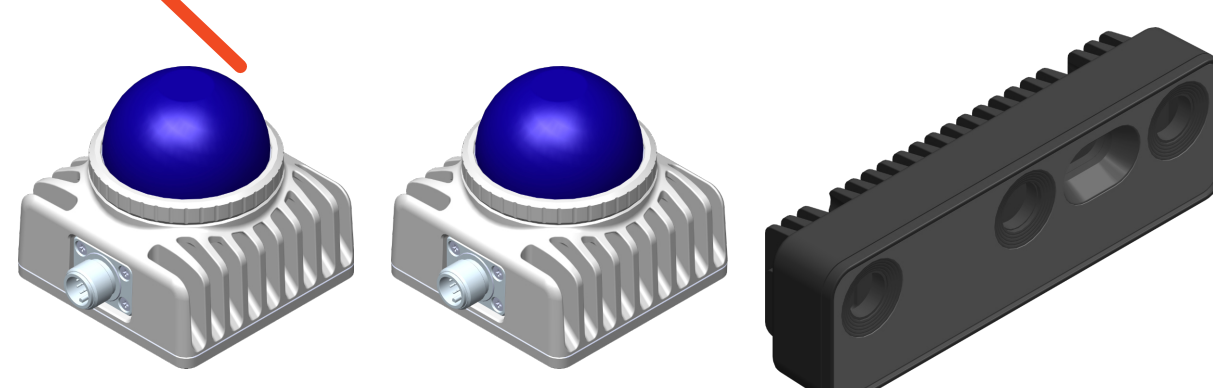
Operation modes

The vehicle can be driven manually using a connected controller, or navigate autonomously to a desired location.



Perception

LiDARs and a stereo camera will help in creating a 3D map of the environment.



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