

Robotics & control systems

Robotic and control-system integration across sensing, planning, actuation, and operator interfaces. We connect high-level intelligence with deterministic embedded behavior and test the full system against defined scenarios.

WHAT WE CAN DO

- 01

Navigation & mapping

SLAM, frontier exploration, planning, and navigation integration around the robot's operating environment.
- 02

Perception & sensing

LiDAR, depth cameras, IMU inputs, and sensor processing for useful estimates of the world.
- 03

Embedded control

Actuator interfaces, state estimation, control loops, and MCU-to-SBC communication.
- 04

System integration

Telemetry, operator tools, link recovery, and coordinated behavior across software and hardware.

TECHNOLOGIES & WORKING AREAS

ROS 2 / Nav2 / SLAM / sensor fusion / LiDAR / RGB-D / Embedded control / Edge perception

A CLEAR PATH TO HANDOVER.

WHAT YOU RECEIVE

- Robotic software and embedded integration code
- Sensor, actuator, and communication interfaces
- Configuration and calibration documentation
- Scenario-based validation results
- Deployment workflow and technical handover

HOW THE WORK PROGRESSES

- 01 **Define the mission**
Environment, movement, sensing, and constraints.
- 02 **Partition the system**
Compute, control, sensors, and communications.
- 03 **Integrate behavior**
Perception, planning, and actuation together.
- 04 **Test scenarios**
Navigation, recovery, and edge conditions.

RELEVANT ENGINEERING

Autonomous Disaster-Recon UGV

Indoor mapping, autonomous exploration, and four-tier communications.

FrontierFlow

Frontier clustering and goal selection bridging SLAM and Nav2.

TO SCOPE YOUR PROJECT

- / Robot platform and sensor inventory
- / Mission and operating environment
- / Compute and actuator interfaces
- / Existing ROS or control-system software

LET'S DISCUSS YOUR PROJECT

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