Autonomous Navigation and Mapping

Providing Clarity for Robot Navigation

ORCA HUB
Offshore Robotics for Certification of Assets
Remote Safety and Integrity

Autonomous 3D mapping and navigation are foundational capabilities for mobile robots. Knowing where you are and what's around you is essential when deciding what you do next. For robots carrying out inspection and maintenance offshore, rugged 3D navigation is essential.

The ORCA Hub is carrying out research into sensing and navigation methods for unstructured, dynamically changing conditions. The technology has been developed across a variety of field trials in different lighting conditions, in different types of facilities, as well as both above and below ground.

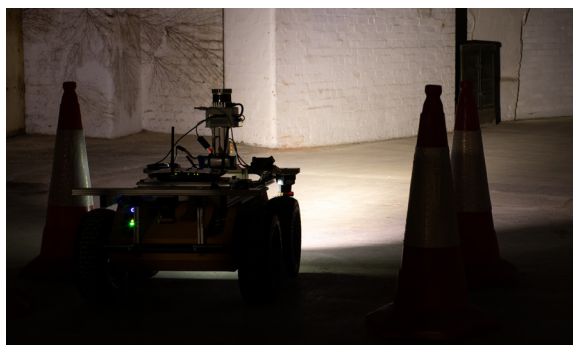
The device - called a Rooster - is an integrated multi-sensor perception system containing cameras, LIDAR and inertial sensing as well as a compute payload. SLAM (Simultaneous Localisation and Mapping) technology uses sophisticated sensor fusion to combine motion constraints in an optimization back-end.

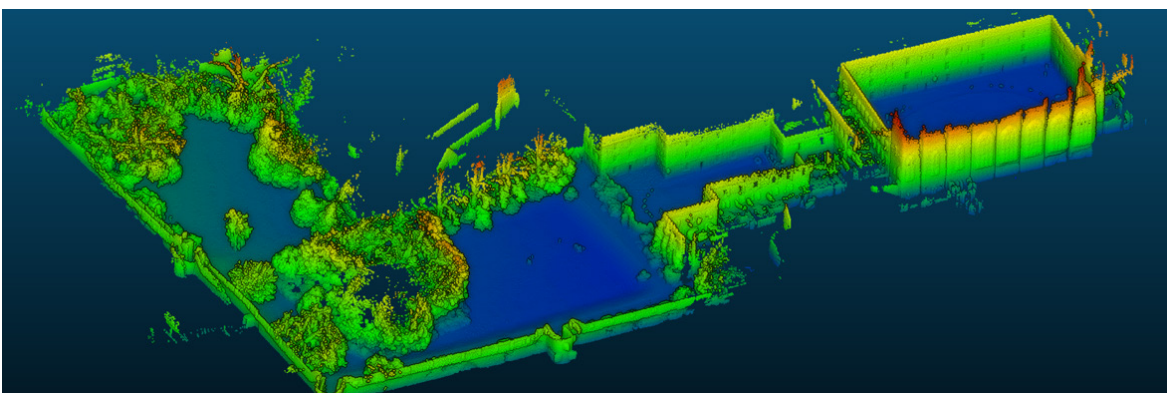
Benefits

- Have full confidence in your robot's position with centimetre accurate localization
- Build a clear understanding of your robot's environment through detailed 3D maps
- Improve robot navigation capabilities
- Redundant sensors and integrated fusion achieve robustness to various challenges
- Efficient fusion enables autonomous platforms to move dynamically in confined spaces enabling inspection, mapping and monitoring
- A handheld variant enables interactive maintenance and inspection by automating the workflow of a human inspection

Possible Applications

- Mapping, inspection and data gathering on industrial facilities, platforms and buildings
- Map topside platforms using terrestrial based robotic systems and Unmanned Aerial Vehicles





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