

Clearpath Robotics: Remote data gathering for teleoperation

Autonomous remote surveying allows robots to do work that's too dangerous or too dull for humans. The robots need a high resolution video stream, drawn from video, stereo images and LiDAR to give real-time manipulation and control.

Project Description

This project evaluated the performance of the Clearpath Husky unmanned ground vehicle under the data load allowable through 5G networks by gathering data about its environment through two types of LiDAR and several cameras, and feeding that back to the operator.



Without the lower latency and higher speeds of 5G network integration, users would have to rely on cumbersome and slow manual teleoperation.

The 5G network reduces operator lag time and prevents damage to the robot and its environment due to delayed responses.

Project Outcomes

Clearpath leveraged ENCQOR's 5G network to stream high resolution video and point cloud data to perform accurate and safe teleoperation and inspection. Some 3D point cloud processing and map building was migrated to a central remote server to reduce the computational burden. This reduced the robot computer cost and enabled co-ordinated multi-robot mapping and environment exploration.

Clearpath now has data to showcase their experience and capabilities, and a new industrial sensor suite that provides an additional revenue stream.

"The early adoption of 5G technology, aided by ENCQOR 5G and Communitex, has given Clearpath Robotics important leverage when it comes to discussing the technology with potential customers."

Ebrahim Shahrivar
Autonomy Engineering Lead,
Clearpath Robotics Inc.



The Clearpath Robotics brand encompasses the manufacture and sale of a variety of land and sea vehicles used for robotics research, as well as the sale of individual components for robotics prototyping through its online store. It also provides custom robotics integration as well as ROS consulting services.

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Website

clearpathrobotics.com

Industry

Industrial automation

Number of employees

180+ employees