

## **Mapping of unknown industrial plant using ROS-based navigation mobile robot**

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This research examines how humans work with teleoperated unmanned mobile robot inspection in industrial plant area resulting 2D/3D map for further critical evaluation. This experiment focuses on two parts, the way human-robot doing remote interactions using robust method and the way robot perceives the environment surround as a 2D/3D perspective map. ROS (robot operating system) as a tool was utilized in the development and implementation during the research which comes up with robust data communication method in the form of messages and topics. RGBD SLAM performs the visual mapping function to construct 2D/3D map using Kinect sensor. The results showed that the mobile robot-based teleoperated system are successful to extend human perspective in term of remote surveillance in large area of industrial plant. It was concluded that the proposed work is robust solution for large mapping within an unknown construction building.