Title: ROS2 compatible simulation environment for RoboCup Rescue Simulation

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Abstract: The RoboCup Rescue Simulation has a Virtual Robot competition since 2006, where multiple robots explore a disaster site, partly autonomous, partly controlled by high-level commands from a human in a control station. The latest years the competition was based on the ROS1 framework, which allowed the competing teams to integrate many of the existing perception, navigation and exploration modules from the ROS-community.

Yet, according the ROS roadmap, Noetic Ninjemys (released May 2020) will be the last official ROS1 distribution. In addition, ROS2 is designed for multi-robot operation, non-ideal communication networks and supports multiple platforms. As Research Showcase, we will like to demonstrate the benefits of porting the Rescue Simulation environment to ROS2 and the new research challenges which are possible in the future.

Example of a depth image of two other robots in the simulation environment.

The code of this new version of the environment is available on github, including a Single-Robot SLAM & Mapping Demo and a Multi-Robot Scenario for ROS2.

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4 https://github.com/RoboCup-RSVRL/RoboCup2022RVRL_Demo