Autonomous Robotics with ROS for mmWave – Release Notes

Overview

This lab allows for the TI mmWave sensor to be used with popular mapping and navigation libraries in the Robot Operating System (ROS) environment, familiar to many robotics engineers. The lab uses the Octomap server and move_base libraries with TI's mmWave ROS Driver Package software interface to the TI mmWave sensor IWR1443BOOST ES3.0 EVM (running the mmWave SDK version 2.1 out-of-box demo) or the TI mmWave sensor IWR6843ISK ES1.0 EVM (running the mmWave SDK version 3.0 out-of-box demo). With this TI driver and the software from the ROS community (ros.org) engineers may evaluate robot navigation and object avoidance quickly and easily.

Features

- Integrates the TI mmWave ROS driver into the ROS Turtlebot2 platform to allow the TI mmWave sensor IWR1443BOOST ES3.0 EVM or the TI mmWave sensor IWR6843ISK ES1.0 EVM to be used as a 3-D sensor
- Demonstrates mapping using the the TI mmWave sensor with the ROS Octomap package
- Demonstrates navigation with collision-avoidance using the TI mmWave sensor with the ROS move_base package

Limitations

The following is a list of known limitations for this release that were known at the time of release.

- Currently supported/tested for the IWR1443BOOST ES3.0 EVM or IWR6843ISK ES1.0 EVM only
- The mmWave EVM must be flashed with the mmWave SDK version 2.1 out-of-box demo firmware for IWR1443 ES3.0 or the mmWave SDK version 3.0 out-of-box demo firmware for IWR6843 ES1.0
- The fake_localization ROS navigation package is used to allow direct setting of the robot's initial pose (position/orientation) and goal pose. Therefore, the gmapping and amcl ROS navigation packages are not used.

Changes from Previous Driver Version

The following is a list of changes present in this version of the driver compared to the previous release.

- Launch files modified to add support for IWR6843
- Chirp profile config (.cfg) file added for IWR6843