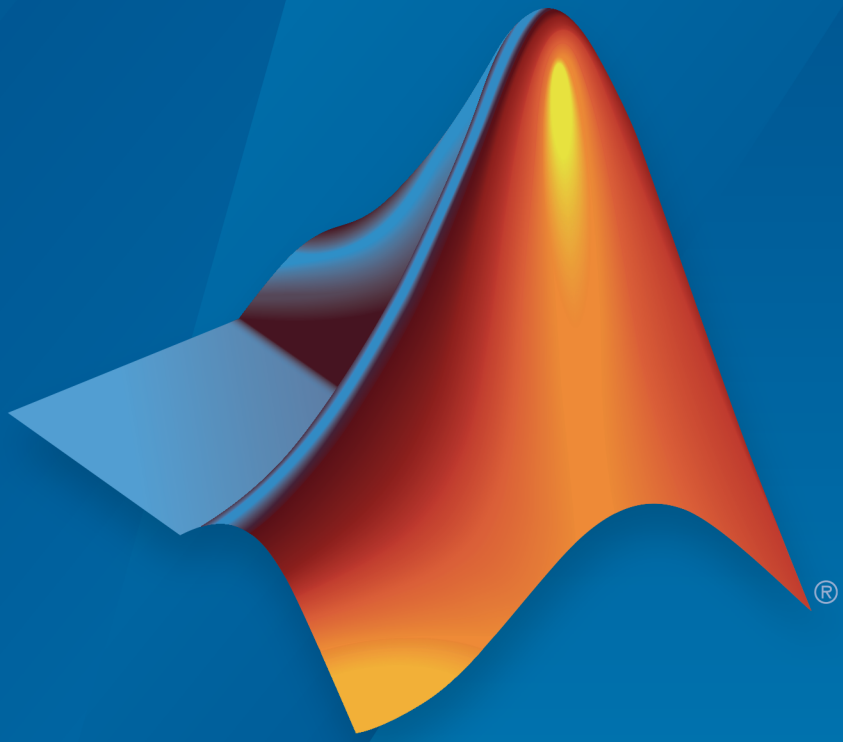
Robotics System Toolbox™ Release Notes



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Contents

R2015a

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Version: 1.0

New Features

Path planning, path following, and map representation algorithms

The Robotics System Toolbox™ provides algorithms for path planning, path following, and map representations. The support in this release includes classes for Binary Occupancy Grids, Probabilistic Roadmaps (PRM), and a Pure Pursuit controller.

Functions for converting between different rotation and translation representations

Coordinate system transformations are provided as functions for converting between many different representations including quaternions, rotation matrices, homogeneous transformation matrices, and Euler angles. Other functions are available for converting between radians and degrees and for angle calculations. For more information, see "Coordinate System Transformations".

Bidirectional communication with live ROS-enabled robots

Communication with ROS using publishers and subscribers is available in MATLAB® and Simulink®. Many message types are readily supported. Robotics System Toolbox can also access ROS services, the parameter server, and the tf transformation tree in MATLAB.

Interface to Gazebo and other ROS-enabled simulators

ROS-enabled simulators allow prototyping of algorithms and testing systems developed in MATLAB. Connection to a Gazebo simulator is supported with an example interacting with the simulator shown here: "Reading Model and Simulation Properties from Gazebo".

Data import from rosbag log files

This release of the Robotics System Toolbox includes the ability to access rosbags, which are logfiles from ROS. You can access whole log files or portions and manipulate the data as desired (see "Working with rosbag Logfiles").

ROS node generation from Simulink models (with Embedded Coder)

This release includes ROS node generation using Simulink. You can use Simulink to create models that exchange messages with a ROS network. Using Embedded Coder®, you can generate C++ code for standalone ROS nodes from these models.