INDOOR AUTONOMOUS MOBILE ROBOT SOFTWARE

Rtino

Auto Map Generation

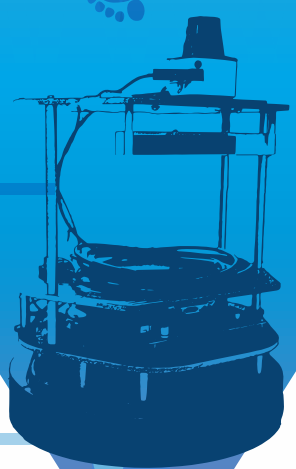
Generates the map from scratch without user actions.
Detects completing generating the map by itself and returns to the original location.

Autonomous Mobility

Maneuvers to any points on the map by avoiding obstacles not on the map.

NEW Tracking and Line Tracing

Tracking is a feature to follow the objects in front of the robot, and Line Tracing is a feature to trace specific color of lines/ropes on the floor.



Announcing the Details of the Packaged Features and Specific Adaptation Examples! New Features: Tracking and Line Tracing

The centralized management application "Rtino Manager" is now available. Rtino Manager enables managing multiple indoor autonomous mobile robots running in the same area from a PC.
A number of new features has been introduced since its initial package announcement in May 2017 and able to support more customer scenarios.

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INDOOR AUTONOMOUS MOBILE ROBOT SOFTWARE Rtino

Auto Map Generation

- Generates the map to be used for autonomous maneuver for indoor environment such as office and factory floor.
- Traditionally, the map generation require human to guide the robots by remote controllers. Rtino generates the map automatically with distance surveying sensors.
- Rtino does not run randomly, rather it searches for the missing area and moves to the area. repeats the search efficiently to complete the map.
- Rtino avoids obstacles such as materials and equipment on the floor when generating the map. The narrow area where the robot cannot go though are marked to avoid for autonomous maneuver.
- Rtino has a flexibility to adjust to the environmental changes, and automatically re-generates the map upon the floor layout change is detected. *Note: Certain conditions may prevent Rtino to re-generate the map.

Autonomous Mobility

- Maneuvers to the specific destination based on the generated map.
- Avoids obstacles positioned after the map generation.
- Detours automatically based on the generated map if the shortest logical route is blocked by obstacles.
- Detects moving obstacles such as human and hand carts, and either detours or stops depending on the situation.

Automatic Guided Vehicle Feature

Sets the preferable route by itself and stay on the route without guiding tapes and lines on the floor. It can be set to stop upon detecting obstacles on the route until the obstacle is away from the route.

Environmental Survey

Routinely go around the multiple destinations to survey environmental data such as temperature and illuminance.

Centralized Management

Enables centralized management of multiple autonomous mobile robot in the area.

Virtual Wall

Enables to control the robots by using markers to build virtual walls.

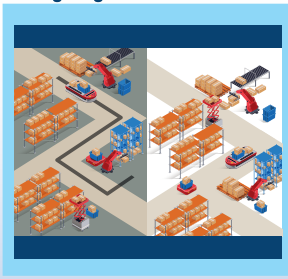
Packaged Features

Rtino package enables you to generate the map for autonomous mobility and autonomous maneuvering of the robot, such as self-guided hand carts.

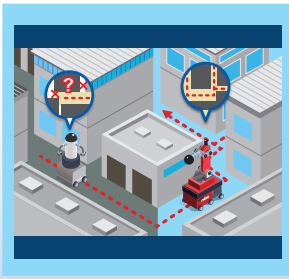
Typical Initial Tasks

- Adjust parameters for your specific robot, depending on your robots' size, speed, etc.
- Adjust for your robots' interfaces, such as driving commands, odometry acquisition, etc.
- Adjust for your robots' sensors, such as LiDAR, ultrasonic sensors, etc.

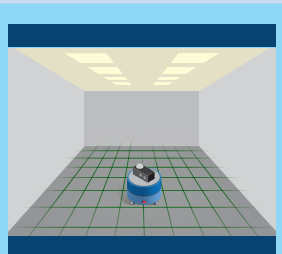
Application Examples



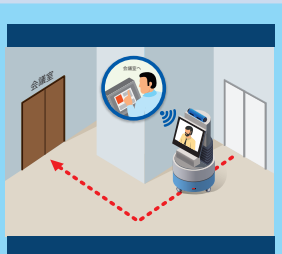
Automatic Guided Vehicle (AGV) feature for autonomous mobility. Customers in the manufacturing and food companies building robots for their internal use, and AGV manufacturers applying Rtino for their autonomous mobility.
Rtino removes the tasks such as maintaining routes and guiding tapes/lines on the floor.



Autonomous mobility for patrolling robots. Rtino enriches robustness of existing robots to autonomously maneuver where no GPS signals are available, such as between buildings.



Survey the floor without human assistance. Rtino enables routine survey of specific area by autonomously maneuvers and survey environmental data with additional sensors such as temperature, humidity, illuminance, cracks in the floor, ceiling, and walls.



Remote presence and self-guided concierge. When customers register at the reception, concierge robots can guide them to the designated meeting rooms. Video conference system with autonomous mobility can move itself to the designated meeting room and start the video conference, and return to the storage upon finishing the meeting.