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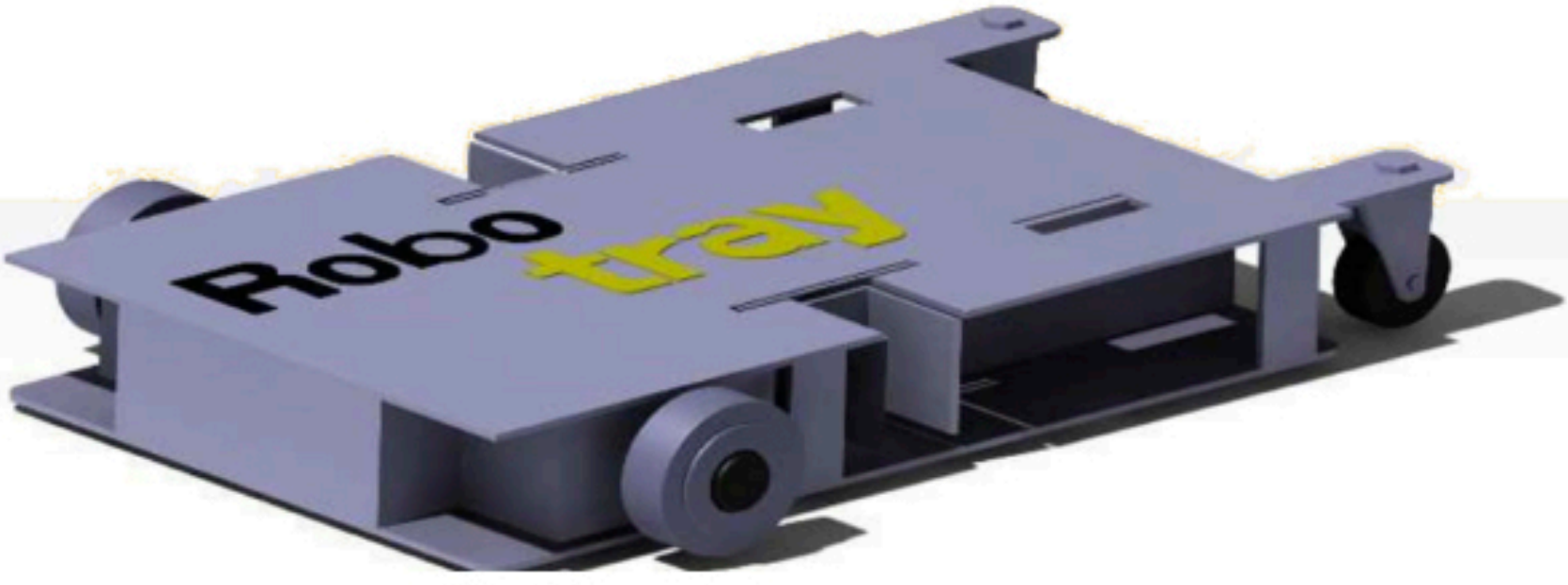
ROBOCART

AUTOMATED GUIDED VEHICLE (AUTONOMOUS)



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ROBOCART AGV SYSTEM:

Move racks and basket dollies in the plant using a Robotray® patented AGV system. Manages the movement of racks without labor. It guarantees constant availability and unlimited coverage thanks to its autonomous battery charging station system, which makes for NON-STOP PRODUCTION. Precise and reversible steering controls and programming the system with remote access. The origin and destination are fully customizable and includes automatic travel report submission capabilities.

Use an Indoor Navigation System designed to provide precise (±2cm) location data.

The navigation system consists of a network of stationary ultrasonic beacons interconnected via radio interface in a license-free band, one or more mobile beacons installed on objects to be tracked and modem providing gateway to the system from PC or other computers.

Mobile beacon's location is calculated based on a propagation delay of an ultrasonic pulses (Time-Of-Flight or TOF) between stationary and mobile beacons using trilateration algorithm.

100% reliable and safe, Electromagnetic braking system, obstacle sensor with E-Stop and warning alarm with flashing light, all standard features.

Robocart® improves productivity and process efficiency while reducing risks and labor costs thereby increasing the safety of operators and overall plant operation.

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SPECIFICATIONS:

- Move racks and carts through out your plant
- Low profle: engages racks from underneath
- Wireless transmission of performance data
- Magnetic tape route. (Optional indoor GPS)
- Precise steering. Electromagnetic braking
- Obstacle sensor (Sonar).
- Off-the-shelf indoor navigation system, that provides precise (±2cm) location data
- Audible alarms & lights
- Remote access, email/text messaging of alerts
- Continuous recording of cycling performance with self-diagnostics
- PLC control choices: AB or Omron or Siemens.
- Color HMI Touchscreen, multilingual menus

- **BASE SYSTEM MEASUREMENTS:**
  - **WIDTH:** 48.895cm/19.25in
  - **LENGTH:** 92.233cm/36.3125in
  - **HEIGHT:** 11.43cm/4.5in
- **BASE SYSTEM WEIGHT:** 22,67Kg / 50lbs

BENEFITS:

- Eliminate Labor
- Reduce workmans' comp costs
- Prevent employee litigation expenses
- Increase production. Higher run rates
- Compact. Space saving designs
- Flexible. Expandable capabilities
- Open Frame. Easy to clean & maintain
- Fast Payback. ROI of less than 18 months

MODELS:

A) Base system
- 1 vehicle
- Battery charger

B) Expanded system
- 2 vehicles
- Battery charger and controller

Check the Video!!

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TECHNICAL SPECIFICATIONS OF OFF-THE-SHELF INDOOR NAVIGATION SYSTEM :

Distance between beacons

- ✓ Reaches up to 50 meters and up to 100 meters with horn under laboratory conditions (Mini-RX or Super-Beacon to Super-Beacon with RX4 only)
- ✓ Recommended distance is 30 meters (Transducer4 on the first beacon is looking straight at the Transducer4 on the second beacon, other transducers are switched off)

Coverage area

- ✓ Reaches up to 1000m2 with the Starter Set configurations
- ✓ Coverage for larger territories is provided using submap – like cells in cellular networks

Location precision

- ✓ Absolute: 1–3% of the distance to the beacons
- ✓ Differential precision: ±2_c_m_ _

Location update rate

- ✓ 1/20Hz to 25Hz (Ultrasonic based only)
- ✓ 100Hz with ultrasonic + IMU fusion enabled (Only for Beacons HW v4.9-IMU-Discontinued)
- ✓ Can be set manually via Dashboard software
- ✓ Depends on the distance between mobile and stationary beacons (shorter distance—higher update rate)
- ✓ Depends on the number of mobile beacons (Non-Inverse Architecture; for Inverse Architecture no such dependency)
- ✓ Depends on the radio profile (500kbps vs. 38kbps)
- ✓ Slightly depends on the number of stationary beacons—dependence is not the same as for mobile beacons

Super-beacons and antenna samples

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