Shamazon Warehouse Robot: UML Activity Diagram

Sensors	Robot Navigation Stack	Simulation Environment	User Interface	Elevator Interface

Sensors
- Lidar
- Depth camera

laser_scan data

PointCloud Data

Robot Navigation Stack

move_base

- Global Costmap
- map_server
- Robot TF
- Goal to collect package
- Global Planner
- Local Costmap
- Local Planner
- Robot Controller
- Wait for Robot to reach delivery location
- Delivery location reached
- Activate conveyor to drop package

/map

tf

goal pose

Delivery Location

Delivery Location

Elevator Location

Path

cmd_vel

odom

No

Yes

Joint Velocity

Joint Velocities

Simulation Environment

- Update Global Costmap
- Goal from elevator to delivery location
- Robot Odometry
- Elevator
- Robot Model

Elevator Position

Elevator Velocity

User Interface

- Provide delivery location
- On Same Level?
- Promt "Package delivered"

Delivery Location, floor

Yes

No

floor

Elevator Interface

- Robot Reached Elevator
- Wait for Robot to reach Elevator
- Move elevator to desired floor
- Elevator Plugin

No

Yes