

Use Case Vignette: Tunnel Object Reporting

Description:

A fleet of TurtleBots drives through a tunnel and reports on the number of objects placed inside the tunnel.

Primary Actor: TurtleBot Operator

Trigger: The TurtleBot Operator activates the mission.

Main Success Scenario:

1. The TurtleBots are activated and start up.
[rule PR-1: pre setup]
2. The TurtleBots calibrate its sensors and lidar unit.
[rule PR-2: calibrating]
3. The TurtleBots are calibrated and ready for a mission.
[rule PR-3: ready for mission]
4. One TurtleBot is indicated as the leader of the mission (i.e., the first robot in the fleet).
[rule PR-10: init mission]
5. The fleet starts moving. All TurtleBots that are not leaders ensure a correct distance to the previous bot.
[rule PR-11: collaboration start]
6. When an object is, the TurtleBot switches to pushing mode (in case it is an easy movable object).
[rule PR-12: pushing]
7. The operator confirms the correct identification of the object and the TurtleBot continues with its mission.
[rule PR-13: object confirmed]
8. When all TurtleBots have left the tunnel, they position themselves in the final position.
[rule PR-14: final position]