

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 Commander (TC)

Trigger: The TurtleBot Commander activates the search.

Main Success Scenario:

1. The TurtleBot commander issues a command to start the mission. One TurtleBot is indicated as the leader of the mission (i.e., the first robot in the fleet).

[rule PR_TB1: init turtlebot]

2. The fleet starts moving. All TurtleBots that are not leaders ensure a correct distance to the previous bot.

[rule PR_TB2: collaboration start]

3. When an object is detected by a TurtleBot, the TurtleBot switches to pushing mode (in case it is an easy movable object).

[rule PR_TB3: pushing tracking]

4. The TurtleBot Commander confirms the correct identification of the object and the TurtleBot continues with its mission.

[rule PR_TB4: object confirmed]

5. When all TurtleBots have left the tunnel, they position themselves in the final position.

[rule PR_TB5: final position]