WP4.1 World Modelling

Synergia Consortium Meeting 2025

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With contributions by Sander Doodeman & Tom Janssen

Contributions

- Simultaneous Localisation and Mapping (SLAM)
- Multi-Robot SLAM
- Mechanical precision weeding with a robot dog
- Decision-making

Multi-Robot SLAM

- Collaboration with Rick van Essen
- Drone
- Ground robot (dog)

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Mechanical Precision Weeding with a Robot Dog

- Custom-made 0-DOF weeding tool
- AI weed detection using a depth camera
- Use legs' DOF to control end effector position

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Mapping and Decision-Making for a Selective Table Grape Harvesting Robot

Harvest plan based on map with:

- Bunch positions
- Reachability dependencies
- Quality information
  - Size
  - Color level
  - Brix degree
  - Anomalies

CANOPIES

HUMAN-ROBOT COLLABORATION