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### **Multi-Robot Local Sensing Beacons**

Tema presupune dezvoltarea unui sistem senzorial integrat hardware/software pentru detecția locală a roboților vecini din cadrul unui roi robotic. Acest sistem va fi integrat și testat folosind platforme robotice existente.

### **Ant Intelligent Robot ROS integration for 2D Mapping**

The main objective is to develop a robust 2D Mapping application for indoor exploration using the Ant Intelligent Robot in conjunction with a LiDAR sensor. Specifically, the developed application has to create a 2D map of the environment that can be continuously updated in order to support Long-Term operation.

### **Multi-Robot 2D Simulator for the evaluation of self-organizing robot swarms**

The main objective is to develop new features for an existing 2D multi-robot simulator such that it provides integration with the ROS framework, visual multi-robot experiment configuration capabilities and integration with realistic kinematic/sensing noise models.

### **Multi-Robot Coordination Experiment Testbed**

The main objective is to develop a robust experiment testbed for real multi-robot experiments using Ant Intelligent Robots in conjunction with a top video camera mount. Specifically, the developed testbed must provide easy configuration, tracking and analysis features in order to enable the evaluation of different self-coordination strategies for multi-robot swarms.

### **Object filtering and path generation for autonomous driving dataset augmentation**

This project main objective is to filter out negative examples of Cityscapes segmentations and use the results to develop an automatic augmentation schema based on pregenerated paths for autonomous driving video sequences.

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