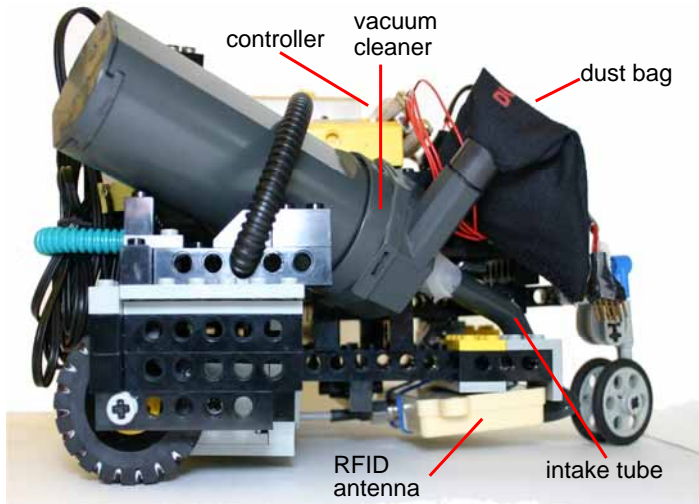
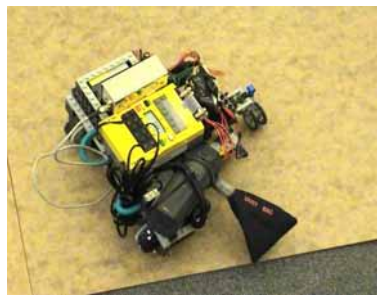


A μ -Chip-based Smart Vacuum Cleaner



F.Ma. 132

A μ -Chip-based Smart Vacuum Cleaner

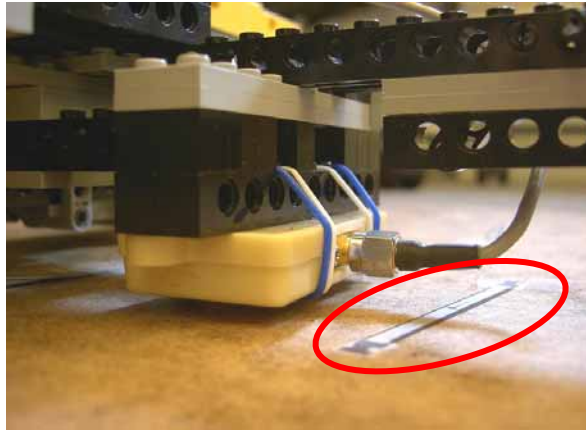


- Huge number of **RFID tags** fixed on the floor
- Robot carries a **mobile RFID reader**



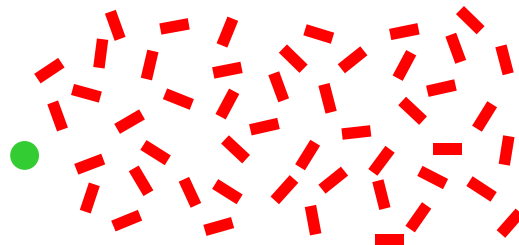
F.Ma. 134

Fixed RFID Tag and Mobile Reader Antenna



F.Ma. 135

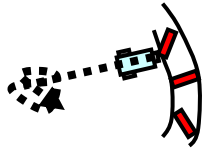
Mobile Robot Positioning



- Robot learns its **position** (tag ID)
- Knows the **border**, remembers its **track**,...
- Performs appropriate action (**move**, **turn**, **clean**,...) depending on the position

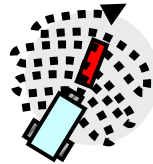
F.Ma. 136

Position Dependent Behavior



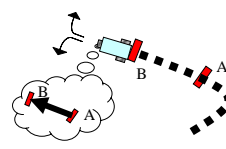
Border case

Robot turns left or right when it senses a tag that is known to be a border tag



Cleaning mode

Robot performs cleaning action on a small area when it detects a "new" tag



Déjà-vu

Robot makes a turn when it detects the same two tags in a sequence