

# Initial Design Plan for Embedded Motion Control

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# Task-Skill-Motion

## Motion

### Actuators:

- Holonomic base (omni-wheels)
- Bell

### Sensors:

- Laser Range Finder (LRF)
- Wheel encoders (odometry)

## Skill

### Movement:

- Drive
- Turn
- Wait

### Observation:

- Detect wall
- Detect door

Localization

Ring bell

## Task

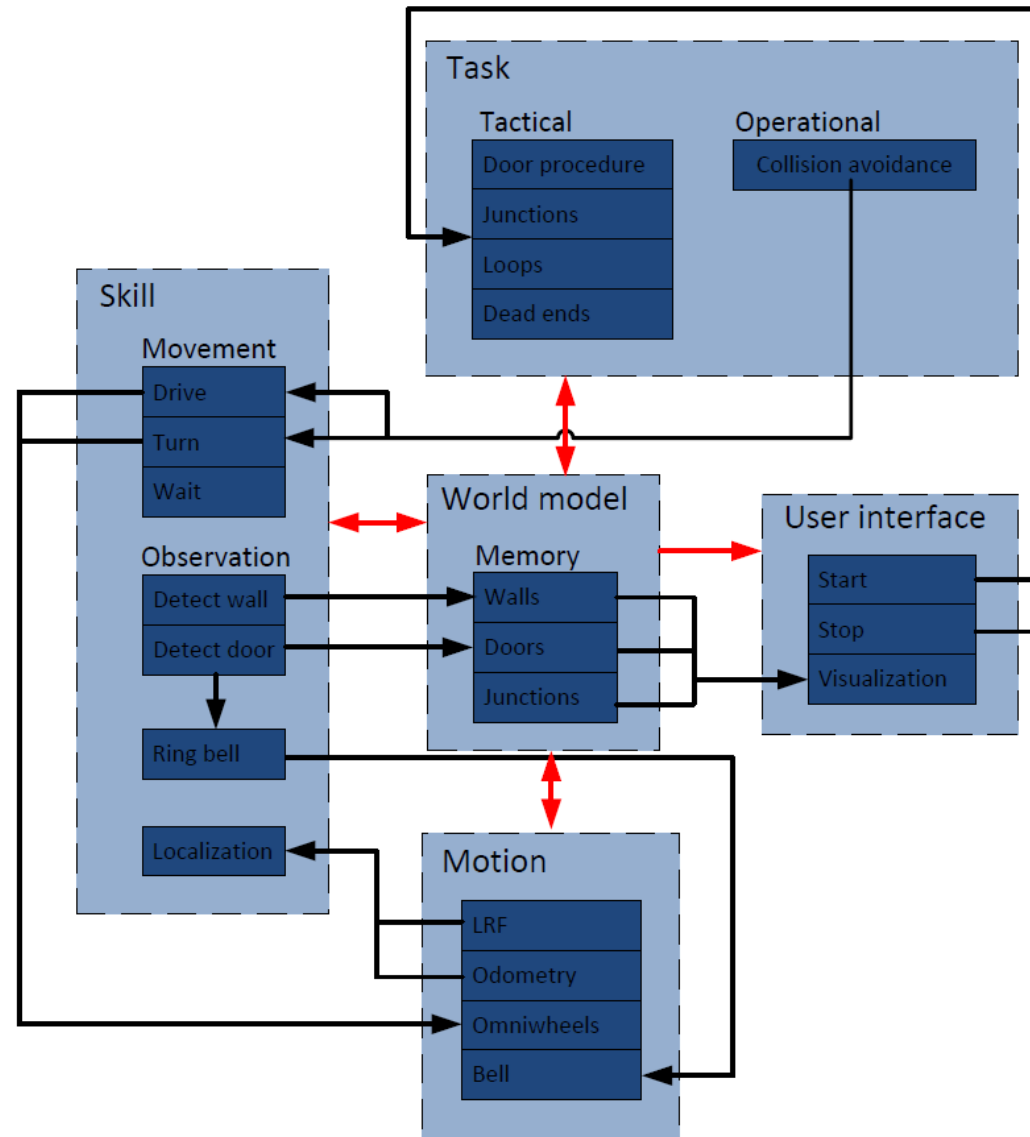
### Tactical:

- Door procedure
- Junctions
- Loops
- Dead ends

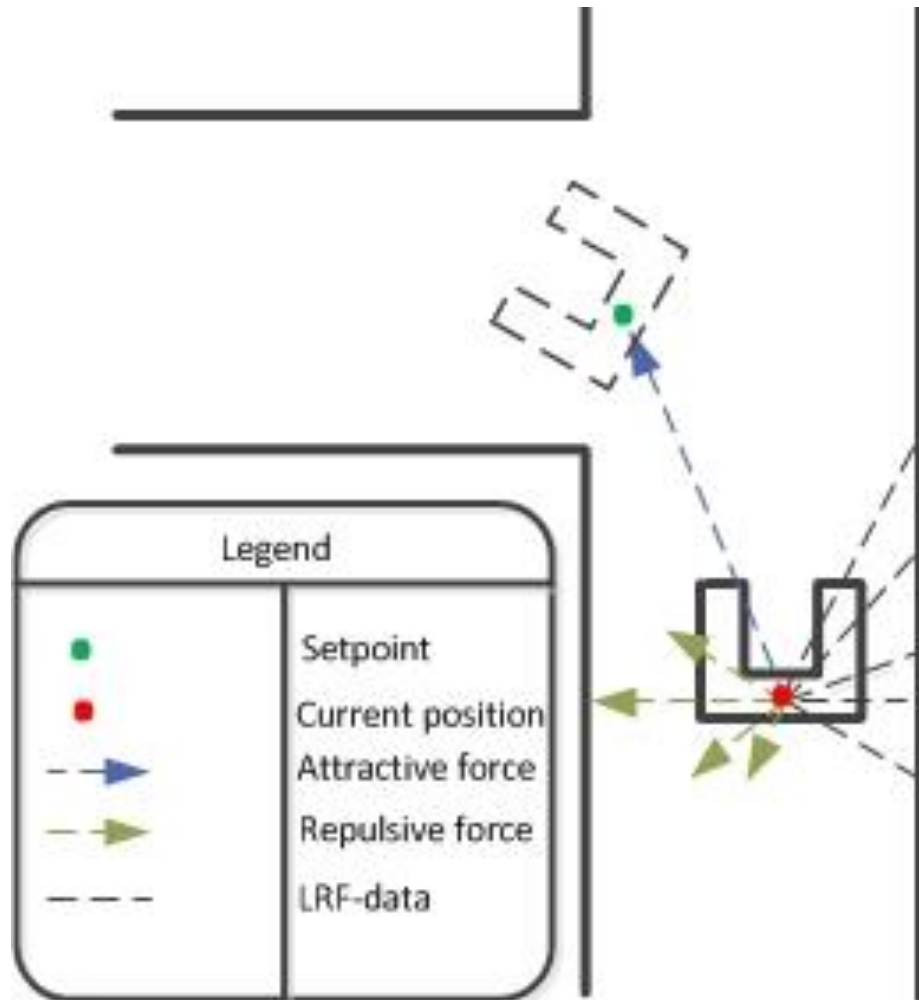
### Operational:

- Collision avoidance

# Interfaces



# Operational: Collision Avoidance



Robot is treated as a point under the influence of an artificial potential field:

- Goal (set point) generates attractive force
- Obstacles (walls) are repulsive forces

# First Test Session



**Thank you for your attention!**



**Any Questions?**