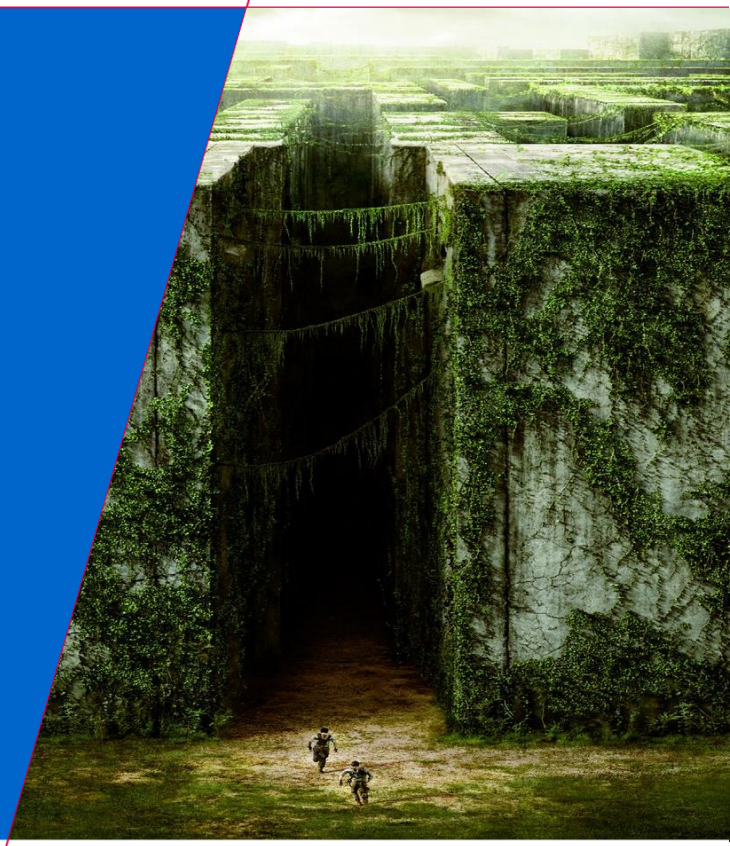
Embedded Motion Control - 4K450

May 10, 2015

The A-maze-ing Challenge



1. The assignment
2. Functions
3. “Task-Skill-Motion”- framework
4. Composition Pattern
5. Questions

Group #2

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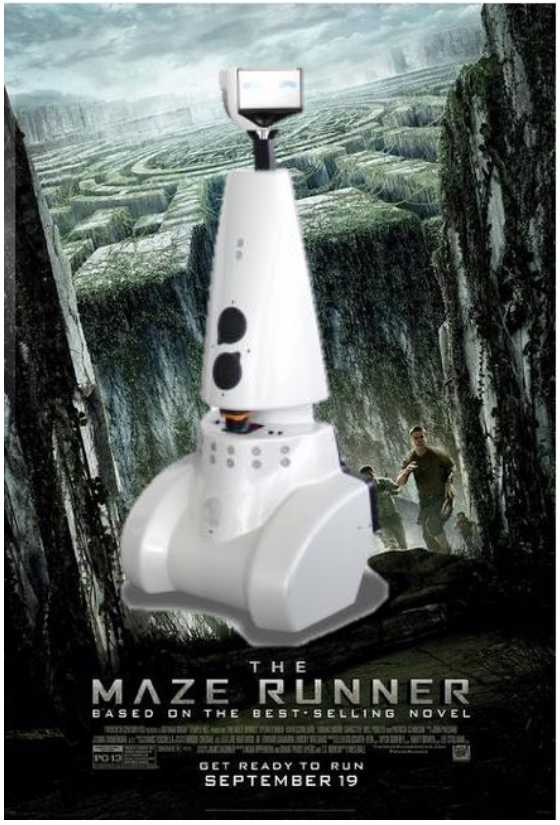
TU/e Technische Universiteit **Eindhoven** University of Technology

Where innovation starts

Assignment - The Challenge

- **"The A-Maze-ing Challenge":**
  - Solve the maze autonomously in the shortest amount of time!
    - Moving doors…

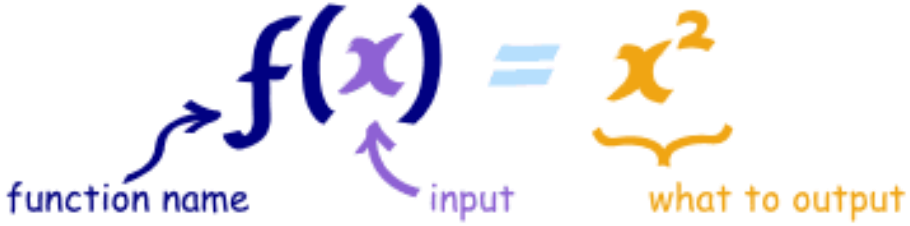
      Starring…**PICO** Robot!



- **Requirements**
  - Use the PICO robot to solve the maze
    - Completely Autonomous
    - Independent of maze configuration
  - Deal with dynamics
    - Moving doors.
  - The robot should not collide

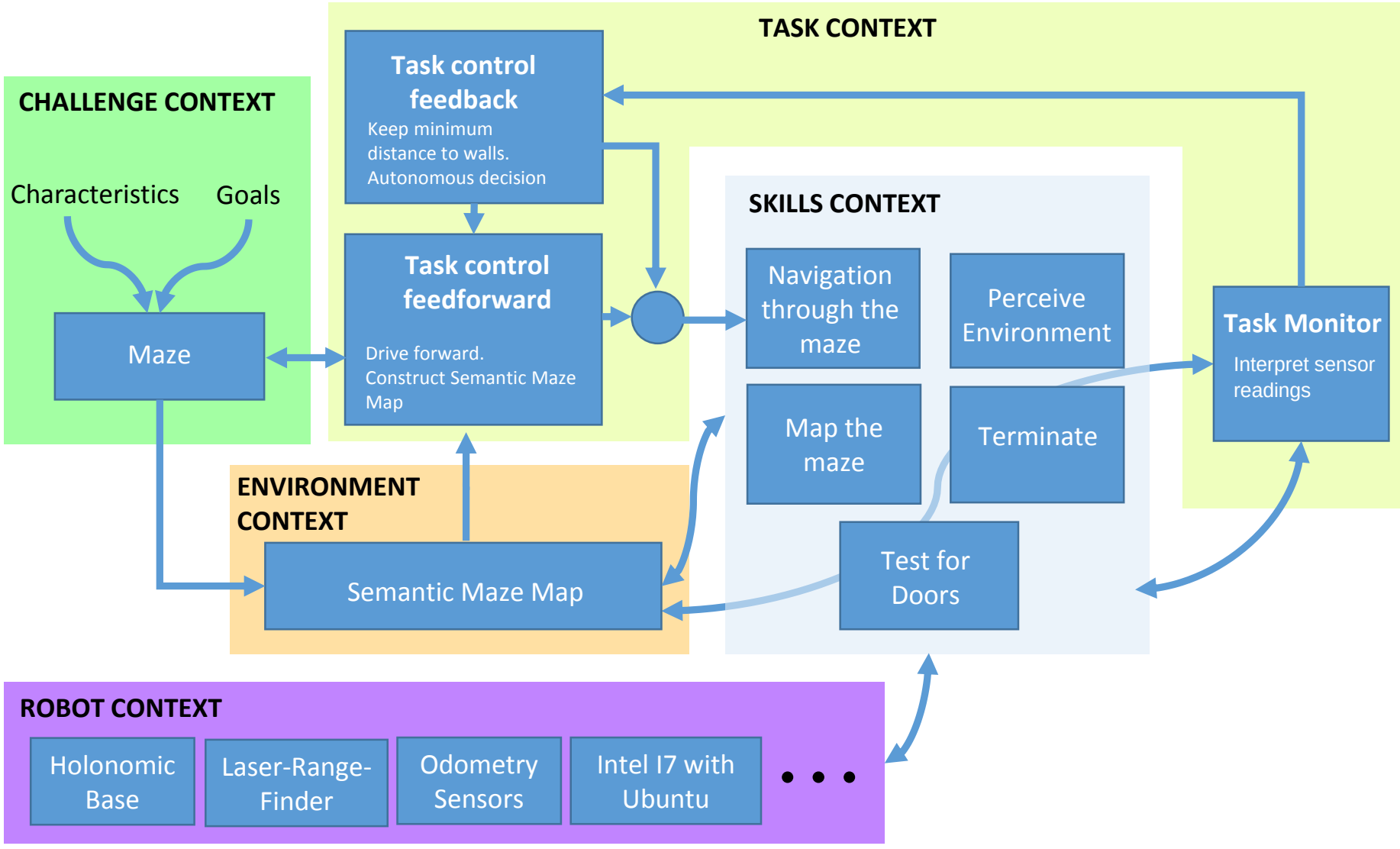
Functions

- **Basic movements**
  - Start, stop, move forward/backward, change orientation
- **Navigation (maze solving)**
  - Make autonomous decisions
  - Determine the completion of the maze
- **Maze mapping**
  - Build a semantic maze model
  - *"Test"* for doors

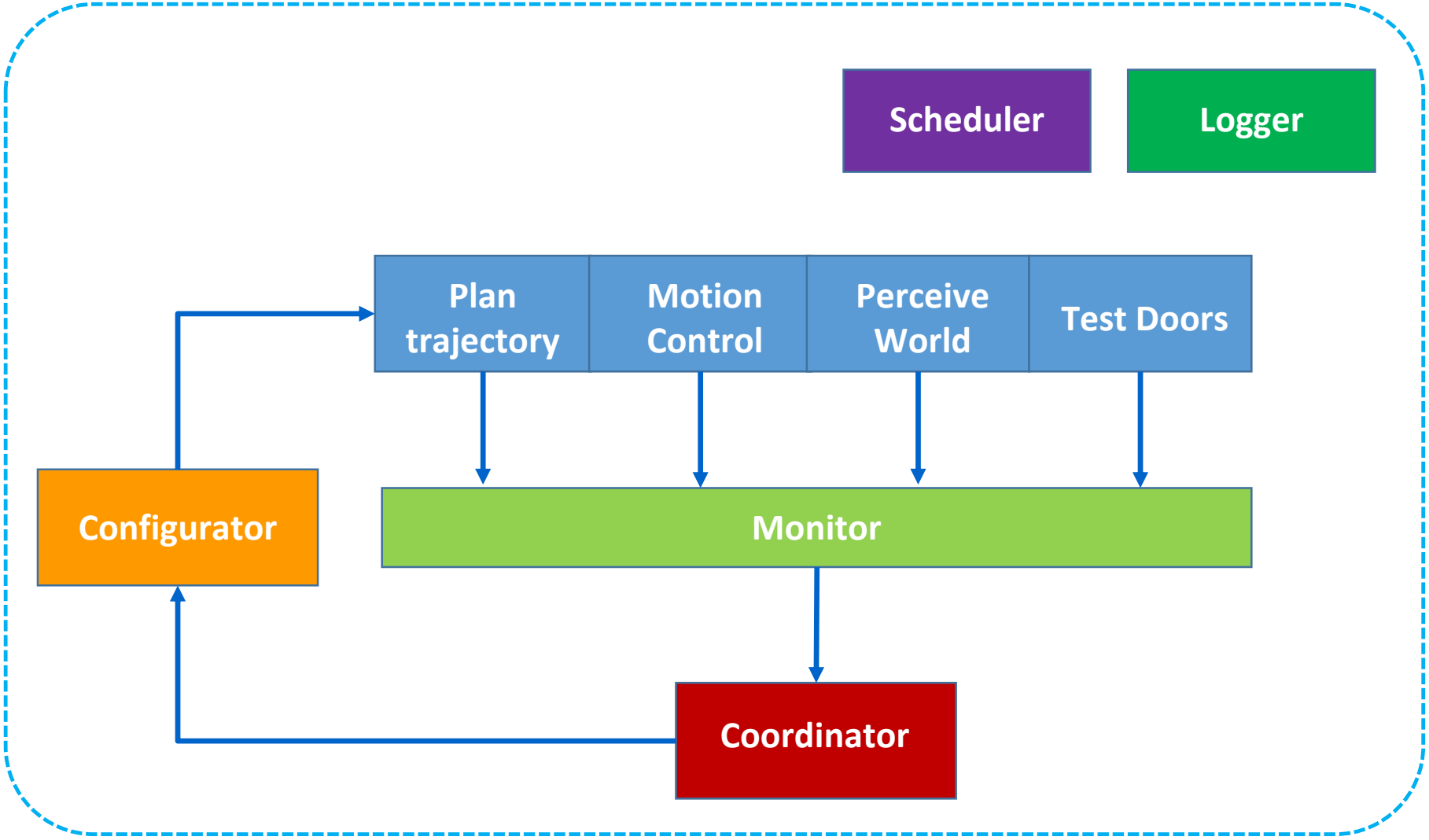


- **Safety functions**
  - Keep minimum distance
  - Kill switch command

“Task-Skill-Motion”- framework



Composition Pattern



Questions / Remarks….

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