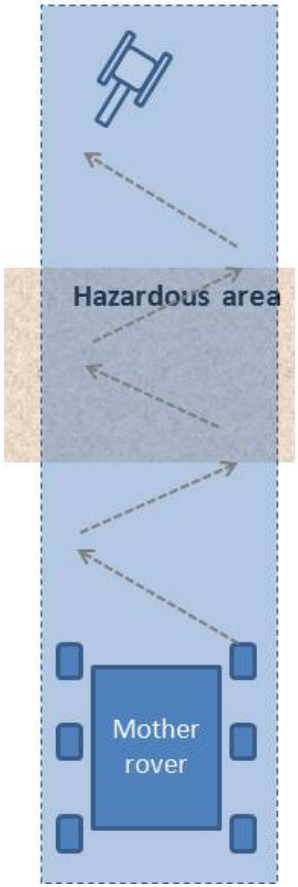
Faster Planetary Rover Traversal

Project Overview:

- Planetary rovers move very slowly
  - A number of mission critical hazards
  - Manually planned, simulated commands
- Faster traversal for exploration rovers
- Forward detection of terrain hazards

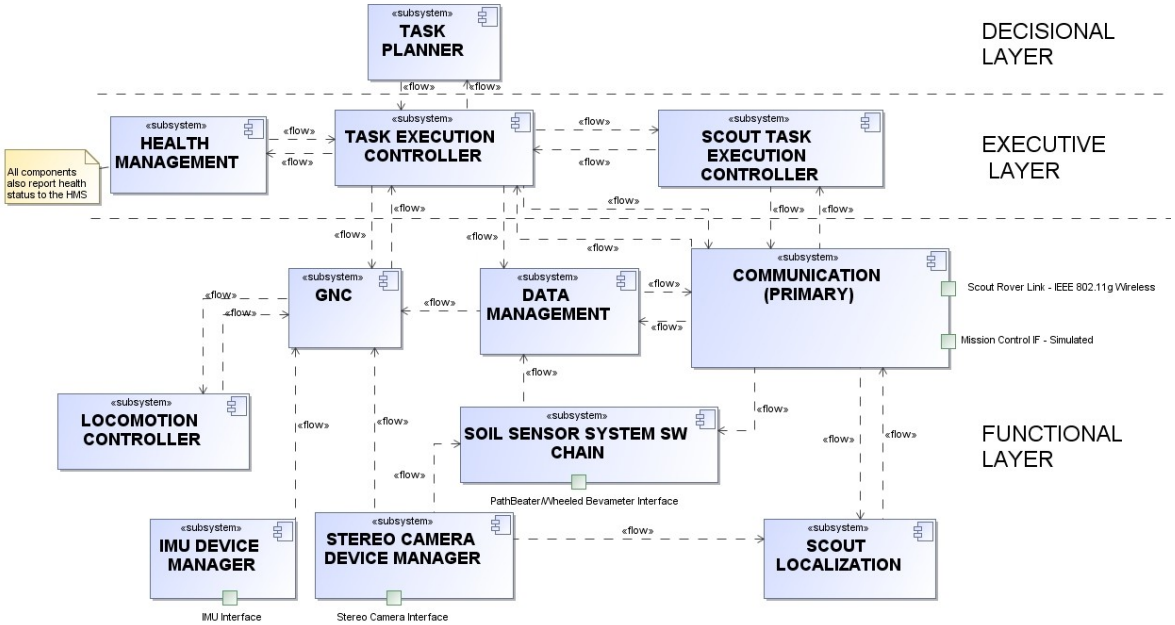
System Components:

- Primary Rover
  (ExoMars Locomotion Platform)
- Scout Rover
- Soil Sensors
- Cooperative Autonomy



Software Architecture

- Scout Rover with minimal autonomy – path following
- Primary Rover performs significant computation
- Implementation using GenoM/ROS combination

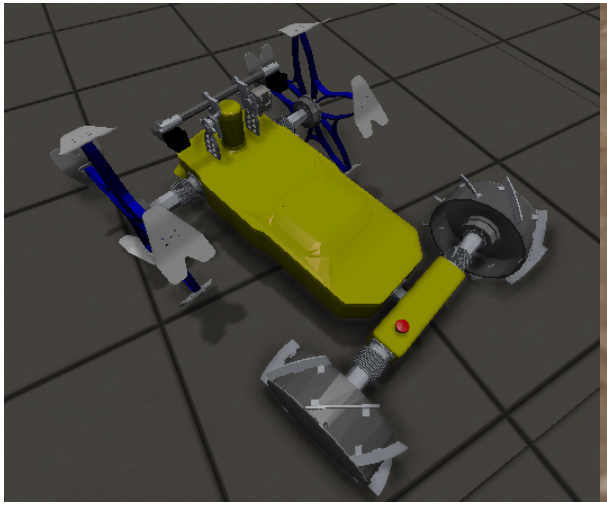


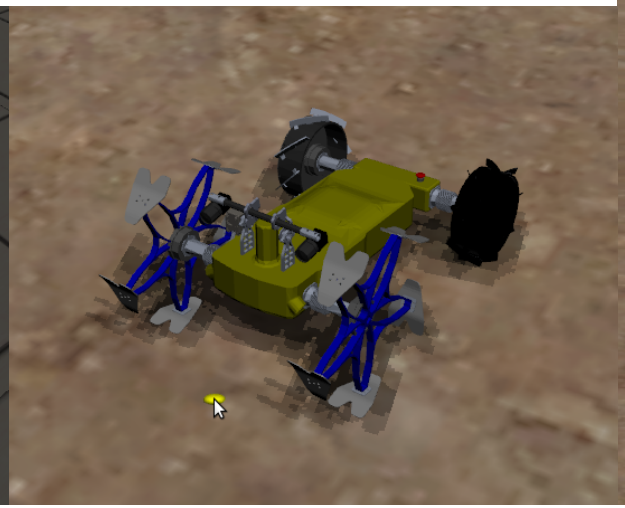
Focus on

- Task Planning
- GNC
  - Mapping
  - Localization
  - Path planning
- Scout Localization
  - Vision based

Validation in Simulation

- Gazebo / USARSim
- Environment models
  - Using Mars terrain maps from HiRISE imager
- Rover models
  - Scout Rover model implemented
  - ExoMars breadboard model
    - Waiting for final CAD





FASTER

Forward Acquisition of Soil and Terrain data for Exploration Rover

Thank you!

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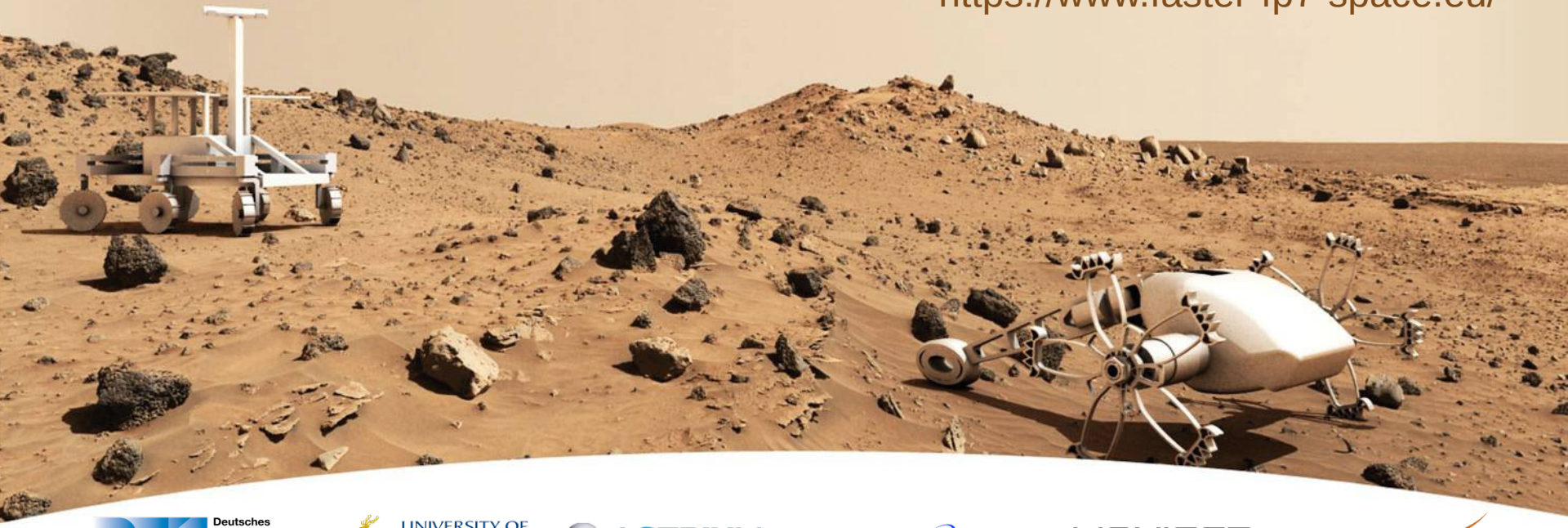

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SEVENTH FRAMEWORK PROGRAMME