SIA Workflow

Agents Roles

- **Rover**:
  - **Liveness**: explore terrain, analyze soil samples, detect resources
  - **Safety**: battery power, mobility constraints, not colide with objects

- **Drone**:
  - **Liveness**: map areas quickly, identify points of interest, relay data to rovers
  - **Safety**: battery power, not collide with objects

- **Base Station**:
  - **Liveness**: store collected data, recharge rovers/drones, coordinate logistics
  - **Safety**: must not destroy drones or rovers

- **Mechanic**:
  - **Liveness**: assures drone, rover and other mechanic agents are working properly, as well as fix them

Communication Protocols

Planetary environment

- **Challenges**:
  - storms (dust storms, rain storms)
  - terrain obstacles
  - equipment malfunctions
  - dynamic environment agents (hostile or friendly)???

- **Locations and Resources**:
  - terrain dynamics (mountains, valleys, …)
  - water spots, lakes, underground locations
  - minerals
  - caves

Goals

- Maximize coverage of mapping
- Minimize redundancy
- Find resources