1. **Wheel or Motor Failure:**
   - **Symptoms:** Sudden loss of mobility or control, abnormal noises.
   - **Response:** The rover should detect the failure and adapt its locomotion strategy, redistributing the load to functional wheels by altering torque of the wheel.

2. **Power System Issues:**
   - **Symptoms:** Voltage drops, sudden shutdown.
   - **Response**: The rover must have the capability to identify power issues and if such a situation arises the rover will give some sign of some kind , like glowing of a certain LED or an audible frequency emitter .

3.**Navigation Obstacles:**
   - **Symptoms:** Inability to navigate due to unexpected obstacles.
   - **Response:** The rover should employ obstacle detection algorithms using the 2D LiDAR and stereo camera to plan alternative paths or come to increase the torque of the wheel so that the rover can go through the obstacles.

4. **GPU Failure:**
   - **Symptoms**:Processing errors, loss of AI capabilities.
   - **Response:** The rover should have redundant processing capabilities and if the GPU fails it will turn on a LED.

5. **Sensor Calibration Issues:**
   - **Symptoms:** Incorrect data from cameras or LiDAR.
   - **Response:** The rover should have self-diagnostic capabilities to identify sensor calibration issues and recalibrate as necessary, or continuously update the real time mapping data .

6. **Mechanical Arm Malfunction:**
   -**Symptoms**: Failure to deploy, unexpected movements, or excessive force.
   - **Response:** The rover's arm faces a malfunction and it will enter a safe state, retracting the arm to avoid further damage.

7. **Navigation System Errors:**
    - **Symptoms:** Inaccurate positioning or mapping.
    - **Response**: The rover should have redundancy in navigation systems and the ability to cross-verify data to correct errors or continuously update the real time mapping data .

8. **Collision with Foreign Objects**:
   - **Symptoms**: Unexpected collisions with obstacles or other objects.
   - **Response**: The rover should use its sensors to detect and avoid collisions, slowing down or stopping if necessary.