Test	
Team I: Spring Validation Demonstration	
Mission Statement	
The Lunar ROADSTER uses the excavator to **groom one crater** in a **simple, straight path** in the Moon Yard.	
Objectives	
Demonstrate the rover's dozing capabilities in a simplified localization and path planning setting.	
Location	Planetary Robotics Lab Moon Yard
Equipment	Lunar ROADSTER rover, Leica TS16 total station, operations terminal (team laptop), NVIDIA TX2 relay chip, LAN router, FARO laser scanner
Subsystems	Sensors, computations (except validation unit and slope avoidance in navigation unit), external infrastructure, mechanical, actuation & electronics, electrical power
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Procedure	

Prior Setup:

1. Prepare the Moon Yard with a suitable crater and dune.
2. Scan the Moon Yard with a FARO Scanner to obtain a global map for navigation.
3. Attach and connect all the components and subsystems of the rover.
4. Set up the external infrastructure such as the total station in the corner of the Moon Yard, the LAN router, and the TX2 relay.
5. Place the rover in the Moon Yard and calibrate its localization using the total station.

During Demonstration:

6. Turn on the rover and SSH into the Lunar ROADSTER docker on the operations terminal laptop.
7. Switch the rover to autonomous mode and run the start-up procedure.
8. Observe the rover autonomous grade the crater and level the dune.
9. If anything unexpected occurs press the emergency stop button.

Validation Criteria
M.P.1: Will plan a path with **cumulative deviation of <= 25%** from chosen latitude's length
M.P.2: Will **follow planned path** to a **maximum deviation of 10%**
M.P.4 (Part 1): Will **avoid craters >= 0.5 meters**
M.P.5: Will fill craters of **up to 0.5 meters** in diameter and **0.1m in depth**