

Requirement #	Shall Statement	Verification success criteria	Verification method	Results	Pass/Fail
1.1, 2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 2.1.6	Course Description	1. Sojourner will completely ascend the incline. 2. Sojourner will completely descend three stairs. 3. Sojourner will make a full 180 degree turn within 1 meter. 4. Sojourner will complete the entire course (15 meters) in one battery life. 5. Sojourner shall finish the course in under 5 minutes.	Demonstration		
1.2, 2.2.1, 2.2.2, 2.2.3	Control Panel Telemetry	1. The Control Panel will display the correct phone battery level within 5% at all times. 2. The Control panel avatar will display the correct orientation and direction . 3. The Control Panel shall display custom widgets to control the servos. 4. The Sojourner battery level will decrease on the display when the battery reaches 20%.	Test		
1.3, 2.3.1, 2.3.2	Solar Charging	1. The Solar panel will increase the battery level while charging in the sun (no movement). 2. The Solar Panel will charge the battery from 3 to 3.7 Volts in 3 hours while stationary. 3. The Solar Panels will charge the battery with a current less than 600 mA. 4. The Solar Panel will charge the battery with a voltage between 5 and 7 volts.	Test		
1.4, 2.4.1	Cable Routing	1. There will be no loose hanging wires on the Sojourner. 2. Each motor and servo set of wires will be bundled for neatness. 3. Each bundle of wires will be secured with a mount. 4. Connections will be made with connectors and not	Inspection		

		solder. 5. The wires will be clipped on the side of the rocker bogie system.			
1.5, 2.5.1, 2.5.2, 2.5.3, 2.5.4	Differential Turning	1. The Sojourner shall receive RPM feedback within 5% error 2. The wheels on each rocker section (left compared to right) shall move at different speeds while turning. 3. The ratio of speed of opposing motors shall be proportional to the angle of the servos.			
1.6, 2.6.1, 2.6.2	Control Panel Drive Controls	1. The Control panel will move the Sojourner forwards and backwards using the D-Pad. 2. Control panel will implement a tank turn. 3. The Control Panel will turn the servos left and right.	Demonstration		
1.7	Arxterra Video Feed	1. The control panel will display the phones video feed. 2. The video feed shall be clear through the periscope. 3. The Periscope shall be adjustable to create the best field of view.	Inspection		
1.8, 2.8.1, 2.8.2, 2.8.3, 2.8.4	Downscaled model Sojourner	1. Our sojourner shall look like a downscaled version of the original JPL Sojourner. 2. The Motors shall provide enough torque to drive the Sojourner. 3. The Servos shall provide enough torque to turn the wheels.	inspection , Test		
Cost, Schedule, mass, 3DoT	Major Constraints	1. Sojourner will implement a 3DoT board. 2. Sojourner will be 3D printed. 3. Total weight of the Sojourner will be less than half a kg. 4. Sojourner will cost less than \$400. 5. Sojourner will be done by May 13th.	Inspection		