1. System Requirements Doc [Deliverable 1]

[REQ-1] Encoder Voltage Levels

The encoders shall produce a voltage pulse of 3.3 volts when rotated clockwise or counter-clockwise.

[REQ-2] Encoder Scale Factor

The encoders shall produce 500 ticks per inch of revolution in the clockwise and counter-clockwise direction.

[VER-1] Encoder Voltage Levels

REQ-1 shall be verified via test and the test shall be determined to be successful if pulses with a voltage of 3.3V +- 100 mV are displayed on the oscilloscope when each encoder is rotated in a clockwise and a counter-clockwise direction.

[VER-2] Encoder Scale Factor

REQ-2 shall be verified via test and the test shall be determined to be successful if a tread is mounted onto a set of wheels and translated 1 inch, and 500 +- 5 encoder pulses are measured in the python software console.

2. VCRM [Deliverable 2]

Requirement	Verification	A/I/D/T	Comment
REQ-1	VER-1	Test	
REQ-2	VER-2	Test	

3. Cost and Schedule [Deliverable 3]

Show initial PDR projections and schedule along with actual dollars and schedule. Highlight some risks and challenges that you ran into in order to explain the delta between estimated and actuals

4. System Level Verification Procedure [Deliverable 4]

Encoder Verification Test Set 1 [VER-1]

Test Setup:

        - Take tread off of all motors

        - procure oscilloscope

Test 1: Encoder 1

- Connect 3.3 V bench supply to pin TBD

- Connect oscilloscope probe to pin TBD

- Connect oscilloscope probe ground to pin TBD

- rotate motor clockwise looking at the motor from the outside

- record data

- rotate motor counter- clockwise looking at the motor from the outside

- record data

Test 2: Encoder 2

Test 3: Encoder 3

Test 4: Encoder 4

Encoder Verification Test Set 2 [VER-2]

Test Setup:

- Apply treads to motors if not already on

- procure oscilloscope

- ensure all encoders are powered

- load Snick with test software XYZ

Test 1: Encoder 1, 2 Coincidence

- Connect encoder 1 and 2 signals to the oscilloscope

- Translate the tread associated with encoders 1 and 2, 1 inch and verify that both channels produce 3.3V coincident pulses on the oscilloscope

- record data

Test 2: Encoder 3,4 Coincidence

    - Connect encoder 3 and 4 signals to the oscilloscope

    - Translate the tread associated with encoders 3 and 4, 1 inch and verify that both channels produce 3.3V coincident pulses on the oscilloscope

    - record data

Test 3: Encoder 1,2 scale factor

    - Translate the tread associated with encoders 3 and 4, 1 inch and verify that both channels produce 500 counts shown in the python console

    - record data

Test 4: Encoder 3,4 scale factor

    - Translate the tread associated with encoders 3 and 4, 1 inch and verify that both channels produce 500 counts shown in the python console

    - record data