

## Validation and Schedule Plan

### PIC Master Tasks

1. Integrate PIC master to PIC slave via I2C (Thomas & Darius)
  - 2 PIC boards will be connected to each other via I2C communication. One will be assigned master and the other will be slave.
2. I2C communication Testing/Simulation (Thomas)
  - The I2C will be tested to make sure communication is as expected between the PIC slave and the motor controller. Stress testing will be done at this point.
3. Integrate PIC master to ARM via WiFly UART (Ben & Thomas)
  - The master PIC board and the ARM will each be connected to their respective WiFly modules through UART. They will then be integrated to communicate with one another.
4. Integrate Motor Controller to PIC Master via Serial (Thomas)
  - The motor controller will be connected to the PIC master via Serial and receive motor commands.
5. Motor Controller Data Testing/Simulation (Thomas)
  - The motor controller needs to be tested to see if it can successfully execute commands, as well as to determine the time and range of voltage to apply to the motor.

## Validation and Schedule Plan

### PIC Slave Tasks

1. Integrate Laser sensor onto PIC slave (Darius)
  - Any laser sensors will be integrated onto the PIC slave
2. Integrate Infrared sensors with PIC slave (Darius)
  - Any infrared sensors will be integrated onto the PIC slave
3. Sensor Data Testing/Simulation (Darius)
  - This task applies to all three sensor types. The sensors will be tested/simulated after being integrated with the PIC to make sure they are working correctly and can provide usable information.
4. Integrate PIC slave with PIC master (Darius & Thomas)
  - The PIC slave device will need to be integrated with the PIC master
5. I2C communication Testing/Simulation (Darius)
  - Communication testing between the PIC slave and PIC master will be tested/simulated for correctness and feasibility. Stress tests will be performed at this stage.

## Validation and Schedule Plan

### ARM Tasks

1. ARM to PIC master integration via WiFly UART (Alazar):
  - The ARM will be integrated to the WiFly module via UART. This will then be connected with the PIC master device.
2. WiFly Data Testing/Simulation (Alazar)
  - After a connection has been established, data transmission testing/simulation will be done between the ARM and PIC master. Stress testing may occur at this point.
3. Sensor Processing Algorithms (Alazar):
  - Once the ARM can receive data, the algorithm for processing the data will be created and tested.
4. Navigation Algorithm and sending commands to PIC master (Alazar)
  - Using the computed results from the ARM data, an infrastructure on command types and types of data will be created. These commands will be sent to the PIC master and tested.
5. Mapping Algorithm (Alazar)
  - The mapping algorithm will be created once communication is established to determine the location of the rover.
6. Webpage Controls, Data I/O, User Input (Alazar)
  - The webpage design will be implemented and will make use of the mapping algorithm in order to complete the additional tasks.

## Validation and Schedule Plan

### Other Tasks

1. Integrate IMU unit to the I2C Bus (Ben):
  - The IMU can be addressed via I2C, this task will integrate it with the PIC Master
2. Determine parts-list for PIC Master (Ben):
  - Figure out what needs to be bought for the breadboard design
3. Breadboard design of the PIC Master (Ben):
  - Make the PIC Master on a breadboard with the parts bought
4. Protoboard design of the PIC Master (Ben):
  - Once the breadboard works, solder things permanently to a protoboard
5. PIC Master Hardware Swap (Ben & Thomas):
  - Swap in the newly designed PIC Master

## Validation and Schedule Plan

### Gantt Chart

[illegible]

## Validation and Schedule Plan

Integrate Motor Controller to PIC Master									
Integrate Infrared Sensors to PIC Slave									
Integrate Laser Sensors to PIC Slave									
Integrate IMU unit to I2C Bus									
ARM Sensor Processing Algorithms Created with Simulated Data									
Breadboard Design/Testing of the PIC Master									
Sensor Data Testing and Simulation									
Motor Control Testing and Simulation									
ARM Webpage									

# Validation and Schedule Plan

Controls										
Proto-board Design/Testing of the PIC Master										
ARM Navigation Algorithm										
Misc Testing and Debugging										
	Oct. 1	Oct. 8	Oct. 15	Oct. 22	Oct. 29	Nov. 5	Nov. 12	Nov. 19	Nov. 26	Dec. 3