

Status	Item	Team Member Assigned	Estimated Due Date	Team Member Lead	Completed	Description
Completed	Determine feasibility of DWM1000 module as ranging component for robots	Schafer	1/26/2017	N/A	1/19/2017	Verify that the DWM1000 ranging module will not conflict with the existing technologies used by the robots (Bluetooth, Zigbee,...)
Unassigned	Determine the design requirements of the DWM1000 (placement, power supply, etc.)	Not Documented	1/26/2017		Not Documented	Also, determine the restrictions of the device in terms of placement in the robot and proximity to other components to prevent interference.
Completed	Breakout Board Design for DWM1000 Module	Schafer	2/2/2017	N/A	1/27/2017	Make a brekaout board design for the DWM1000 that allows it to easily interface with the PIC32 development boards we have.
Completed	Demo of Ranging Module with PIC (2)	All	2/2/2017	Kate, Eddie, Stephen	2/8/2017	Determine the range and resolution of a 2 transmitter setup. Determine if range can be improved in the Arduino Code
Completed	Proposal for Wifi Communication System	Kate, Stephen	2/9/2017	Stephen, Eddie, Kate	2/9/2017	Wifi based communication system to pass data between initiator and computer. Use MQTT topics.
Abandoned	Proposal Wireless Timing Scheme	Eddie	2/16/2017	Eddie	N/A	Code and basic structure for wireless sychronization. Demo of synchronized clocks. Dependent on getting interface to DWM1000 going. Unnecessary if we do not use TDOA method.
Completed	Basic SPI Test to DWM1000	Eddie	2/16/2017	Eddie, All	2/10/2017	Simple connection to DWM1000 via SPI interface
Completed	Replicate Arduino Code for Communication	All	2/16/2017	All	2/14/2017	Create a code that allows for communication between the DWM1000s similar to the Arduino function
Completed	Demo of Wifi Communication System	Kate, Stephen	2/16/2017	Eddie, Stephen	2/15/2017	Simple demo of the proposed Wifi based communication system using 2 nodes.
Completed	Add Magnetometer	All	3/9/2017	All	3/3/2017	Choose a part and create a code to use a magnetometer for orientation of robot because distance isn't enough for positioning

Completed	Board Design	Eddie, All	3/9/2017	Eddie	3/6/2017	Design a board with PIC32, DWM1000, and ESP modules to use on the robots.
Completed	Create Working API	All	2/9/2017	Kate, All	3/8/2017	Code an API to communicate between the DWM1000 to the PICkit3
Completed	Interface to DWM1000	Matt, All	2/9/2017	Kate, All	3/9/2017	Communication and interfacerequirements, preliminary Code to work with DWM1000. Simple connection test.
Completed	Demo of Ranging Module with PIC (3)	All	3/9/2017	Kate, Eddie, Stephen	3/10/2017	Determine the range and resolution of a 3 transmitter setup. Determine if range can be improved in the DWM Code
Completed	Test Range and Calibrate Delays	Stephen, All	3/23/2017	Stephen, Eddie, Kate	3/22/2017	Test the accuracy of the range on the DWM1000 and calibrate the delays in the code to make the distance measurement more accurate
Completed	Manufacture Boards	Eddie, All	4/6/2017	Stephen, All	4/4/2017	Build and test the PCBs
Completed	Connect to Magnetometer	Not Documented	3/30/2017	Stephen, Eddie	4/11/2017	Run preliminary communication code to magnetometer and get/ interpret the data received
Completed	Complete Code for DWM1000	Kate, All	3/9/2017; Pushed back to 4/20/2017	Kate	4/13/2017	Create one main file (with necessary source files) to completely program the DWM1000 and send distance data to UART where it can be used in Wifi system
Completed	Wireless data transfer	Stephen, All	4/20/2017	Eddie, Stephen	4/24/2017	Install ESP8266 on board. Modify code to connect PIC (UART3) and GUI to the MQTT server in order to relay needed data to the server and gather that data from the server
Completed	Interface with Magnetometer	Stephen, Eddie	4/20/2017	Stephen, Eddie	4/24/2017	Basic request for device ID completed. Create code to acquire orientation data, process it, and send it to PIC (UART3) which send it to the Wifi system
Completed	GUI and Data Visualization	Matt	3/1/2017; Pushed back to 4/20/2017	Kate, Eddie	5/3/2017	GUI for visualizing sensor field position. Will connect with Wifi (MQTT)