

Multi-Robot Localization Update

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Outline

- ▶ Goals from Last Meeting
- ▶ Goals Achieved
- ▶ Issues
- ▶ Goals for Next Week
- ▶ Specific Actions
 - Zigbee
 - BBB
 - Repairs
- ▶ Priority List
- ▶ Questions

Goals from Last Meeting

- ▶ Setting up Zigbee boards for communication
- ▶ Getting the Beagle Bone communicate to the Zigbee board over the Zigbee USB interface.

Low Priority

- ▶ Trouble shoot why certain boards don't works

Goals Achieved

- ▶ Was able to get the Zigbee boards to work through XCTU.
- ▶ Working on getting the Beagle Bone to communicate to the USB interface.

Issues / Pictures

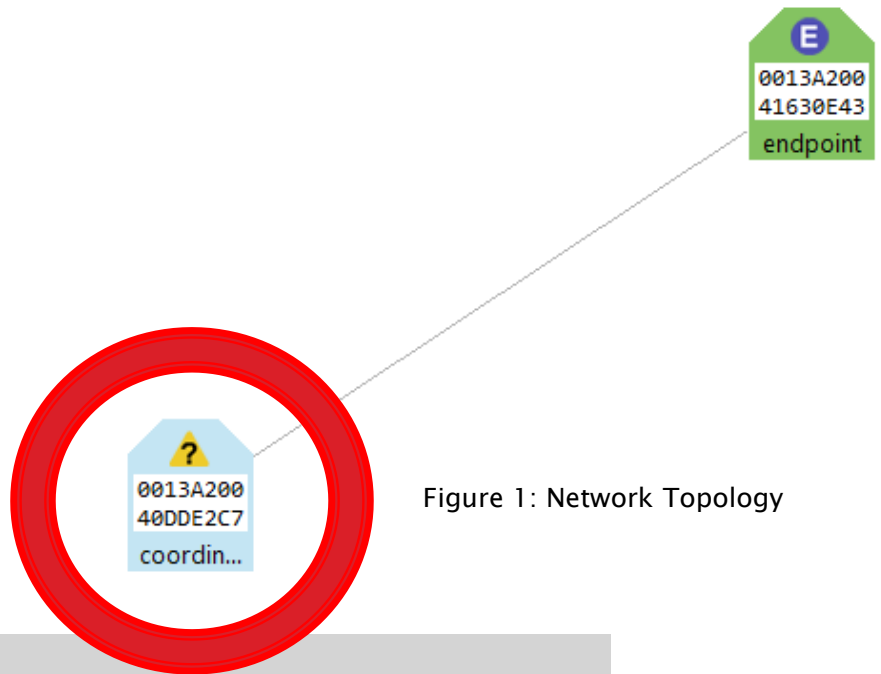


Figure 1: Network Topology

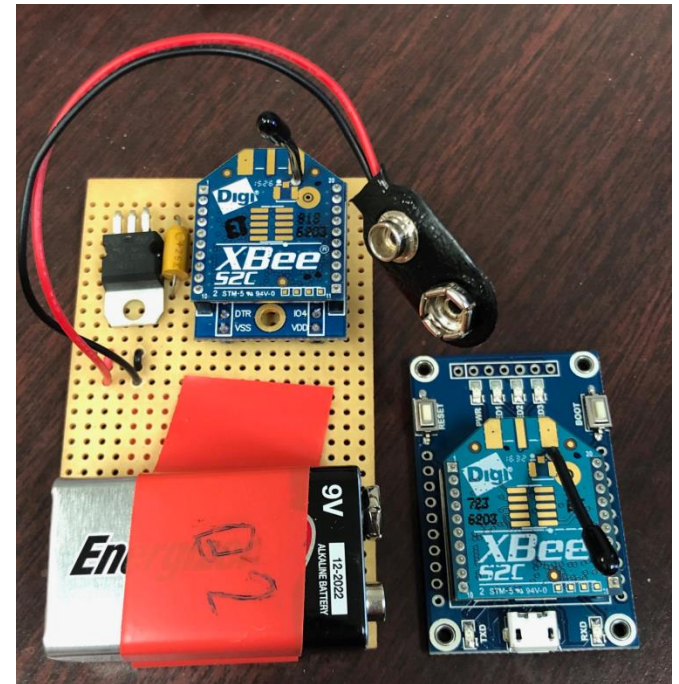
Frames log

	ID	Time	Length	Frame
➡	0	11:30:20.678	4	AT Command
⬅	1	11:30:20.783	28	AT Command Response
➡	2	11:30:34.914	17	TX (Transmit) Request 64-bit address
⬅	3	11:30:34.995	3	TX (Transmit) Status

Figure 2: Frame Log of Connection

Issues/Pictures

- ▶ Need another board set up for the third Zigbee board
- ▶ BBB
 - IP configurations aren't working and need to download files for interface



Goals for Next Week

- ▶ Get the PC to read the Zigbee boards
- ▶ Get the Beagle Bone connected to the USB interface and reading information
- ▶ Get three Zigbee boards connected in a network and communicating properly

Optional/least priority:

- ▶ Determining why the other Zigbee boards aren't working

Specific Actions – Zigbee

- ▶ Zigbee boards have two general settings, transparent and API. Setting to API for remote communication (API mode is more oriented for remote communication).
- ▶ Figure out how to send remote commands from PC to Zigbee board to read data

Specific Actions – BBB

- ▶ BBB Connection: Found a source that has python tool for working with Xbee, will try to download that and get that working.
 - Currently having some IP configuration issues
- ▶ Need to get Zigbee Boards to send the information I want. Will look into how API mode works and what messages to send

Specific Actions – Repair

- ▶ Will try to force a firmware update through XCTU to forcibly reset the boards that don't connect.



Image: DIGI XCTU Logo, refer to References for source

Priority List

1. PC to Zigbee board communication.
2. Zigbee network setup
3. BBB to Zigbee
4. Investigate the other boards to see why they didn't connect.

Questions?