Indoor Mobile Robot Localization and Mapping

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Outline

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Introduction

Goal of project is to implement XBee modules to to localize a mobile robot using Caley-Menger determinant's based on signal strength.

Network Diagram

Diagram of ZigBee network

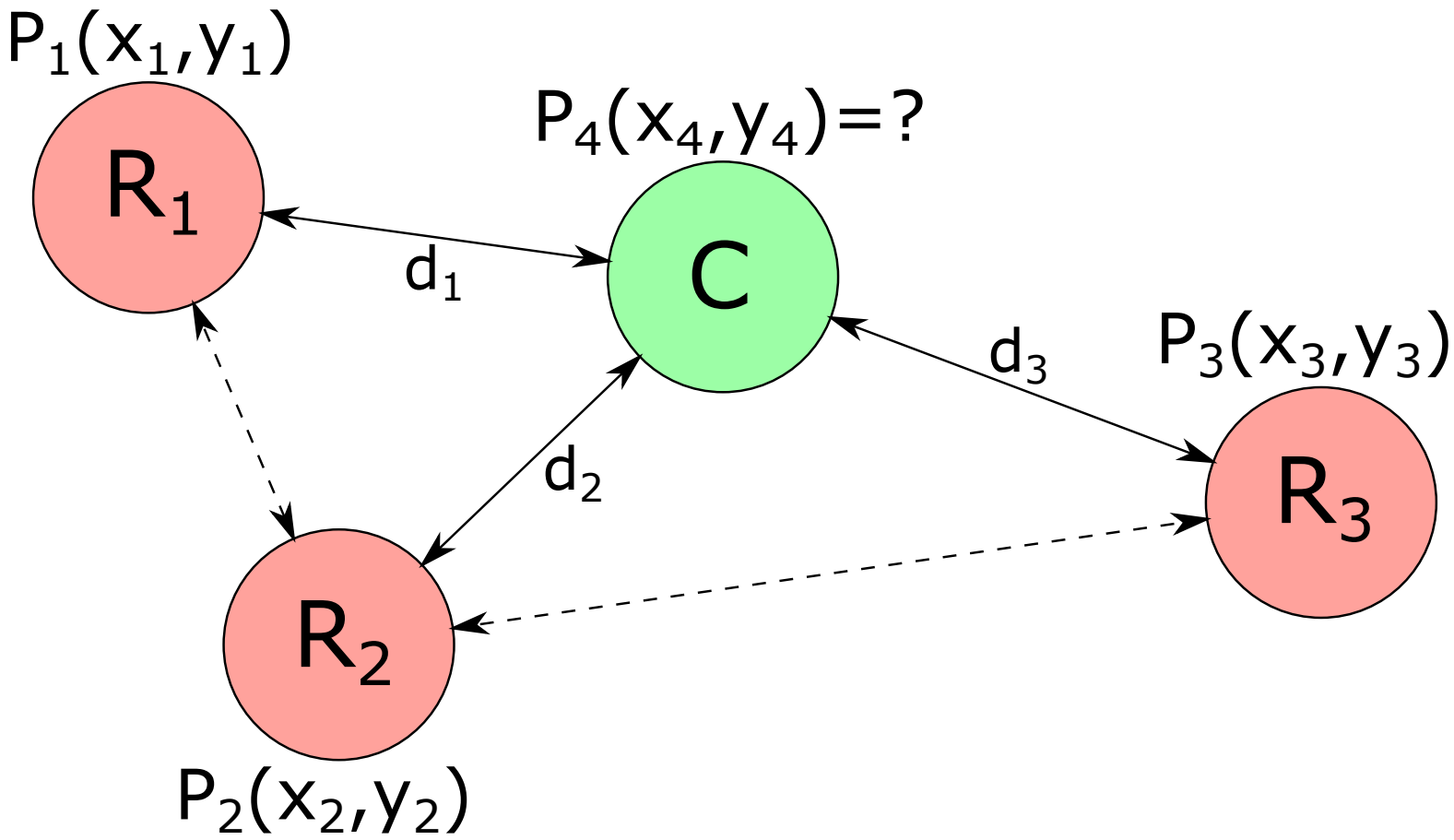

Figure: ZigBee network diagram

Diagram breakdown

- Configurable types
  Coordinator (C), Router (R), Endpoint(E),
- Points P_1, P_2, and P_3 are known P_4 is the unknown position of the mobile robot
- Distances d_1, d_2, and d_3 from dB reading

What Has Been Done

- XCTU
  - Setup
  - Cleaned up settings
  - Test commands
- commands
  - AT Command – Working
  - Remote AT Command – Not Working
- Testing Power?

Future Directions

- Remote AT Command
- Beglebone to XBee interfacing
- Testing Power?
- Wiki Page?