S A S S Y
Simple Assessment of Signal Strength & Yield

Team High Notes:
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Web Controls

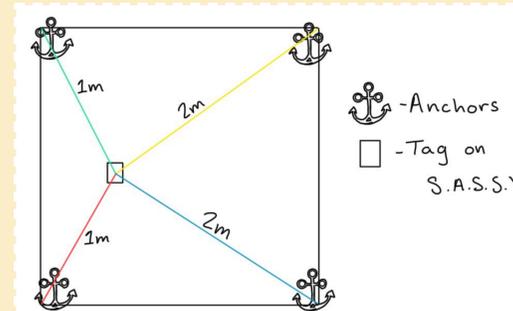- User defines movement path for robot.

Overview

SASSY is an autonomous robot that maps the WiFi signal strength in a room.
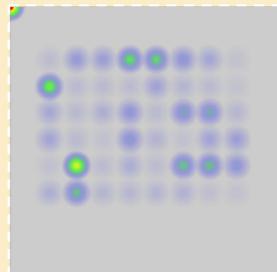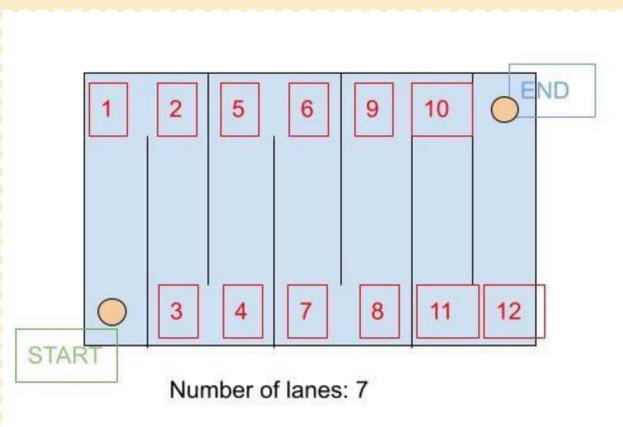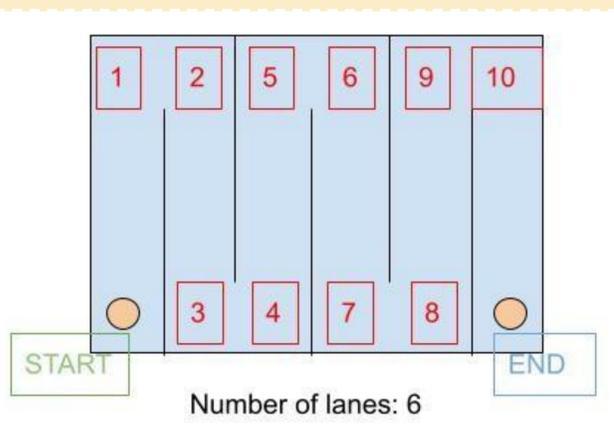
Important Technology

- Microcontroller - **ESP32-C3**
- Ultra-Wideband (UWB) - **DWM1001C**
- Motor driver & Motors
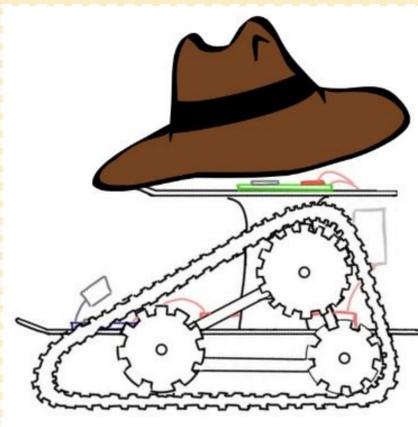- Rechargeable LiPo battery
- Custom PCB

Navigation Algorithm

- SASSY carves out 30.48 cm "lanes"
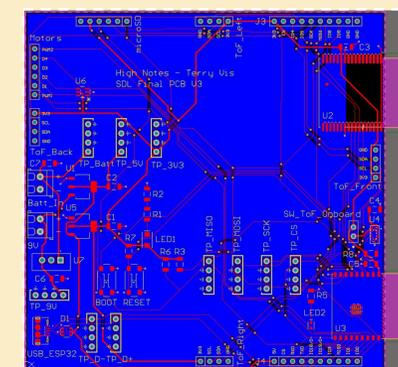- Vertical stripes = Room Width/ 30.48
- SASSY leaves 60.96 cm to turn

Number of lanes: 6

Number of lanes: 7

Legend
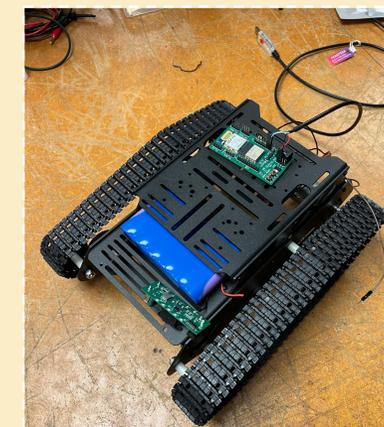*SASSY* - Orange Dot
Checkpoint - Boxed Red Numbers

Shown top left: Early PCB design
Shown in top right: UWB set up with anchors and tag.
Shown bottom right: Early stages of SASSY
Shown bottom left: Final custom PCB schematic in Altium

Acknowledgments

Major Applications

- **Strategic placement of APs** in office building or university campus
- **Enhances WiFi connectivity**
- **Educates** about real-world applications of RF signals