

Robot Builders Night Virtual for November 4th, 2025

[DPRG RBNV - Robot Builders Night Virtual - November 4, 2025 - YouTube](#)

Main Discussion Points

Mike Williamson's Robot Project:

- **Localization and GPS Integration:** Mike provided an update about his progress on integrating GPS with ROS 2 for his robot. He detailed the use of extended Kalman filters for local and global localization transformations and demonstrated his setup on GitHub.
- **Demonstration Challenges:** He shared experiences dealing with IMU calibration, lidar scanning, and time of flight sensors for robust navigation.
- **Real-world Testing:** Mike discussed obstacles encountered in real-world testing conditions, including sensor drift and calibration challenges.
- **Future Plans:** Plans to further investigate GPS integration issues and refine localization for outdoor testing were mentioned.
- Black star ★

Scott Gibson's Robotics Demonstration:

- **Obstacle Avoidance:** Scott showcased his robot Belch's capabilities in obstacle avoidance and target acquisition (cone detection) using lidar and GPS coordinates to navigate effectively.
- **GPS and RTK Integration:** He discussed the use of RTK for precise navigation and demonstrated obstacle navigation as well as route planning for competition readiness.
- **Software Stability:** Scott emphasized improvements in software stability and usability, targeting a perfect score in upcoming competitions.
- Gold star ★

Doug Paradis Presentation:

- **DFRobot Sensor Overview:** Doug demonstrated a new cost-effective sensor for robotic applications – an 8x8 array with simple interface options and a built-in microcontroller, suitable for indoor use.

- **OpenAI Codex Integration:** He shared insights on utilizing OpenAI Codex for simplifying coding tasks in Visual Studio Code, providing a live demonstration of its capabilities.

Ray Casler's Quick Project:

- **Obstacle Avoidance Scheme:** Ray briefly demonstrated a quick prototype for obstacle avoidance using a PulseLite lidar sensor and a microcontroller, illustrating basic directional guidance logic.

Conclusions and Insights

- Participants showcased different methods and technologies for improving robot navigation and obstacle avoidance, focusing on integrating sensor data for localization.
- Consensus was toward continuous iterative testing and development to tackle localization challenges, particularly for competitive events.
- Participants shared thoughts on useful tools, sensors, and components available in the market for enhancing robotic projects.