

SUPERPOWERED GUIDED MISSION WITH RELIABILITY TECHNIQUES

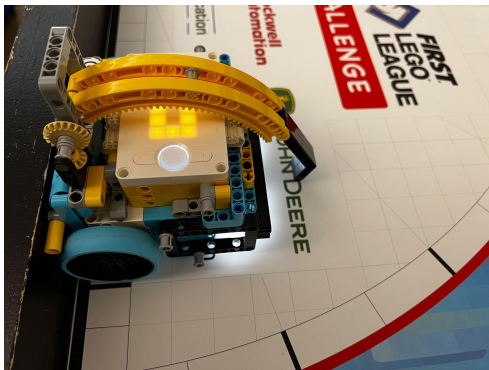
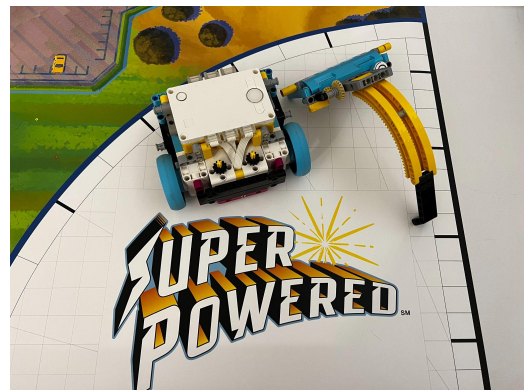
FIRST provides all teams with the solution to the Smart Grid mission. This is an alternative solution to the same mission, incorporating reliability techniques along the way.

Why bother?

The most difficult part of the robot game is achieving consistency. You can build and program to be more reliable. Learn more [here](#). The goal of this lesson is to show you how to create more reliable runs that you can incorporate into your robot's design and code and for other missions.

Robot:

You can adapt these techniques to any robot. In this example we use [DroidBot M](#) which is a compact design made with mainly one main SPIKE Prime set. The attachment arm used requires additional parts. This is just a basic example.



Starting Location:

Use walls and markings on the challenge mat where possible. We use the first dark/thick line on the South wall in the Left Launch Area.

These will ensure that you are straight and help you start consistently. Aligning on walls at other times to straighten out is also helpful.

The path:

I chose a different path to solve the Guided Mission because traveling North from the Left Launch Area gives me a more reliable method of line following. The only line available in the current method is split (with a large image in the middle) that makes line following more difficult. In addition, going North opens up additional possibilities of completing other missions that may use the same attachment. When your team comes up with a strategy, think about a path that might reuse the same attachment.

Using Sensors to Navigate:

I use a proportional line follower, but this solution can be modified for a simple line follower as well.

Resources:

Primelessons.org - Programming Lessons

Reliability Webinar -

Code:

The code below is split into two screenshots only due to length. Please download the code file from <https://flttutorials.com/en/Worksheets.html>.

