Charles (CJ) Hardnett

Rockdale Magnet School for Science and Technology

Robotics in the Navy: Extinguishing Fires on Aircraft Carriers

The goal of this experiment is to test the ability for robots to communicate using Bluetooth and be able for the sender to read a color value or an RFID value and send that value to the receiver and then the receiver report to the designated location that it was sent. It will then be able to use an infrared sensor to be able to find an infrared ball that emits infrared light.

For the color test, there will be 2 NXT Lego Robots used, the sender and the receiver. The sender will send the receiver a message that is a number that will be representing a color on a mat with 9 different colors on it. The number sent also represents, theoretically, where the fire on the carrier is located. Based on the number it was sent, the robot will choose one of the programs in its system to find the quickest way to get to the "fire". For the RFID test, there will be 2 NXT Lego Robots as well, the sender and the receiver. The only difference between this test and the color test is the fact that the sender will be sending the robot a radio frequency number such as .7786543902 and the receiver will be picking a program to find the quickest way to the RFID tag (where the fire is located) that it was sent.

The goal of the experiment was accomplished. The robot was able to locate the zone of the fire and then locate the direction of the fire in both the color sensor and the RFID sensor tests. As an actual product, the robots would not be made out of Legos, but instead with a durable metal. It will probably use RFID to find the zone of the fire, as colors can lose their pigments over time and can become dirty. There would also not just be finding the location of the fire, but it would also be able to extinguish a fire using a hose or another method of suppression. The target demographic for this product is the Military and also homes in which people who aren't able to extinguish fires aren't in danger. There would be two logos: one being would be a robot extinguishing a fire with a soldier in the background, and the other being a robot extinguishing a fire with a family in the background. The next step is to actually build a robot that is able to find the location of a fire in a house or school from scratch using durable metals and an Arduino.