Hexapod navigation using LPS

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February 13, 2018

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Introduction

We are implementing a Wireless signal based LPS(Local Positioning System) and using that system we will navigate a hexapod in a wifi enabled region.

Wifi based LPS

This involves location calculation based on distance from four radio nodes wherein we estimate the distance from a particular node by employing a numerical estimator which takes in the signal strength and outputs the distance.

Hexapod implementation

The Hexapod movement would include a thorough control system analysis and a synchronised movement of 18 servos. The orientation of the bot is calculated using magnetometer reading which would be used to align the bot in the right direction. We are planning to 3D print the body and legs of the bot.

Combined Implementation

The hexapod could be instructed to move from point A to point B in the region by selecting two points on a GUI interface and then a path calculating algorithm running on the bot or the host can provide the appropriate steps for the same.

Wow Factor

In indoor wifi regions where a GPS based location is of less use than a local position, this type of system can be of use. For example in Warehouses where a wifi/radio connection is available, and movement of stuff can take place through bots this type of system can automate their motion and provide them the optimum paths.

Thank You