

Building and Maintaining Multirobot Formation

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Outline

1 Introduction

2 Sensor

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2 Sensor

Definition: Formation

Definition

A formation is a directed graph $G = (V, E)$, where vertices represent the individual robots and the labeled edges represent geometric constraints that are maintained by the robots.

Example: Formation

Example

- Line
- Wedge
- Diamond

Example: Formation



Figure : Robot Formations. (Source: Naffine, PhD thesis 2006, USC)

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1 Introduction

2 Sensor

Sensing Capabilities

Robots need to be able to sense the following

- Avoid obstacles
- Distinguish other robots
- Determine range and heading of other robots relative to itself

Sensors

Sensor we will use:

- Radio
- IR Transceiver
- Motion Capture

Formation for this project

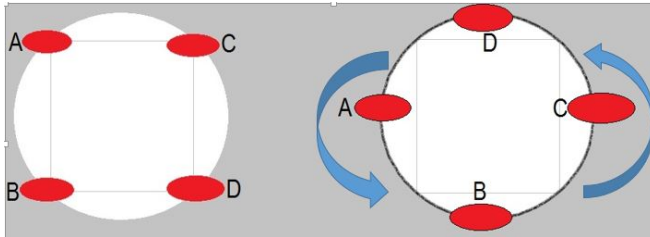


Figure : Robot Formations.

Formation for this project

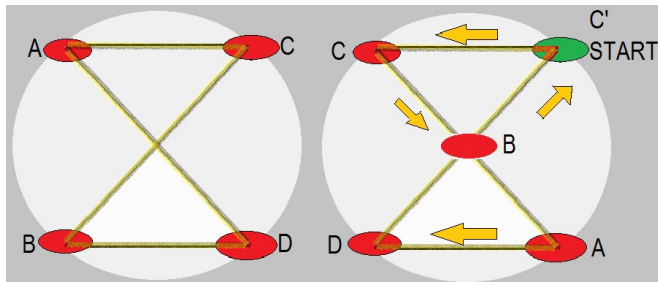


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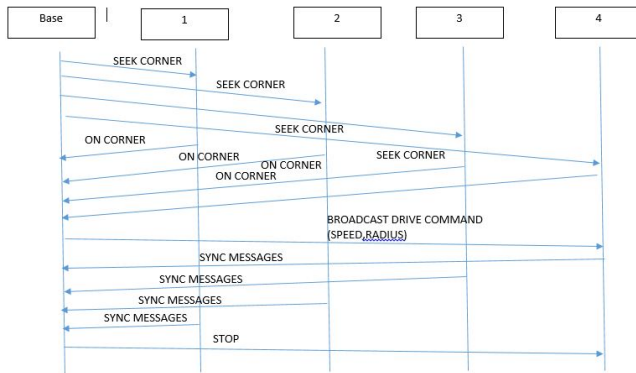


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