



Robotic Merit Badge Robotics Competition

- ▼ Merit Badge Counselor: Maurice Ling
- ▼ August 29, 2016



Competition Rules

- ▼ Competition Rules may be found at <https://github.com/mcli/RoboticsMB/blob/2016/doc/2016RoboticsCompetition.ora>



Competition Teams/Score Board

| | Relay Segment | Give Us Two More Minutes (GUTMM) | Design Points | Time | Caps Lock Crusaders (CLC) | Design Points | Time |
|---|----------------------|----------------------------------|---------------|------|---------------------------|---------------|------|
| 1 | Light Navigation | Tin | | | Yannik | | |
| 2 | Line Maze | Caleb | | | Matthew | | |
| 3 | Ping Pong Collection | Spencer | | | Praneet | | |
| 4 | Speedway | Brennan | | | Connor | | |
| 5 | Push the Cans | Tyson | | | Logan | | |
| 6 | Clap Control | Ryan | | | Mateo | | |
| 7 | Search and Rescue | Xian Lun | | | David | | |



Judge Panel

▼ **Mr. Mark Winters**

- ▼ Senior Program Manager at Western Digital
- ▼ 20 years experience as a Mechanical and Industrial Engineer.
- ▼ Eagle Scout Troop 20 Oklahoma City

▼ **Mr. Lawrence Voelz**

- ▼ Electrical Engineer at Raytheon Corporation
- ▼ 40 years experience working in Defense industry
- ▼ Integration and testing of the ATLFIR (Advanced Targeting Forward Looking Infrared) sensor on board the F/A-18 fighter jet.



Relay Segments

| | Segment | Description |
|---|-------------------------|--|
| 1 | Light Navigation | Autonomous navigation to the light while avoiding obstacles. |
| 2 | Line Maze | Autonomous line maze navigation while avoiding dead-end obstacles. |
| 3 | Ping Pong Collection | Remote controlled ping pong collection into a tray. |
| 4 | Speedway | Remote controlled driving through a race course |
| 5 | Push the Cans | Push three 6 oz cans into a designated area. |
| 6 | Clap-Controlled Driving | Control a robot to navigate through a course by clapping. |
| 7 | Search and Rescue | Search for a target (Big black dot) and then head to the light. |

* Autonomous hand-off between segments



Hand-Off Handshake

- ▼ Hand-off between robots should consist of the following components:
 - ▼ Receiving Robot should beep 3 times
 - ▼ Sending Robot should blink LED 3 times.



Scoring Summary

- ▼ +30 Points for Design
- ▼ +20 Points scored for each segment completed
- ▼ +10 Points for best time per segment
- ▼ Penalty points for each occurrence:
 - ▼ -5 Physical Intervention
 - ▼ -5 Exceeded 5 minute time limit per segment
 - ▼ -5 Excessive barrier/boundary movement
 - ▼ -5 Improper hand-off



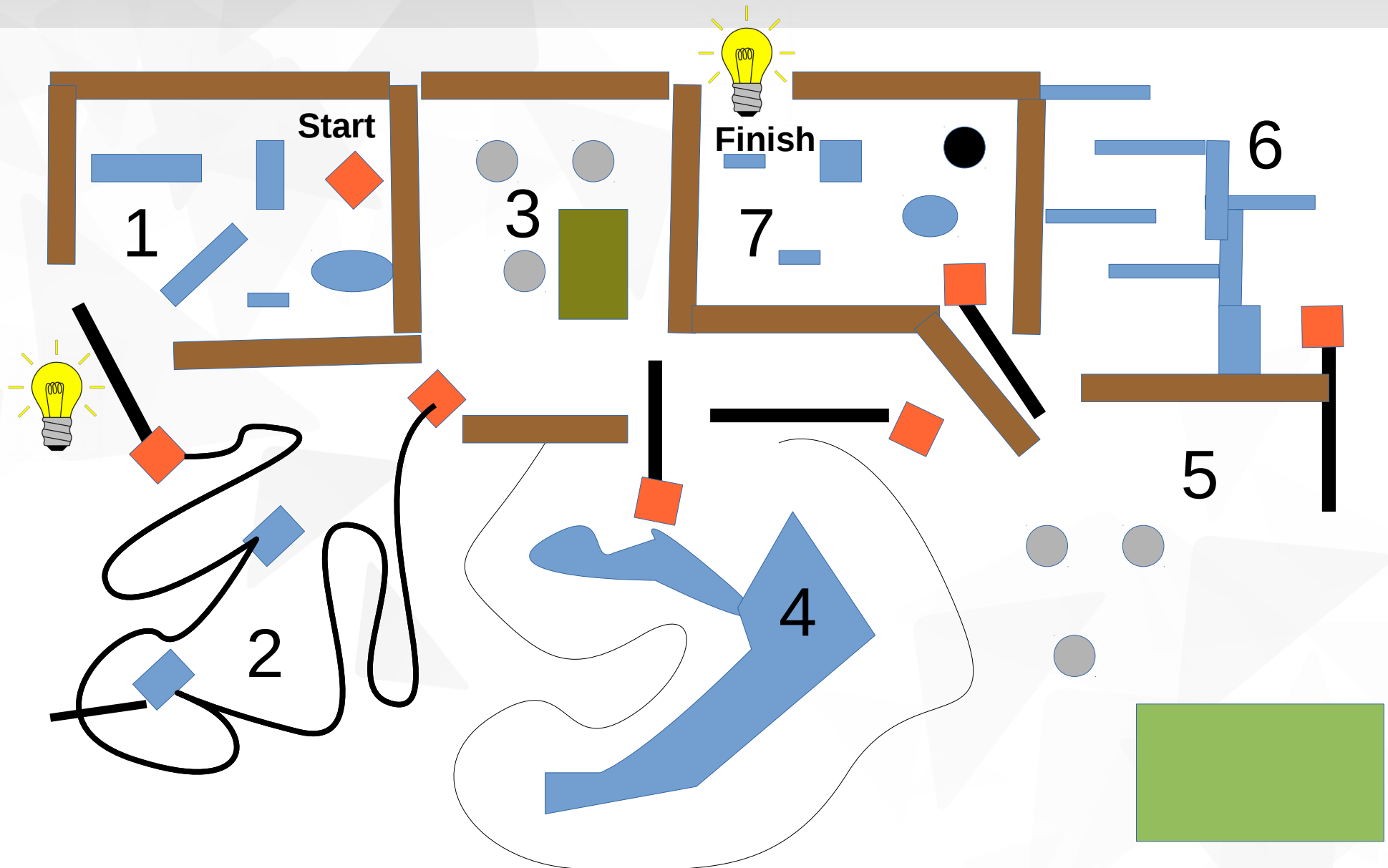
Edison Platform Features

The Edison Robot Platform provides the following capabilities and features:

- Light Sensors
- Obstacle Sensors
- IR Remote Control
- Line Tracking Sensor
- Inter-Robot Communication
- Web-based Graphical Programming
- Simple computer to robot interface



Competition Course



Drawing not to scale. Actual locations of objects and tracks will be different.

