Overview

- The team is working in robotics area since 2007
- Participating to RoboCup competitions since 2011
- Both real and virtual rescue robot leagues
Comparison of our methods for Virtual and Real Robot Leagues

<table>
<thead>
<tr>
<th>Methods</th>
<th>Virtual</th>
<th>Real</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>USARSIM-UDK</td>
<td>ROS-GAZEBO</td>
</tr>
<tr>
<td>Sensors</td>
<td>RGB Cam, Laser, Ins</td>
<td>Kinect, Termal Cam, Laser, IMU</td>
</tr>
<tr>
<td>Exploration</td>
<td>Frontier Based</td>
<td></td>
</tr>
<tr>
<td>Navigation</td>
<td>Our Code</td>
<td>Ros Navigation Stack</td>
</tr>
<tr>
<td>SLAM</td>
<td></td>
<td>Our Code (RSLAM)</td>
</tr>
<tr>
<td>Victim Detection</td>
<td>DPM (Deformable Partial Models)</td>
<td></td>
</tr>
<tr>
<td>Development Issues</td>
<td>Teams have to develop their own algorithms</td>
<td>There are number of good libraries making easy to start up</td>
</tr>
</tbody>
</table>
Our Virtual League Efforts

Indirect Communication between ComStation and Robots

Video
Our Real League Efforts

• Navigation in Our Lab

• Exploration

• RSLAM

• Tracked Robot

• Hagia Sophia
YILDIZ Team Members

- Erkan Uslu
- Muhammet Balcılar
- Furkan Çakmak
- Nihal Altuntaş
- Salih Marangoz
- M. Fatih Amasyalı
- Sırma Yavuz
Suggestions for the future of the league

• The main problem is the number of participants
• The start up with UDK is not easy.
• During this workshop, we all witnessed the capabilities of ROS/Gazebo environment.
• Moving to ROS/Gazebo will benefit the league and will encourage the new participants.
Suggestions for the future of the league

• As demonstrated in this workshop, it is also possible to use Gazebo-Usarsim client interface. But, this type of environment will not solve current issues; like developing your own algorithm from the scratch.
Sample Application

- After the yesterday’s discussions, our team developed a demo to show how multiple robots can be controlled in ROS/Gazebo (thanks to Stefan Kohlbrecher):

https://github.com/YildizTeam/pioneer3at_demo