## SSRR Camp 2013

Welcome Notes

## some History

- follows a long tradition of events:
  - SSRR Summer School 2012, Alanya, Turkey
  - ROS RoboCup Rescue Summerschool 2012, Graz, Austria
  - Resecue & ROS Workshop 2011, Koblenz Germany
  - SSRR Rescue Robotics Camp 2007, Rome, Italy
  - SSRR Rescue Robotics Camp 2006, Rome, Italy

### **Aims**

- lower the entry bar for rescue robotics
- provide a common ground on methods, hardware, software
- foster interaction with first responder
- community building and networking

### Common Software

- initiated in the RoboCup Rescue Robot League
- providing a software base for new teams
- community-driven effort
- ROS-based (http://wiki.ros.org/robocup\_rescue)
- 2D mapping is now standard (Hector mapping)

## Topic

- perception and navigation in challenging 3D environments
  - 3D Perception
  - 3D Mapping
  - Path Planning and Navigation in 3D Environments
  - Software Architectures for Rescue Robots

# Organizers



Ivana Kruijff-Korbayová DFKI, Germany





Francis Colas ETH Zürich, Switzerland

Gerald Steinbauer Technische Universität Graz Austria



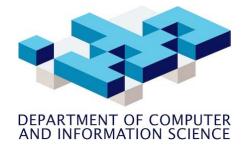
## Supporters













# **Special Thanks**



Christian Dornhege Universität Freiburg Germany

Piotr Rudol Linköping University Sweden



Johannes Maurer Technische Universität Graz Austria



### Lecturer



François Pomerleau ETH Zürich, Switzerland



Simon Lacroix, LAAS/CNRS, France



Andreas Nüchter Universität Würzburg Germany



TU Darmstadt, Germany

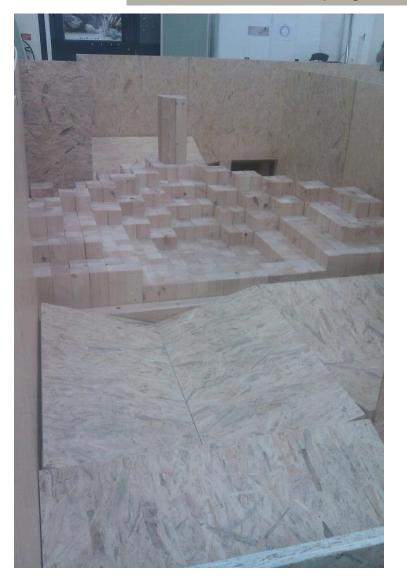
## Organizational Issues

- 35 Students from all over the world
- good chance for interaction but also needs some cooperation
- camp is based on a mixture of lectures, exercises and hands-on sessions
- coffee is available in lab
- we will use ROS Fuerte

|             | Monday   | Tuesday           | Wednesday  |
|-------------|--|-------------------|--|
| 8:30-9:00   | Welcome & Camp Opening                                       |                   |  |
| 9:00-11:00  | Brainstorming Session<br>on Camp Goal                        | OMPL<br>Tutorial  | Simon Lacroix<br>Advanced Path<br>Planning   |
| 11:00-13:00 | Hands-On Session   | Hands-On Session  | Hands-On Session   |
| 13:00-14:00 | Lunch  | Lunch             | Lunch (13:30 this time)  |
| 14:00-16:00 | François Pomerleau<br>How to achieve real-time 3D<br>mapping | Andreas Nüchter   | Stefan Kohlbrecher (will start 14:30) Leveraging 3D Perception for RoboCup Rescue and the DARPA Robotics Challenge |
| 16:00-18:00 | Hands-On Session   | Hands-On Session  | Hands-On Session   |
| 18:00 - ?   |  | Camp Social Event | SSRR Welcome<br>Reception & Camp<br>Demo   |

#### Venues

- Lectures and Exercises Lecture Hall Visionen
   Hus B
- Hand On Sessions AIICS Terra LAB
- Lunch
- Social Event Harrys Pub
- see http://www.ssrr-conference.org



## Goal of the Camp

- let a robot autonomously travers a maze with rough terrain
- RoboCup Rescue Arena
- support of a ViCon 6D tracking system

### Robots

- 4 Robots available
- 2 x BlueBotics Absolem
  - tracked platform with 4 flippers
  - rotating laser scanner
- 2 x Mesa Element
  - Kinect and laser scanner on a PTU

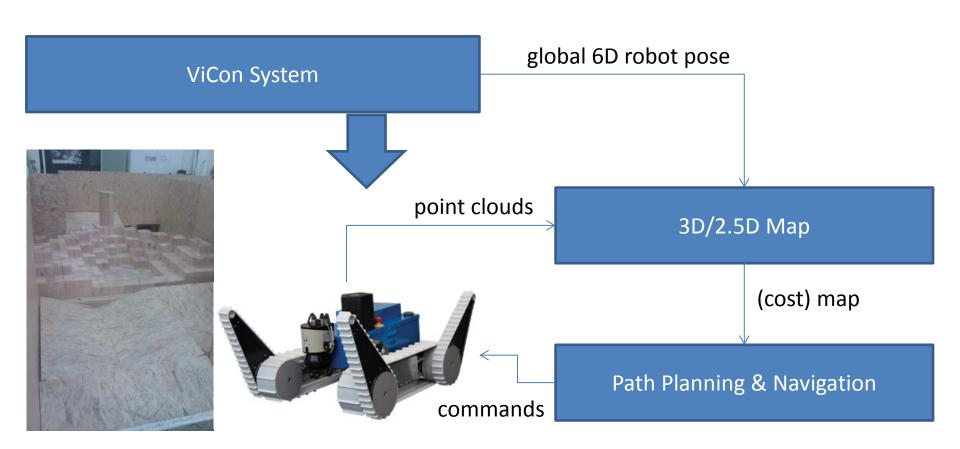




## **Group Organization**

- we divide the students in 4 groups
  - each group will work with one particular robot
- we assign one robot expert to each group
- each group is subdivided into two subgroups
  - one subgroup works on perception
  - one subgroup works on path planning and navigation

# Rough Sketch



# **Group Finding and Brainstorming**



