

Introduction to Multi-Agent Programming

Exercise 1

Organization, Introduction to Rescue
Simulation, and Exercise 1

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Organization I

- Written exercises + Programming (Rescue Simulation)
- Group of [maximum] three students
 - One group one submission
- Consultation
 - Time slot?

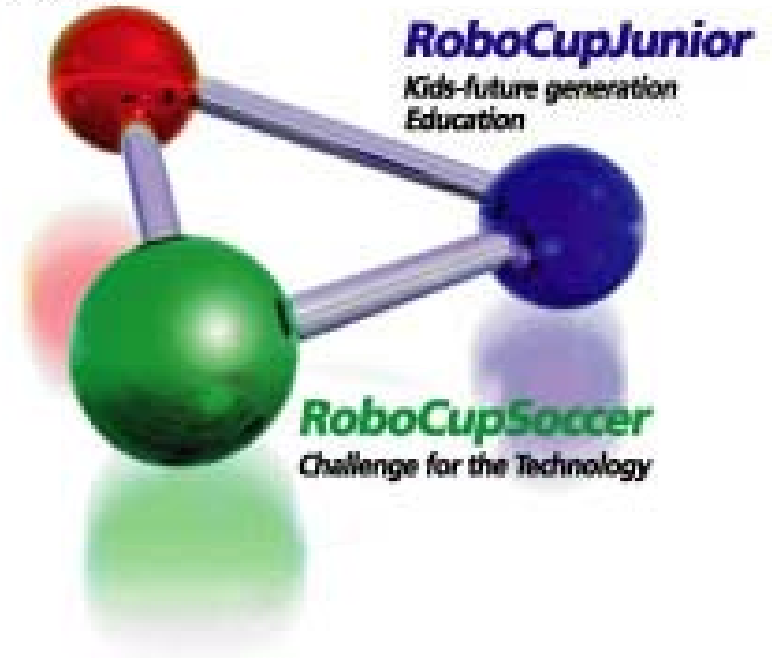
Organization II (today)

- An introduction to rescue simulation
- A tutorial on the simulation software

Background

- RoboCup
 - RoboCupSoccer
 - Simulation
 - **Small Size**
 - Middle Size
 - Four - Legged
 - Humanoid
- **MAS**
 - Individual
 - Coalition

RoboCupRescue
Application for Practice



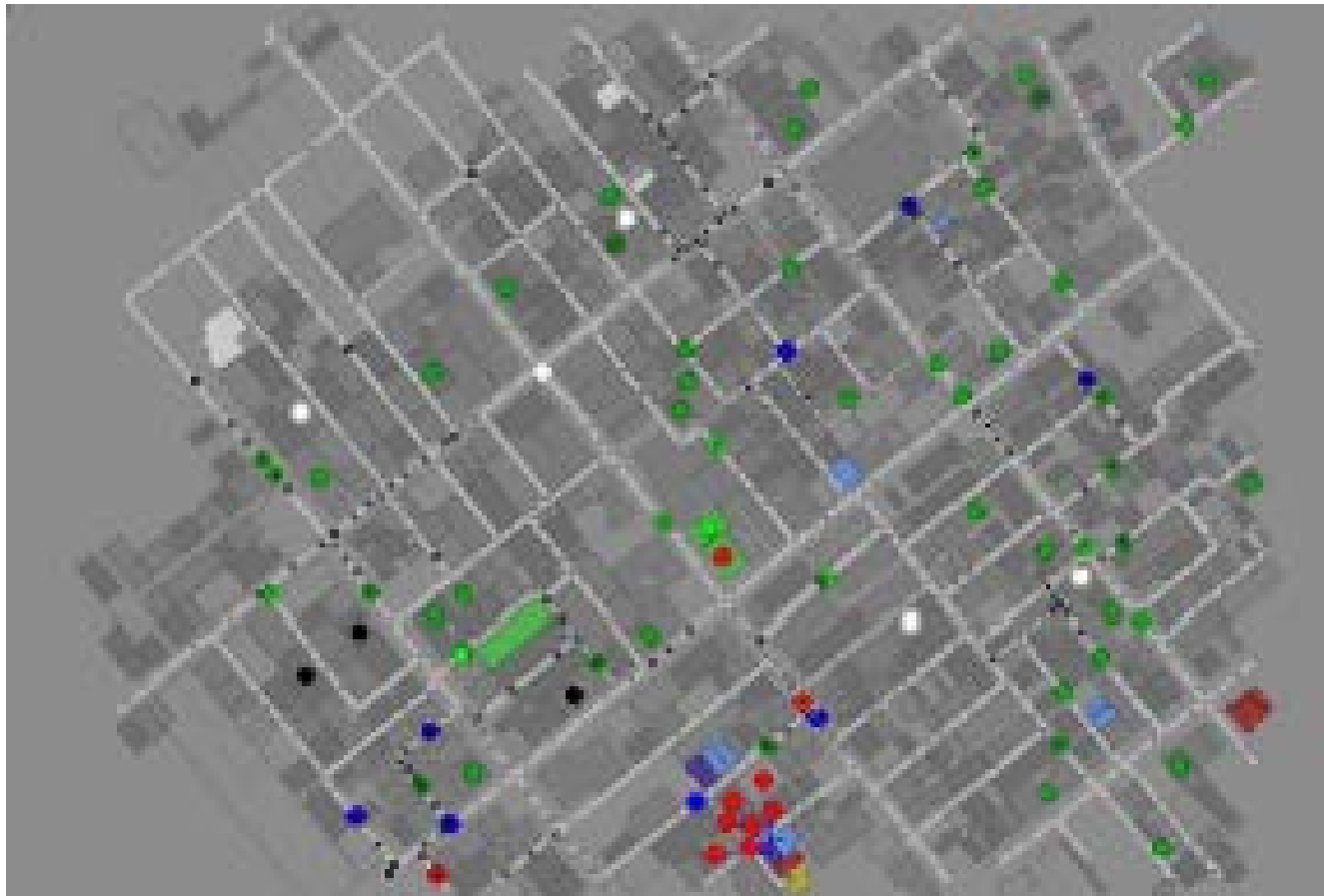
Scenario

- **RoboCupRescue**
 - Infrastructure
 - **Simulation**
 - Virtual Robots
 - Robot
- **Background**
 - **Earthquake**
 - Polices
 - Ambulances
 - Fire brigades
 - Victims

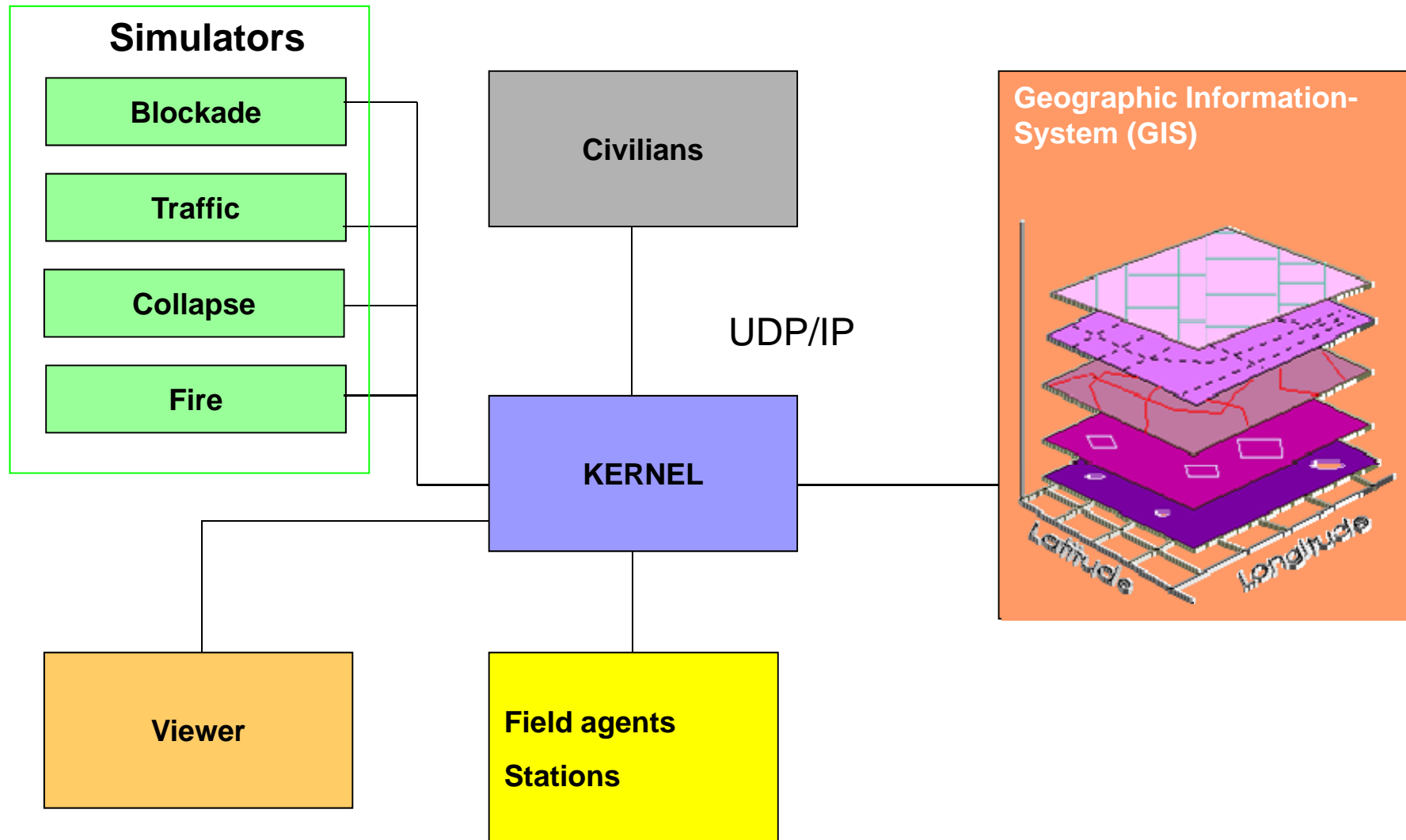


Simulation

- Simplified



Architecture



The Running System

Fire Brigade	15
Police Force	15
Ambulance	8
Civilian	90
Fire Brigade Center	1

Ambulance Center	1
Police Force Center	1
Refuge	2
Ignition points	6

SUNTORI: Kobe 2008 2nd place

Organization II (today)

- An introduction to rescue simulation
- A tutorial on the simulation software
 1. Get the software
 2. Compile the software
 3. Run the simulation
 4. Exercise 1

Step 1

- Linux systems
 - Packages
 - java
 - C/C++
- Get the source package
 - Exercise Page

Step 2

- Directories

- boot, docs, maps, programs
- Compile the software

```
$> cd rescue/rescue-0.50.0/programs/
```

```
$> make
```

- Warnings ...
- Errors...

Step 3

- Run the program

```
$> cd rescue-0.50.0/boot
```

```
$> ./allNoEarthquake.sh
```

```
$> ./sampleexplorationagents.sh
```

```
$> ./killall.sh
```

- Environment variable

```
export RESCUE_KERNEL_HOME=[your path  
to]/rescue-0.50.0
```

Simplified Simulation

- No disaster (earthquake, fire, blockade, collapse etc.)
- Only ambulance, map, civilians (targets)
- Ground truth are defined in text files
maps/Kobe_expl/civstates.txt targetlocs.txt

Step 4

- **Exercise**
 - Log files
 - in the boot directory.
 - Create a Java package for your group
 - `rescuecore.map09` → `rescuecore.grp[X]`
 - Put your code into your group directory
 - Clone the files in `map09`
 - Replace `map09` in the code to `grp[X]`
 - Insert `grp[X]` following `map09` in file `rescuecore/Makefile`
 - `make rescuecore`
 - Change `boot/sampleexplorationagents.sh`