Middle East Technical University   **Department of Computer Engineering**

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CENG 451

Information Systems Development

Fall 2018-2019

PROJECT DESCRIPTION

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Rescue: A Disaster Management System

The importance of disaster management system becomes visible when dealing with all humanitarian aspects of emergencies by organizing and managing of resources and responsibilities to lessen the impact of disasters.

The focus of Rescue project is to manage resources, such as medical aid, food and coordinate various groups, fire departments, police, soldiers, search and rescue teams, and medical personnel to plan emergent actions. Rescue gathers hardware, software, and network entities. Figure 1 illustrates the disaster management system environment.
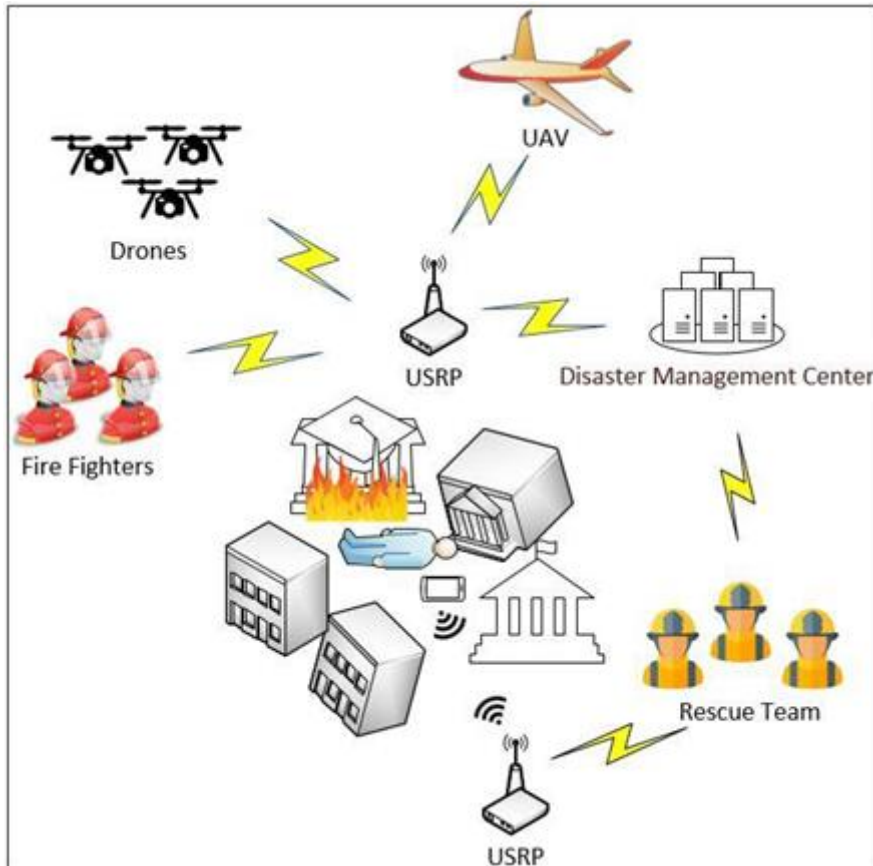
Figure 1. Disaster Management System Environment

Rescue has the following abilities:

• Data is continuously collected and fused from various sources (UAVs, drones, cameras, helicopters, firefighter copters, available sensors, weather forecast services, etc.) around the disaster area and reveals significant information that is delivered to Disaster Manage-ment Center (DMC).

• Various groups; fire departments, police, soldiers, search and rescue teams, and medical personnel are informed about the current situation.

• Unmanned Aerial Vehicles (UAV) and helicopters are tasked with collecting damage information (destruction, potential fire or water flood) to decide where and how the damage was spread by DMC. A set of drones are sent to observe damages of particular locations in more detail by DMC.

• DMC creates an action plan and puts in operation by assigning tasks and dispatching groups into specific locations.

• Search and rescue teams collect and inform DMC about necessary information to locate people; the ones survived and the ones trapped under the wreckage.

• Firefighter teams are sent to specific locations to extinguish fires and to create detailed reports accordingly.

• Medical teams are sent to locations where they conduct triage and help people who need medical care immediately.

• Police and soldiers are responsible for providing security and helping teams whenever possible.

• The officials of the DMC send announcements as messages to public indicating where to gather, to get help, and to inform officials regarding events.

PROJECT

You must provide following diagrams for the Rescue until the specified due date. You can work as **groups** for this project. Each group may consist of **three** people. You **must** comply to your groups that you selected via ODTUCLASS (Group Selection).

- **Use case diagram** (a detailed diagram for the system would be enough)
- **Class diagram** (along with proper relations among classes. All classes must contain all necessary attribute and methods)
- **Sequence diagram** (2 diagrams for most complex use cases)

Deadlines

Project Report Submission: 25.11.2018, 23:55pm (late submission is not allowed)

Submission

For the project report, do not forget to include a title page and your group id, put student IDs and names of group members on it. Only **one** group member submits the project documents. The report must include all of the required diagrams. Name your project report as **ProjectReport##.pdf.** Along with your report, provide your model source files (e.g. mdj files for StarUML). Compress the report and source files into a single file as **Group##.rar** and submit through OdtuClass.