

AD-HOC COMMUNICATION NETWORK FOR
RESCUE NAVIGATION SYSTEM

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ABSTRACT

The possibility of getting lost in a blazing building is a hazard firefighters have to face during rescuing process. This project proposes an ad-hoc communication network for rescue navigation system to help track fire-fighters so that the incident commander could dictate an escape route to the disoriented rescuer over voice radio. The ad-hoc network provides the connection between portable units and fixed unit. The system consists of portable units (PUs) that can be attached to the rescuers and a fixed unit (FU) set up near the scene and monitored by an incident commander. The PU is equipped with inertial measurement unit (IMU) that uses gyroscope, accelerometer and magnetometer to track movements and send the measurements wirelessly by using the ad-hoc network to the FU. The received data will be processed by FU and display the measurement. This system has a potential to replace the use of ropes and hoses by the fire-fighters to navigate in near black conditions. It is expected that the system can save rescue time thus prevent fatalities.

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