



CriMaSC: Designing and distributing an Innovative European Crisis Management and Simulation Centre

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In emergency situations time is of the essence to save endangered life and minimize damage. To achieve these objectives it is important that first responders take action fast, well organized, and precise. Considering natural hazards and emergency situations the year 2018 has been one of the most eventful and severe years since modern documentation not only in Europe but worldwide.

The aftermath of extreme weather conditions i.e. droughts, wild fires, flooding, and storms has claimed many lives and left areas devastated for a long time. According to multiple governmental authorities extreme weather events and therefore the potential of extensive emergency situations can gain. To increase the safety and well being of, as well the victims but also the first responders within the crisis - current developments in Unmanned Aerial Systems (UAS) and their sensor mounting capabilities can be of great benefit to save lives, environment and properties. UAVs on site during the emergency can be helpful to prioritize responding areas, detect imminent threats like gas leak- age or see through smoke and probable obstacles. These on site supporting systems would benefit in real time. Nevertheless, prior knowledge of the emergency area would greatly contribute to the crisis management systems. Simulations based on geographical and meteorological information can be carried out prior first responder deployment to prioritize areas of attention and for training. Together with design of such a combined training and action oriented command, communication and control system (C3), access to national and international geo-data bases would be essential. Such databases should contain information about i.e. vegetation, soil type, soil moisture, hydrology and runoff characteristics, topographic information, and information about natural and artificial occurring obstacles as valuable supplementary sources for crisis simulations. With the simulation of possible developments of a crisis situation the first responding units and blue-light organizations can react quicker, better planned and therefor more safely and precise. To simulate possible scenarios a solid foundation of model parameters are essential. Therefore we propose to investigate the needs, usability and possibilities to access such a joint C3 system. We also suggest an evaluation of the possibilities to use national databases, in the first run, but also established European databases containing information about relatively long-term stable geo-data and satellite based remote sensing data that can be used as foundation for simulations in combination with short-term environmental information acquired by UAS. By combining pre-emergency acquired information with near real time information the safety of European citizens and first responders can be sufficiently increased and the threat of crisis situations can be handled more efficiently. The Crisis Management and Simulation Centre project will be performed through cooperation with players in crises management from European partner countries, e.g. police-, fire department and health care organization, Center of inter-professional Collaboration within Emergency Care, Department of Media Technology and Computer Science in Sweden, Estonia, Netherlands, Norway, Italy and Japan.