Mobile computing in mass casualty incidents (MCIs)

Simon Nestler   Gudrun Klinker

Fachgebiet Augmented Reality
Technische Universität München
Fakultät für Informatik
Boltzmannstraße 3, 85748 Garching bei München
nestler|klinker@in.tum.de

This paper illustrates the future role of mobile computing for the response in emergencies and mass casualty incidents (MCIs). Furthermore it describes the different components and functionalities which will be needed – in the form of a vision. This vision shows that a mobile system is capable to assist emergency teams and incident commanders in MCI operations. This mobile system has to contain functionalities such as information on patients, information on the scene, information on emergency teams, information on infrastructure, MCI knowledge, technical support, management tools, remote collaboration and flexibility. Due to the fact that various researchers performed research on these challenges a wide-spread overview on the state of the art is presented.

Finally this paper points out that a powerful user-interface which considers the unstable, time-critical and life-threatening context is indispensable for the successful introduction of mobile computing in emergencies and MCIs.

Even if information on patients is rather important for the successful management of MCIs, the solution which is needed for this scenario is not just a powerful mobile patient information system. Whereas information on the scene and information on infrastructure is very important in MCIs, just a mobile context-aware system does not solve all problems which occur in this scenario. Collecting information on emergency teams and assisting by the means of mobile management tools is important, nevertheless coping with this scenario best is more than just a mobile management game. Assisting emergency teams with MCI knowledge is feasible, but just a mobile knowledge database does not automatically lead to a successful handling of this scenario. Despite the fact that various mobile technologies can provide technical support for emergency teams, solving this scenario is more than just choosing the right technologies. Although supporting mobile remote collaboration can increase efficiency, just the introduction of a telemedicine system is not a solution for this scenario.

The important factor for the success is a powerful user-interface which 1) is capable of overly complex functionality from user, 2) enables easy access to all functionality and 3) helps the user to focus on the essential. Only by combining all existing solutions in one system, mobile computing can be used in emergencies and MCIs. The vision can become true when we reduce the complexity with which the user has to deal without taking his flexibility away.