

Emergency mobile

14 September 2018, by David Bradley



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Medical emergencies inevitably require an urgent response from doctors and other healthcare workers. Response time can mean the difference between life and death. As such, there are ongoing efforts in many areas of research to find technological approaches to reducing response times in order to improve medical outcomes. Writing in the *International Journal of High Performance Computing and Networking*, an academic team from Ireland explain how and why mobile cloud computing can be an answer.

The team of Hazzaa Alshareef and Dan Grigoras has responded to the problem by developing a mobile cloud service, which they explain works side-by-side with the existing [emergency](#) system. It is "aimed at reducing the time spent waiting for emergency help to arrive, as well as making the best use of medical professionals who may be located in close proximity to the medical case," the team writes.

In earlier work, the team introduced a mobile ad hoc network, MANET, manager service that is hosted in the cloud. This system allows all mobile users to be reached, including those without "cellular" connectivity but who are connected to the

internet via Wi-Fi. In subsequent work, they proposed a way to manage active sessions between users on the same MANET to reduce save mobile resource demands and preclude data loss or misuse. In a third paper, they brought the technology together to introduce a novel system that provides healthcare services to people who are involved in an emergency and are out of reach of home or office.

Now, they have extended this work to extend what might be possible to include wearable sensors, approaches to capturing the time needed to connect those involved in an emergency with those who might assist and so optimize the communication channels, and finally they have improved security.

In trials of the application, the team found that the amount of time needed to find a medical professional and establish communication was between 4 (via the internet) and 25 seconds (text messaging, short message service, SMS), depending on the particular communication method used. In other words, negligible time is added to the process, but the new connectivity could improve the chance of a positive outcome.

Critically, the system augments the conventional emergency services by locating professionals in the vicinity of an emergency and notifying them of what is happening and allowing them to respond appropriately and in a much timelier manner.

"Our future work will develop an algorithm for better management of registered professionals' activity to achieve fair and efficient outcome, including when they start/end dealing with emergency cases and how often they provide emergency support," the team concludes. They also plan to extend the options available with wearable smart sensors for people with particular medical needs who might find themselves in an emergency situation.

More information: Dan Grigoras et al. Swift personal emergency help facilitated by the mobile

cloud, *International Journal of High Performance Computing and Networking* (2018). DOI: [10.1504/IJHPCN.2018.10015024](https://doi.org/10.1504/IJHPCN.2018.10015024)

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