Requirements:

* The team’s opinion on the community’s preparedness in responding to emergencies
* Potential future challenges in emergency response
* How technology and innovation can help address these challenges

The community’s preparedness in responding to emergencies is critical, because in most cases it requires urgent intervention to prevent damages or losses. Government organizations including SCDF are well aware of the challenges associated with public emergencies and engage in a variety of efforts to take precautions, but at the core (and front line) of emergency response, it is often important to have our people equipped with related skills and mindset so that they can make wise and swift decisions in critical situations.

Generally, we can see that resources are widely available for the public to prepare themselves for emergencies, including the Community Emergency Preparedness Programme (CEPP) first launched in 2003, emergency handbooks in multiple languages, and the SCDF myResponder mobile app. One of the challenges we identify is how to better inform the public. This includes at least three aspects: rationality-wise increasing the community’s awareness of the importance of emergency response, emotionality-wise promoting social responsibility, and in practice, imparting related knowledge and providing better facilities.

Moreover, Singapore is an integrated society with increasing diversity and global connectivity. We found in our preliminary survey, which was carried out in NTU campus, that a portion of the residents (who have stayed in the country for more than 6 months in the past one year) self-reported “not confident” of responding to emergencies like fire-fighting and first aid. For example, some foreign students and workers are not familiar with local hotlines like 995, while some elderlies indicated digital illiteracy and language problem.

There are also other potential challenges, such as how to cost-effectively maintain large databases of physical resources like publicly accessible AEDs and fire extinguishers. We believe advancement in digital technologies can help us address these challenges, by innovating the way information is managed and distributed.

For example, we can develop mobile applications enhanced with design approaches such as gamification. Backed up with psychological research results, gamification mechanism can greatly enhance user experience and motivate users to participate in activities, including learning cardiac arrest intervention skills and crowdsourcing of AED information, where a large proportion of the expense involved in data collection can be saved.

Comments: would you like to add the below additional sentences?

We have implemented the first version of a crowdsourcing mobile application with gamification design that entices the public to provide / update / verify information about available AEDs in Singapore. A test trial conducted on a close community in NTU shows an encouraging participation level coming from these users. We intend to further improve the gamification design based on the feedback from the users.

Digital media technologies such as virtual reality and augmented reality techniques can also be applied to enrich learning experience with a vivid and interactive interface. Optimized embedded system connected with cloud, possibly as part of communal or universal Internet of Things (IoT), can be employed to capture real-time data and eventually serve as data source for further machine learning.