

A Challenge to Acquire Serious Victims' Locations during Acute Period of Giant Disasters

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Abstract : In this paper, we report how to acquire serious victims' locations in the Acute Stage of Large-scale Disasters, in an Emergency Information Network System designed by us. The background of our concept is based on the Great East Japan Earthquake occurred on March 11th, 2011. Through many experiences of national crises caused by earthquakes and tsunamis, we have established advanced communication systems and advanced disaster medical response systems. However, Japan was devastated by huge tsunamis swept a vast area of Tohoku causing a complete breakdown of all the infrastructures including telecommunications. Therefore, we noticed that we need interdisciplinary collaboration between science of disaster medicine, regional administrative sociology, satellite communication technology and systems engineering experts. Communication of emergency information was limited causing a serious delay in the initial rescue and medical operation. For the emergency rescue and medical operations, the most important thing is to identify the number of casualties, their locations and status and to dispatch doctors and rescue workers from multiple organizations. In the case of the Tohoku earthquake, the dispatching mechanism and/or decision support system did not exist to allocate the appropriate number of doctors and locate disaster victims. Even though the doctors and rescue workers from multiple government organizations have their own dedicated communication system, the systems are not interoperable.

Keywords : crisis management, disaster mitigation, messaging, MGRS, military grid reference system, satellite communication system

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