Editorial

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Biographical notes: Noriki Uchida received his BS degrees from the University of Tennessee in 1994, MS in Software and Information Science from the Iwate Prefectural University in 2003, and PhD degrees in the same university in 2011. Currently, he is an Associate Professor in the Fukuoka Institute of Technology. His research interests include cognitive wireless networks, QoS, and heterogeneous network. He is a member of IEEE, Information Processing Society of Japan (IPSJ), and Institute of Electronic and Communication Engineering in Japan (IEICE).

Yoshitaka Shibata received his PhD in Computer Science from the University of California, Los Angeles (UCLA), USA in 1985. From 1985 to 1989, he was a research member in Bell Communication Research, USA, where he was working in the area of high-speed information network and protocol design for multimedia information services. Since 1998, he is working for Iwate Prefectural University, Japan as an Executive Director of Media Center and a Professor of Faculty of Software and Information Science in the same university. He is a member of IEEE, ACM, Information Processing Society of Japan (IPSJ) and Institute of Electronic and Communication Engineering in Japan (IEICE).

1   Introduction

A massive 9.1 magnitude earthquake hit the northern Japan on March 11, 2011, and over 20,000 people dead or missing have brought strong emotional impacts of disaster all over the world. The Great East Japan Earthquake caused many severe damages not only the powerful earthquake and tsunami damages but also many problems such as nuclear plant crisis, fires of many plants and buildings, and network disconnections over the wider areas in the Northern and Middle parts of Japanese island. Since then, there also have been severe disasters such as the Hurricane Sandy in 2012, the Sichuan Earthquake in 2013, and the Nepal Earthquake in 2015 in the world, and the researches related to the disasters have become one of significant research issues. However, against these unfortunate experiences, there have been a number of papers submitted as the reports and researches of disasters from the whole world.

The disaster information technology includes various research topics such as robust networks, evacuation supporting systems, and life safety information systems against the earthquake as well as hurricane, heavy snowing, and so on. One of the significant research issues is the robustness and recovery of communication networks after severe damages. For example, Shiratori et al. (2013) proposed never die networks that the robust networking systems after the severe network breakdown. Also, Shibata et al. (2014b) pointed out the research subjects from the personal disaster rescue activities, and he proposed various studies such as the network recovery systems (Shibata et al., 2014a) and the disaster information systems using mobile devices (Hirakawa et al., 2014).

Then, the current trends of the research issues include various new technologies such as the cloud computing, and software defined networks, and the mobility networks including vehicles or drones. For example, Uchida et al. (2014) proposed the mobility networks using drones for the disaster usage. Currently, there have been many papers and reports of the disaster usage in the world, it is supported that the studies related to disaster have been rapidly progressed in these years.

Thus, the goal of this special issue is to bring out the best practices and current researches in the disaster information systems such as resilient network systems, environmental surveillance system, mobile ad hoc networks for disaster use, web-based disaster information system as well as new approaches including cloud computing and software defined networks for emergency use.

The special issue is composed of selected best papers from The 7th International Workshop on Disaster and

Emergency Information Network Systems (IWDENS-2015) Workshop in conjunction with 29th IEEE International Conference on Advanced Information Networking and Applications (AINA2015), Gwangju, Korea, March 24–27, 2015.

2 Contents of this issue

There are selected four papers in this special issue, and all of them are associated with a certain aspect of this special issue theme.

The first paper by Q.T. Minh and S. Yamada presented the commodity WiFi-based multihop access network for the disaster recovery. The methods introduced the disaster recovery networks by the commodity of WiFi mobile networks, and it is significant to use the ordinal devices and networks, not particular devices, under the emergent situations.

In the second paper, N. Uchida et al. deal with vehicle-to-vehicle networks for the road surveillance systems for snow disaster. The main idea of the research consists of the delay tolerant networks enhanced by IEEE802.11p and its architectures, and the experimental reports include the actual road circumstances and the future studies of vehicle-to-vehicle networks for the snow disaster usage.

The third paper presented by K. Ito reported about the various sensor data using the sensor of quasi electrostatic field (QEF) systems in vehicle-to-vehicle networks. The paper proposed that other vehicles including cloud computing exchange the road condition's data such as the resistance and temperature by the various IEEE802.11 based networks. The paper reports the prototype system of the proposed methods, and various experimental results by the field experiments for the disaster usage in the vehicle-to-vehicle networks.

The fourth paper by T. Ishida et al. presents the digital contents management system for the catastrophe usage. The paper proposed the digital contents management system for the government levels using the position information by the augmented reality and sensor technology, and it is discussed the effective data sharing systems from the extraordinary amount of disaster data.

Through this special issue, we hope that all researchers in the world can share ideas and research works in the emerging areas of disaster and emergency information network and systems.

Acknowledgements

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