WA-1 Creating Disaster Resilient Society with ICT  
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Abstract
This paper explains how ICT can help making our society “Disaster Resilient”. In 2009, a book with the title “ICT based Disaster Resilient Society” was published from Nikkei BP by a team of disaster researchers from Disaster Prevention Research Institute, Kyoto University and information and communication technology (ICT) experts from Nippon Telegram and Telegraph Co. Ltd (NTT). It was a result of exploring fundamental differences in their research focus to articulate a strategy and tactics for our society to survive from a mega scale earthquake and tsunami disaster which will occur in the western Japan in the first half of 21st century. In this book, we proposed that any system should be “autonomous, distributed, but coordinated” whether they are individuals, families, organizations, regions, or nations. Development of ICT since the second half of the 20th century made it possible for any systems to be autonomous, distributed, but coordinated. In order to make our society more disaster resilient, it is important to combine two kinds of efforts complementarily to reduce the vulnerability of our society: mitigation and preparedness. East Japan earthquake disaster on March 11, 2011 proved that it is important for any system to have a good operational information management system as well as clear command and control framework to be disaster resilient. This disaster also indicated how powerful “cloud-based ” ICT systems in case of wide- spread devastating disasters. In this paper, it will be reviewed some of best practices for promoting ICT based disaster resilient society.

WA-2 Emerging RoF Cloud for Computing, Diagnosis and e-Health  
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Abstract
The next-generation information access and distribution infrastructure is envisioned here for a fully connected broadband society, where digital and analog information contents will be available to the end users at anytime, anywhere via a converged wired and wireless medium. Upcoming data- and visual-intensive services in the new broadband era are enabled by an elastic, multi-gigabits/sec wireless access network based on radio-over-fiber (RoF) technology. However, a common network access interface, with equal and fair treatment of information contents delivered by wireless and wired access systems is essential to provide low-latency, high-bandwidth, and high-availability services irrespective of their service types, protocols, formats or system technologies. Currently, e-health applications, medical and clinical data are relying heavily on high-fidelity, uncompressed images and pathology-scale data visualization that require extremely high volume of memory and computation power. As a result, tremendous scientific data and images are generated every year, and more and more data storage capacity and access bandwidth are demanded in a blazing fast pace. To fulfill the tremendous demand by the future healthcare and cloud computing industry, we urgently need to integrate the newest wireless and wired access system technologies, such as 60-GHz mmWave, long-term evolution (LTE), and WiMax, over TDM- and WDM-passive optical networks, to establish high-performance, cost-effective access networks. Emerging applications, such as computer-aided diagnosis, artificial-intelligence chronic disease monitoring, or automated clinical testing and analysis, require both high-speed communications and tremendous computational power. Through RoF cloud, the union of wireless and optical access network will usher in a new communication paradigm for emerging high-speed, low-latency, computing, diagnosis, and e-health applications.