
BP-1: Perspectives and issues for future deployment of satellite communications and its applications for public safety and security

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Foreword

This is a special report of seven panel discussions sponsored by Communications Society in 2008 IEICE General Conference held in Kitakyusyu-shi, Japan in this March.

Hot topics related to advanced communication technologies were extensively discussed by the experts together with the participants to explore not only the future of communications technologies but also the deployment of new systems and services.

1. Introduction

This report describes the panel discussions entitled “Perspectives and issues for future deployment of satellite communications and its applications for public safety and security” organized by technical committee of satellite communications on 19th March during IEICE general conference 2008 held in Kitakyushu-shi, Japan. The organizer and moderator of the panel was **Prof. Masahiro Umehira** of Ibaraki University and six panelists were invited to present their views on the current status of satellite utilization in various application areas for discussions. After the presentations by the panelists, we enjoyed the discussions for about one hour together with the audience to explore how we can promote the satellite utilization for public safety and security.

2. Presentations by panelists

Six invited panelists were invited and presented their perspectives on future deployment of satellite communications and its applications as shown below.

The first panelist, **Prof. Fumio Takahata** of Waseda University presented “On ICT Forum for Security and Safety,” where he introduced ICT forum for security and safety, and its history and activities. He pointed out it is very important to deliver disaster information to each individual for safety, as described in “Innovation 25” of Japan. In addition, due to the lack of frequency spectrum, frequency sharing between satellite and terrestrial systems is becoming more important.

Dr. Takashi Moriyama of JAXA (Japan Aerospace Exploration Agency) presented “Current Status and Future of Satellite Remote Sensing Application for Disaster Monitoring.” He introduced how land observation satellite “DAICHI (ALOS: Advanced Land Observing Satellite)” have been used for actual disaster cases. He stressed that real experience of satellite

utilization will convince the people of the usefulness of the satellite, from his experiences.

Dr. Masato Tanaka of NICT (National Institute of Information and Communications Technology) presented the concept of “Terrestrial/Satellite-Shared Mobile Communication System for Nation’s Security and Safety” using 30 to 50m diameter onboard antenna to make it possible to use handheld satellite terminal. He pointed out it is very important to use satellite not only for emergency communications but also for daily communications. Otherwise, satellite will not be useful for real emergency communications.

Mr. Yoshitake Yamaguchi of Mobile Broadcasting Corporation presented “S-band Satellite Digital Mobile Broadcasting as Disaster Prevention Media,” where he introduced new emergency notification services using mobile satellite broadcasting systems. He mentioned latency of the proposed service is less than 1 sec, which is very important requirement for the services.

Mr. Kohei Ohata from NTT Corporation presented the concept of satellite-based sensor network for small data gathering and the system requirements. He stressed that the requirements include low cost terminal and flexibility for the proposed system.

The last speaker, **Mr. Yoshitomo Sakato** of Mitsubishi Electric Corporation presented “Technology and Challenge of Satellite Communications for Safe Society,” where he described technical issues to realize satellite/terrestrial integrated mobile communication systems using large satellite antenna. He stressed that it is important to consider how to share not only system development cost but also system construction and operation cost. In addition, he pointed out it is also important to use the system on non-disaster days.

3. Panel discussions

Extensive topics were discussed by the panelists, such as the requirements for the disaster satellite communications and broadcasting, and the roles of the satellite and terrestrial systems. All of the panelists agreed that both of satellite and terrestrial systems will be used to supplement each other, and it is very important to use the satellite on a daily basis. Otherwise, satellite will be never used even in the case of disasters. This is also important for remote sensing by satellite, as pointed out by Dr. Moriyama of JAXA. The audience and panelists seemed to reach a consensus that it is significantly important not only to develop new technologies but also to establish the

system operation structure for daily and emergency operations.

4. Concluding remarks

About 40 people attended the panel and they enjoyed the panel discussion with six panelists. In the case of disasters, satellite is an indispensable communication system to secure communications services when terrestrial networks are damaged. The author feels that this panel discussion has revealed one of the ways for satellites to go.

The author would like to take this opportunity to express his sincere appreciation for the contributions of the six panelists as well as the participants.

Organizer of the Panel



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