

# Communication Satellite Applications WG

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## Chairman's Summary Report

**Co-chairs:**

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# Objectives

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- In order to promote a new application of the satellite communications in the Asia-Pacific region, the CSA WG;
  - provide good opportunities to exchange each country's status about digital divide issues as well as the broadband service,
  - share information and experience based upon the actual use for realizing cooperation among countries,

# Point of Discussion

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- ▣ The CSA WG in the APRSAF-18 aims discussed;
  - A) New applications of or concepts for satellite communication for tele-education, tele-medicine and disaster management in the Asia-Pacific region
    1. Contribution of communications satellite to Great East Japan Earthquake
    2. Information sharing of technical trend for ship monitoring in the Pacific region (Joint Session with EO WG)
  - B) Promotion of activities on Global Navigation Satellite System (GNSS) in the Asia-Pacific region.

# Participants and Presentations

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- 32 participants  
from 11 countries
  - Indonesia, Japan, Korea, Lao PDR, Malaysia, Mongolia, Pakistan, Singapore, Thailand, Turkey, USA
- from 1 organizations
  - UNESCAP
  
- 23 presentations
  - 4 presentations : Contribution of communications satellites to Great East Japan Earthquake
  - 6 presentations : Communications Satellite Systems and Applications
  - 6 presentations : Activity reports on the Communications Satellite Application
  - 1 presentations : Activity reports on the Global Navigation Satellite System (GNSS)
  - 6 presentations : Share the information of technical trend for ship monitoring in the Pacific region (Joint session with EO WG )

# Meeting Summary

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- A) Contribution of communications satellites to Great East Japan Earthquake
- Restoration support activities using communications satellites after the earthquake were provided by JAXA, NICT, Sky Perfect JSAT and LASCOM, and their experiences were shared in the WG.
  - The WG recognized that the communications satellite networks were indispensable and played a major role in the restoration after the earthquake.
  - Required satellite system in the disaster learned from these activities were also introduced.
    - ✓ Immediate provision of emergency information and broadband satellite internet access
    - ✓ Small and portable ground terminal
    - ✓ Flexible power supply

# Meeting Summary (Cont'd)

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## B) Communications Satellite Systems and Applications

- Satellite operators (Turksat, Thaicom and SingTel) and ICTPA, government of Mongolia provided the information about their current and planned satellite fleet and their satellite communications applications such as;
  - ✓ Disaster relief
  - ✓ Distant education
  - ✓ e-government
  - ✓ Maritime communications
  - ✓ Ka-band utilization
- Satellite manufacturers (MELCO and NEC) explained the commercial satellite market trend and satellite technology trend.

# Meeting Summary (Cont'd)

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## C) Activity reports on Communications Satellite Applications

- Experiment results using the WINDS were reported by ARIB and JAMSS.
- Indonesia requested that the WINDS experiment continued allowing more participants.
- Detailed information about the Space Data Center was provided by AGI.
- Current status of space technology in Lao PDR was reported by space technology department of Lao PDR.
- Technology on integrated satellite and terrestrial communication system in Korea was introduced by ETRI.



# Meeting Summary (Cont'd)

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## D) Activity reports on the Global Navigation Satellite System (GNSS)

- The result of the 3<sup>rd</sup> Asia Oceania regional workshop in November under 86 participants from 9 countries was reported by JAXA, and 5 proposed Multi-GNSS joint experiments were endorsed to be implemented in this workshop.
- The Multi GNSS ASIA (MGA) established.
- Current status of the Asia Oceania Multi-GNSS Demonstration Campaign including the Multi-GNSS monitoring network also provided.

# Meeting Summary (Cont'd)

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- E) Share the information of technical trend for ship monitoring in the Pacific region (Joint Session with EO WG)
  - Introduction of sea ship monitoring in Europe and America cases (JAXA/SAPC)
  - Report of sea-ship monitoring in Asian region
    - a) The result of ALOS collaborative investigation (Dr. Motofumi Aarii, Mitsubishi Space Software Co., Ltd., Japan)
    - b) AIS by SDS4 mission (Mr. Suetsugu Shinohara, JAXA, CSA WG)
    - c) Indonesian Maritime Surveillance by LAPAN-ORARI and LAPAN-IPB (Mr. Robertus Heru Triharjanto, LAPAN, Indonesia)
    - d) Research and potential applications of nano-satellite for ship traffic monitoring in Viet Nam: (Mr. Tri Dinh Quoc, FSpace Laboratory - FPT University, Vietnam)
    - e) Commercial case (Dr. Albert Antoine, Exact Earth, Canada)

# Meeting Summary (Cont'd)

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- E) Share the information of technical trend for ship monitoring in the Pacific region (Joint Session with EO WG)
- Recognize the growing applications of space-based Automatic Identification System (AIS) for ship monitoring in Asia and Pacific region, especially recognize the advantage of fusing space-based AIS & SAR data; and encourage further research & development for its applications, data fusion, and integration of sensors in one platform.
  - Encourage the continuous information sharing between EO and satellite communication community on the integration of space-based AIS and SAR data; and expect EO and CSA working groups to hold future joint session in coming APRSAF.

# Recommendations

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- Recognize the significance and effectiveness of satellite communications in the disaster relief and restoration activities, and share the experiences learned from the recent activities;
- Encourage more active interactions among space agencies, research institutions and private sectors with the aim of expansion of the communications satellite applications and researches including the space-based Automatic Identification System (AIS) for maritime activities;
- Welcome the sound progress of the Multi GNSS demonstration campaign, such as the adoption of the first Multi GNSS joint experiments including the QZS-1 satellite “MICHIBIKI” utilization, and look forward to the further deployment of the Multi GNSS joint experiments<sup>11</sup> in the Asia Pacific region.

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**Thank you for your attention.**