APRSAF-18
Earth Observation WG

9 December 2011

Co-chairs of EO WG:
Dr. Leong Keong Kwoh,
Center for Remote Imaging, Sensing and Processing (CRISP)
Dr. Shin-ichi Sobue,
Japan Aerospace Exploration Agency (JAXA)
Conclusions and Recommendations of Earth Observation Working Group on December 6-7

Proposal of an APRSAF new initiative, APRSAF Regional Readiness Review for Key Climate Missions (Climate R^3)
Conclusions and Recommendations

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Summary of EO WG

- 104 Participants
- Joint Session with CSA WG
- Joint Session with SEU & SEA WG welcoming special guest Mr. Soichi Noguchi, JAXA astronaut
SAFE initiative
- Overview
- Approved new prototype presentation
- Wrap-up Report (MOWRAM, Cambodia) (MONRE, Lao PDR)
- Final Report (CCD, Sri Lanka) (LAPAN, Indonesia)

- Recognize good progress of SAFE prototyping, especially emerging knowledge sharing among prototypes; and encourage further knowledge sharing and collaborations in Asia and Pacific region through SAFE web portals, SAFE workshops, and stakeholder meetings in each prototype implementation and its following-up operations.
APRSAF Regional Readiness Review for Key Climate Missions (Climate R³) Session - Recommendation

- Confirm the review of activities and outcomes of the Pilot Phase of the Climate R³ (Regional Readiness Review) initiative led by Australia since APRSAF-17, agreeing that Climate R³ has significant potential in promoting improved connections between space data suppliers and climate information users* in the region; and this can play an important role in developing a regional advocacy voice in support of the region's space data suppliers and in supporting the development of well-informed regional climate policy.

- Recommend Climate R³ to be adopted as an ongoing and high profile initiative of APRSAF, initially managed under the auspices of the EOWG.

- Further discussion on the scope and approach to the next steps in 2012 will be held with EOWG Co-Chairs in the coming months with a view to developing a terms of reference and work plan to see Climate R³ formally introduced as a new initiative. 2012 activities will build and expand on the Pilot Phase topics of soil moisture, precipitation, and land cover.

*Climate information users considered to be primarily government science/research groups
APRSAF Regional Readiness Review for Key Climate Missions (Climate R³) – Relationship with WGs and Other Initiatives
Agriculture & Food Security session
- Global Agricultural Geo-monitoring Initiative (Masami Onoda, GEO Secretariat)
- UNOOSA/UNSPIDER: Agriculture Monitoring and Food Security Assessment (Ms. Suju Li)
- Country engagement with Agriculture and food security
  - Singapore: Food Security and Remote Sensing (Mr. Leong Keong Kwoh, CRISP)
  - Indonesia: Agriculture development for strengthening food security (Ms. Rizatus Shofiyati, Indonesian Center for Agric LAnd Resources R & D, Ministry of Agriculture)
  - Kasetsart University, Thailand: Earth Observation System Experiences on Thailand Agriculture Disaster (Prof. Hansa Vathananukij)
  - RESTEC, Japan: RESTEC Activities for Agriculture and Food Security (Mr. Kaname Ikeda)
  - Pakistan: EO Systems, Technologies and their Application for Food Security and Agriculture (Mr. Khalid Bashir, SUPARCO)
  - Vietnam: Results of remote sensing application for rice monitoring in southern Viet Nam. (Dr. Nguyen Dao Lam, GIRS, HCMIRG, VAST)
  - Food Security: EO Application framework in India (Dr. V. K. Dadhwal, Director, National Remote Sensing Centre, ISRO)

- Recognize the importance of climate change impacts on food security and note anticipated discussion around the water-food-energy debate at Rio+20 in June 2012 (APEC Agriculture meeting in January at Tokyo & in February at Canberra, WG5 (Agriculture and Food Security) of 5th GEOSS Asia Pacific Symposium in April 2012 at Tokyo and G20 Agriculture ministers meeting in June at Mexico)
- Support the GEO-GLAM activity through nomination of an APRSAF EOWG representative, participation, and promotion of data provision by APRSAF participating agencies.
- EOWG Chairs to contact GEO SEC to
  - propose the inclusion of rice crop monitoring in Asia within the GEO-GLAM Work Plan
  - Ensure linkages with FAO AMICAF to include climate impacts on food security

- Recognize the advantage of virtual satellite constellations including SAR, especially for continuous acquisition of phenological data.
Agriculture & Food Security session II (Private Sector Initiative)

- Private Sector Report
  - JAMSS: Dynamic mapping for crop growing status using constellation satellite data and GPS (Dr. Dorj Ichikawa)
  - Fujitsu: Remote sensing solutions for advanced agriculture (Mr. Toshiaki Ariyama)
  - AGI: Acquiring satellite data for food security (Mr. Adam Gorski)
  - PASCO: Paddy Rice Field Monitoring By A High Resolution Sar Satellite (Dr. Tadashi Sasagawa)
  - MELCO: Evolution of SAR Satellite for Agriculture Applications (Mr. Hiroyuki INAHATA)
  - RSV Geoconsulting and Management Services: Public-Private Partnership in Geospatial Information Management: A Conceptual Framework in Mitigating the Ill-effects of Natural Disasters in Agricultural Development Process (Mr. Randolf Sevidal Vicente)

- Recognize contribution from private sectors for agricultural monitoring and food security by EO and geospatial information technology, and endorse not-for-profit collaboration between APRSAF governmental agencies, private sector and other related entities for food security issues.
Joint Session with CSA Working Group

- 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 Arii, 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)

✓ Recognize the growing applications of space-based Automatic Identification System (AIS) for maritime sector in Asia and Pacific region, especially recognize the advantage of space-based AIS & SAR data fusion; 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.
Summary of EO WG

- Special Session: Water session
  - Pi-SAR-L flood observation in Thailand (Dr. Shin-ichi Sobue, JAXA)
  - ADB: Space Technology Applications to Water Sector in Asian Development Bank (Mr. Yusuke Muraki)
  - JICA: Space Technology Applications in water and disaster sector in JICA (Mr. Kazuya Suzuki, JICA)
  - UNSGAB (Dr. Olivia la O'Castillo)

- Realize the importance of tackling water issues induced by climate changes, using space technology; and recommend to share success stories or good practices in Asia and Pacific region in APRSAF and other opportunities such as 2nd Asia-Pacific Water Forum in Thailand, 6th world water forum in April at Marseille, and WG1 (Asian Water Cycle Initiative) of 5th GEOSS Asia Pacific Symposium in April 2012 at Tokyo.
- Appreciate having increased contribution from donor entities (ADB & JICA), national science funding agencies (JSPS) and UN organization (UNSGAB); and encourage EO community to expand discussions/dialogues with donor entities for future projects applying space-based technology for various application and scientific research areas including water issues.
- Support planning of a technical session in 2nd Asia-Pacific Water Forum next year (in consultation with UNSGAB and other related entities) – to promote the application of space technology to water issues and knowledge sharing.
Joint Session with SEU and SEA Working Groups

- Astronaut Photography, for Earth Observation, Outreach and Enhanced utilization of the ISS (Mr. Soichi Noguchi, JAXA Astronaut)

- Appreciate fantastic presentation from Astronaut Noguchi on the photographs of beautiful earth from ISS.
- Recognize the contribution of photographs from ISS both for scientist and general people, as well as the psychological benefit for astronauts.
Conclusions & Recommendations to the Plenary

- APRSAF in support of Climate Change
  - Recommend that the APRSAF Regional Readiness Review for Key Climate Missions (Climate R³) be adopted as an ongoing and high profile initiative of APRSAF.

- EO Applications in Food Security Issues
  - Support the inclusion of rice crop monitoring in Asia within the GEO Global Agricultural Monitoring (GEO-GLAM) Initiative Work Plan.

- EO Applications in Water Issues
  - Recognize the importance of tackling water issues induced by climate change using space technology in the Asia and Pacific region; and support planning of a technical session in the 2nd Asia-Pacific Water Forum next year (in consultation with United Nations Secretary-General’s Advisory Board on Water & Sanitation (UNSGAB) and other related entities) – to promote the application of space technology to water issues and knowledge sharing.