



*The 22<sup>nd</sup> Session of the Asia-Pacific Regional Space Agency Forum (APRSAF-22)*

*Space Technology Working Group (STWG)*

*Concept Note*

**1. Background and Objectives**

The Space Technology Working Group (STWG) aims to provide active information exchange and human-resource development to support space-technology development and its utilization in the Asia-Pacific region.

The first session of the Working Group (WG) was successfully held in 2014 at APRSAF-21, and dealt with topics ranging from small-satellite development and operation, ground facilities, and engineering management, to advanced technologies. Participants in the session also shared information about their activities in capacity building and training in the region and beyond. Participants agreed to continue this WG for the next APRSAF session and expressed interest in discussing a range of topics that includes Global Navigation Satellite System (GNSS) payload technologies for science missions, and interoperability of ground stations.

As the conclusion of the first meeting, the following recommendations were provided for the WG:

- A) To share activities and experiences in space technology, small satellites, launch opportunities and engineering management, as well as to promote cooperative opportunities and encourage wider participation;
- B) To promote information exchange about and to encourage participation in capacity-building programs and training opportunities;
- C) To recognize the importance of debris issues and promote information exchange about technical aspects of debris mitigation and removal;
- D) To maintain this WG's activities in order to realize the above-mentioned recommendations;
- E) To discuss how to deal with "inter-working group" topics, such as GNSS, at the APRSAF Executive Committee (ExCom).

**2. STWG Program Structure**

Based on the recommendations for STWG activities listed above, the draft program structure of the STWG for this year's session is shown below. The WG co-chairs are pleased to call for presentations (approx. 10 minutes each) on each topic from the Asia-Pacific region as well as from other regions and industries, and expect a lively exchange of information and views among experts/researchers/engineers



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in the relevant areas.

Participants in this WG are also expected to contribute to discussion about ways to promote future collaborative activities, and to work toward drafting recommendations as the working-group output to be presented at the APRSAF-22 Plenary, which will be held on 4<sup>th</sup> December 2015.

### Space Technology Working Group Sessions

Date: 1-2 December 2015

1. Opening of the session
2. General introduction and guidance for STWG
3. Technical sessions

#### **Technical Session 1: Small-Satellite Road Maps and Strategy, Advanced and Innovative Technologies, Missions and Payloads, Educational Activities**

Current topics related to development and applications of small-scale satellites (small, micro- and nano-satellites) and their capabilities will be considered in this session. In particular, this session is planned to be threefold, addressing:

- a) Road maps, strategy and future plans for small-satellite development;
- b) Advanced, cutting-edge, and innovative technologies;
- c) Innovative missions and payloads.

Presentations on state-of-the-art technologies such as high-performance components and devices are also expected.

#### **Technical Session 2: Engineering Management**

Engineering-process management is an essential part of the reliable development of spacecraft. Presentations on Systems Engineering (SE), Design and Test Standards, and other relevant areas, are expected.

#### **Technical Session 3: Space Debris**

The previous year's participants in the STWG re-acknowledged the importance of space-debris issues from the perspective of the long-term sustainability of space activities and encouraged information exchange on mitigation and removal technologies for space debris. Presentations on activities related to space-debris mitigation and efforts toward sustainable use of outer space are invited.

#### **Technical Session 4: Applications of Space Technology**

This session will include presentations on topics such as technologies for AIS and GNSS.



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**Technical Session 5: Launch and Experiment Opportunities**

Activity information regarding launch opportunities of small (nano/cube) satellites and opportunities for experiments using space- and ground-based assets will be shared among participants.

**Technical Session 6: Capacity-Building Efforts and Promoting Collaboration**

Information on capacity-building and educational opportunities relevant to this Working Group's topics will be shared among the participants.

Discussion is also encouraged about collaboration opportunities, and to highlight and further promote collaboration efforts that have been performed among the APRSAF participating entities, such as joint micro-satellite development and data sharing by small satellites.

\*Please note that the topics described in the technical sessions are subject to change.

4. Overall discussion/Future work of STWG/Drafting observations and recommendations
5. Closing of the session