

1st IAA North East Asia Symposium on Small Satellites - Serving the Needs for the Benefits of the Region Ulaanbaatar, Mongolia, August 21-23, 2017

Symposium Report

The 1st IAA North East Asia Symposium on Small Satellites - titled "Serving the Needs for the Benefits of the Region" - took place in Mongolia's capital Ulaanbaatar from August 21-23, 2017. Initiated by IAA academician Dr. M. Saandar on behalf of the Mongolian small satellite community the symposium was organized by the International Academy of Astronautics (IAA), hosted and supported by the Mongolian Society of Photogrammetry and Remote Sensing (MSPRS), the Mongolian Academy of Sciences (MAS) and MonMap Engineering Services as well as promoted by the Mongolian Ministry of Education, Culture, Sciences and Sports (MECSS), the National University of Mongolia (NUM), the Asian Association of Remote Sensing (AARS) and the International Society of Photogrammetry and Remote Sensing (ISPRS).

In order to provide a forum for scientists, engineers, managers and students to exchange information about small satellites and in particular on state of the art technologies as well as planned and on-going programs and missions. The symposium offers a global vision and an open, general view but is focused on the needs and developments of North East Asia. An emphasis is placed on advanced technologies, distributed platforms and payloads, Earth observation data, applications and education.

The symposium was attended by 62 participants from twelve countries (Canada, China, France, Germany, Italy, Indonesia, Japan, Mongolia, Russia, South Korea, United Kingdom, USA) from three continents with a significant participation of students and young professionals. The symposium comprised of seven topical sessions, two panels, a poster session and commercial exhibitions and presentations as well as a welcome/ice-breaker reception, exhibition cocktail and symposium dinner combined with a visit of the space flight history museum.

During the opening the participants were cordially welcomed by Prof. G. Chuluunbaatar, Minister of Education, Culture, Science and Sports on behalf of the Government of Mongolia, by Prof. D. Regdel, President of the Mongolian Academy of Sciences and honorary chairman of the symposium, by Dr. R. Sandau, IAA Director and symposium co-chair on behalf of the International Academy of Astronautics and Dr. M. Saandar, head of the local organising committee and symposium co-chair - all underlining the importance of this meeting and space activities and small satellites in particular as well as collaborative efforts for the benefits of the region and its partners.

The keynotes covered topics presented by senior representatives of industry, non-governmental organisations, academia and IAA taking into account applications, business, education, historic and organisational perspectives from an global point of view. The first panel with very similar international

composition of participants emphasised the benefits and future potential of small satellites for utilisation, education, commercialisation and international collaboration and provided a mid-term outlook towards the end of the next decade.

The first two sessions on worldwide achievements and international endeavours provided an overview on exemplary global small satellite activities, commercial opportunities, international associations and collaborative networks promoting scientific activities in Earth observation and its applications, as well as capacity building and engineering education but also instances of specific technical solutions for small satellite applications.

The third session focused on missions of North East Asia representing the wide variety of small satellite platforms from Japan, Mongolia, Russia and South Korea. It also included the most recent status and initial results of the first Mongolian satellite (Mazaalai/BIRDS-M) released from the ISS in July 2017 shortly before the symposium.

The fourth and sixth session on small satellite technologies offered a glimpse on several technical solutions for components, subsystems and complete satellite busses from a wide range of countries of the region. The presented technologies and developments addressed different objectives of small satellite missions for space sciences, Earth observation or technology demonstrations.

Commercial presentations linked to the fifth session of regional companies and their international partners demonstrated the capabilities of space applications industry and their value of Earth observation products for the end users. The presentations accompanied the commercial exhibition with companies from Mongolia, China and the USA.

The seventh and final session on university projects saw presentations on university programs using small satellites for capacity building, education, and workforce development. The induction of the newly created Mongolian local chapter into UNISEC-Global was recognised during the session with the Mongolian POC and the UNISEC-Global secretary general present.

The poster session with more than 20 contributions focused primarily on Earth observation data from satellite missions and its applications. The presentations covered a wide range of topics from environmental monitoring to agriculture, resource, and disaster management.

The second panel with regional and strong local participation from universities, companies and government considered small satellites as very beneficial for the region, discussed different countries' strategies and approaches and emphasised current plans towards a Mongolian space council (and maybe later a space agency). to consolidate and advance its space activities.

The symposium closed with summary and closing remarks, poster and paper presentation awards and the approval of the conference declaration. It concluded with a strong recommendation to continue this valuable forum by holding subsequent symposia.