



UNITED NATIONS
Office for Outer Space Affairs

Nurturing the Development of Space Technology: the UNOOSA Perspective

**United Nations
Office for Outer Space Affairs**

**Space Industry Symposium 2010
Vienna, Austria**

8 February 2010

UN History of Space Technology

- UNISPACE I: Establishment of the UN Programme on Space Applications:
 - In its resolution 37/90 of 10 December 1982, the General Assembly expanded the mandate of the United Nations Programme on Space Applications to include, in particular the following element: Stimulation of the growth of indigenous nuclei and an autonomous technological base, with the cooperation of other United Nations organizations and/or States Members of the United Nations or members of the specialized agencies.



**THIRD UNITED NATIONS CONFERENCE
ON THE EXPLORATION AND PEACEFUL USES OF OUTER SPACE**

Small Satellite Technology

- Increasingly capable small satellites can be developed with an infrastructure and at a cost that is now also affordable to universities and smaller institutions
- University-based small satellite projects have led to the establishment of small and medium-sized space enterprises that are now marketing their products on a commercial and world-wide basis
- Interest in a growing number of countries to establish capabilities for basic space technology development
- Such developments can create new opportunities for international space cooperation and can contribute to further promoting the use of space technology and its applications

Small Satellite Activities

- Small satellites have been addressed by the Committee on the Peaceful Uses of Outer Space since the mid-1990s
 - Microsatellites and Small Satellites: Current Projects and Future Perspectives for International Cooperation, 2 November 1995 (A/AC.105/611)
 - Symposium on Utilization of Micro- and Small Satellites for the Expansion of Low-cost Space Activities, Taking into Account the Special Needs of Developing Countries, 12-13 February 1996 (A/AC.105/638)
 - Report on the United Nations/Instituto Nacional de Técnica Aerosespecial/European Space Agency International Conference on Small Satellites: Missions and Technology, Madrid, 9-13 September 1996 (A/AC.105/645)
- UNISPACE III
 - UNISPACE III, "Report of the Technical Forum", 28 July 1999 (A/CONF.184/L.13)
 - UNISPACE III, Technical Forum, "Conclusions and proposals of the Workshop on Small Satellites at the Service of Developing Countries", 27 July 1999 (A/CONF.184/C.2/L.7)
- UN/IAA Workshop Series on Small Satellites

Basic Space Technology Initiative (BSTI)

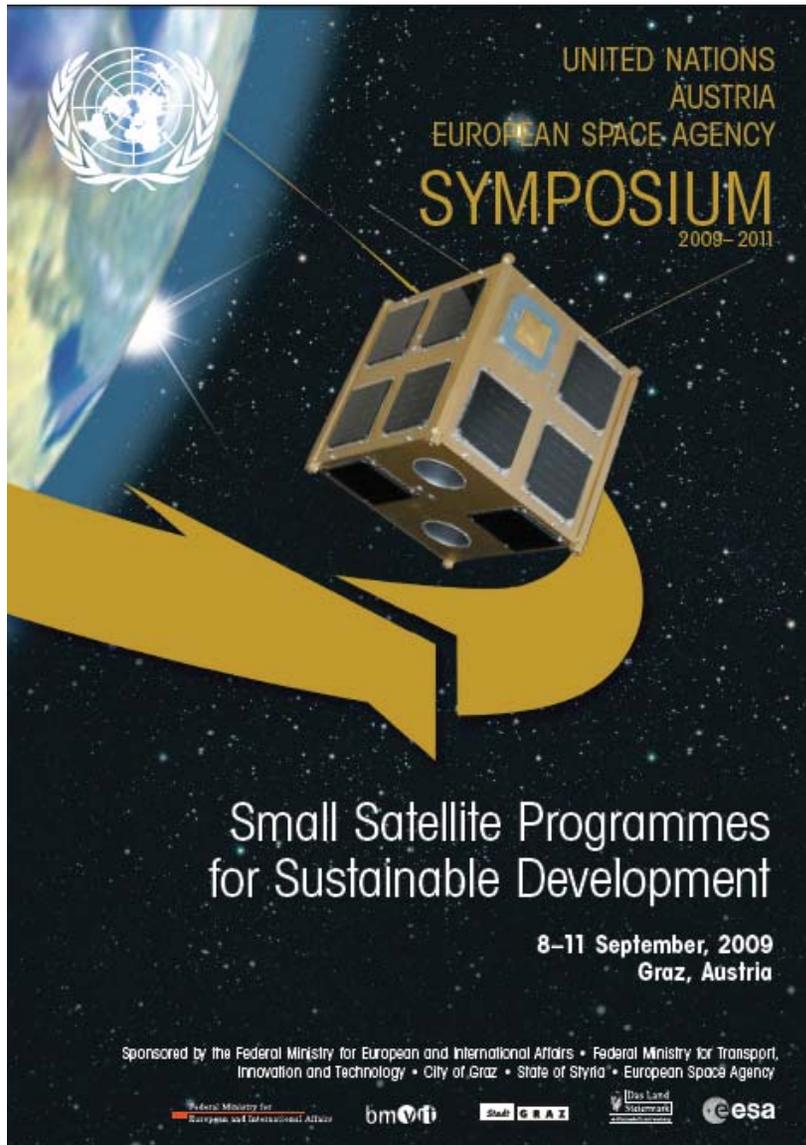
Mission Statement

To enhance access to space applications tools for sustainable development through building capacity in basic space technology

Objectives

- Respond to the growing interest in many countries to establish indigenous capacities in basic space technology
- Address the growing role of small satellites for education, basic space science and for operational applications
- Assist countries to assure adherence to the relevant regulatory frameworks (registration, frequency allocation, space debris mitigation guidelines...)
- Promote the adoption of standards for data protocol, communication, etc.
- Promote international cooperation and information exchange in capacity building in basic space technology

UN/Austria/ESA Symposium on Small Satellites



- Three-year series of Symposiums on the theme “Small Satellite Programmes for Sustainable Development” (2009-2011)
- Co-sponsored by Austrian Government and the European Space Agency and held in Graz, Austria
- Forthcoming symposium to be held 21-24 September 2010 will focus on payloads for small satellites

Small Satellites and Industry

- **Spin-offs to other industry sectors**
- **Industry examples:**
 - Satrec Initiative (the Republic of Korea)
 - Surrey Space Technology Limited (United Kingdom)

International Registration and Regulatory Frameworks

- Under international law, international registration and regulatory frameworks for satellites exist
- **1968 Outer Space Treaty:**
 - States “bear international responsibility for national activities in outer space...**whether such activities are carried on by governmental agencies or by non-governmental entities**” (Article VI)
 - States are “internationally liable for damage” caused by their space objects (Article VII)
- **1972 Liability Convention**
 - Absolute liability (Article II)
 - Fault liability (Article III)
 - Joint and several liability (Article IV)
- **1976 Registration Convention** identifies which nation is the “State of registry” for a satellite (Article II)
- **ITU Radio Regulations**, *inter alia*, require mandatory regulatory procedures for frequency allocations for satellites

International Registration and Regulatory Frameworks: Relevance for Small Satellites Development

- With the increase of small satellites, it is important that international registration and regulatory frameworks are complied with.
- **Why?**
 - International responsibility and liability in accordance with international space law
 - Satellite registration identifies the State responsible for a satellite
 - Self-interest: *inter alia*, frequency registration protects used-frequencies from interference and conflicts from other satellites
- **How?**
 - **ITU Master International Frequency Register** (maintained by ITU)
 - Website: <http://www.itu.int/ITU-R/space/support/index.html>
 - **United Nations Register of Objects Launched into Outer Space** (maintained by UNOOSA)
 - Website: <http://www.unoosa.org/oosa/en/SORRegister/index.html>

Conclusions

- Growing world-wide interest in developing capabilities in developing basic space technology, particularly in the utilization of small satellites
- Pursuant to the results of the series of Graz Symposia, the BSTI will reach out regionally and internationally to organize activities for education and applications on small satellite technology
- Following past achievements of the Programme, BSTI aims at developing an education curriculum on basic space technology
- In cooperation with ITU, the BSTI will promote the implementation of requirements of international registration and regulatory frameworks for satellites

Thank you for your attention!

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