



UNITED NATIONS
Office for Outer Space Affairs

INFORMATION NOTE

United Nations/Costa Rica Workshop on Human Space Technology

Organized jointly by
**the United Nations Office for Outer Space Affairs and
the Government of Costa Rica**

Co-organized by
the International Academy of Astronautics

Hosted by
the Government of Costa Rica

San José, Costa Rica

7-11 March 2016

1. Introduction

A five-day international workshop on human space technology in San José, Costa Rica, from 7 to 11 March 2016 is being organized by the United Nations Office for Outer Space Affairs in cooperation with the Government of Costa Rica and co-organized by the International Academy of Astronautics (IAA), as part of the Human Space Technology Initiative (HSTI) within the framework of the United Nations Programme on Space Applications.

The Workshop will bring together senior experts, professionals, and decision-makers from public sectors, academia and industries worldwide. The Workshop participants will exchange information on achievements in human space programmes and discuss how to promote international cooperation by further facilitating the participation of developing countries in human space exploration-related activities. It will also focus on creating awareness of the benefits of human space technology and its applications, building capacity in microgravity science education and research, and exploring participation in space commercialization.

2. Background and Objectives

The establishment of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) and its Scientific and Technical and Legal Subcommittees coincided with the time of the launch of Sputnik in 1957 and the first human space flight by Yuri Gagarin in 1961. In its resolution establishing the Committee, the General Assembly stressed that this body was created to review the scope of international cooperation in peaceful uses of outer space, to devise programmes in this field to be undertaken under United Nations auspices, to encourage continued research and the dissemination of information on outer space matters, and to study legal problems arising from the exploration of outer space.

The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies came into force soon before the first

human, Neil Armstrong, set foot upon the surface of the Moon in 1969. This treaty established, inter alia, that “exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind”.

The third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) was held in Vienna in 1999 and recognized that large human space exploration missions exceed the capacity of a single country and that cooperation should be privileged in this area, and thus, recommended the development of future space science programmes, in particular, through international cooperation. One year later, in 2000, the first long-duration crew went on board the International Space Station (ISS). In 2009, the ISS attained a six-man crew operation.

In 2010, the Office for Outer Space Affairs launched the Human Space Technology Initiative (HSTI) within the framework of the United Nations Programme on Space Applications. HSTI aims at promoting international cooperation on human space flight and space exploration-related activities, creating awareness among countries on the benefits of utilizing human space technology and its applications, and building capacity in microgravity education and research. Under HSTI, various activities have been initiated.

In 2011, the United Nations/Malaysia Expert Meeting on Human Space Technology was held in Putrajaya, Malaysia, from 14 to 18 November. The meeting, the first of its kind in the United Nations, focused on facilitating a discussion on the benefits of human space technology, capacity-building and microgravity research in general and on identifying potential opportunities for developing countries to cooperate in human space technology activities and to take part in space science research. The Expert Meeting recommended that HSTI establish capacity building programmes, including providing educational materials, instrument distribution and/or access, national or regional expert centres, training of trainers, exchange programmes, and competition and motivation programmes.

In 2013, the United Nations/China Workshop on Human Space Technology was held in Beijing, China from 16 to 20 September. The objectives of the workshop were to enable participants to exchange information and views on human space exploration and human space technology and its applications and to put forward constructive and innovative proposals on promoting international cooperation in microgravity science, capacity-building and education, and human space exploration. The Workshop acknowledged that human space exploration could be regarded as a common goal of humanity to unite the world and that all countries and particularly emerging countries are encouraged to get involved in understanding and defining common goals and benefits of human space exploration.

There has been a steady trend within last decades towards a series of commercially-funded space exploration activities. Traditionally, space exploration and its related activities have been government-driven because of their high costs, with space industries acting as contractors to major national or international space agencies. Now, space industries, through technological innovation and the development of new business models, have been shifting from mere contractors toward independent competitors to launch their own activities following their initiatives in space, and they have become significant stakeholders in space exploration and its related activities.

Reaffirming the achievements made at the Expert meeting and Workshop, the Office for Outer Space Affairs, together with the Government of Costa Rica and IAA, is organizing the Workshop in 2016 as a further extension of the United Nations/China Workshop. The objectives of the Workshop are as follows:

- Exchanging information on the latest developments and future plans of human space flight and space exploration and commercialization
- Promoting capacity in microgravity education and other areas of space research and technology

- Identifying potential opportunities for new space-faring and emerging countries to participate in the growing field of space commercialization and exploration-related activities.
- Identifying the role of space industry in space commercialization and exploration-related activities
- Fostering research and technology development in space exploration towards the next-generation low cost instruments for fundamental physics
- Creating awareness on the benefits of human space technology and its multiple applications, in particular for global health and education, to promote sustainable growth in line with the 2030 Agenda for Sustainable Development.
- Discussing the way forward in international cooperation on human space flight activities in preparation for UNISPACE+50.

UNISPACE+50

The year 2018 will mark the 50th anniversary of the first United Nations Conference on the Exploration and Peaceful Uses of Outer Space – UNISPACE+50. The Committee on the Peaceful Uses of Outer Space (COPUOS) at its fifty-eighth session in June 2015 endorsed the plan of work for UNISPACE+50.

UNISPACE+50 will look at the contributions of the three UNISPACE conferences (UNISPACE I, held in 1968, UNISPACE II, held in 1982, and UNISPACE III, held in 1999) to global space governance.

In line with the 2030 Agenda for Development and sustainable development goals, UNISPACE+50 aims to chart the future role of COPUOS, its subsidiary bodies and the United Nations Office of Outer Space Affairs, at a time of an evolving and more complex space agenda when more participants, both governmental and non-governmental, are increasingly involved in ventures to explore space and carry out space activities.

The activities of the United Nations Programme on Space Applications, including the Human Space Technology Initiative, are an integral part of the UNISPACE+50 thematic cycle and are aimed at contributing to outputs under the following four pillars: space economy, space society, space accessibility and space diplomacy, in the lead-up to UNISPACE+50 in 2018.

Website: <http://www.unoosa.org/oosa/en/ourwork/hlf/hlf.html>

3. Preliminary Programme

The comprehensive programme will include plenary and working group sessions. The plenary sessions will consist of keynote speeches and technical presentations that will address achievements and plans at national, regional and international levels as well as address the broad perspective of human endeavors in space. The working group sessions will provide sufficient time for participants to discuss the corresponding topics and formulate recommendations.

The Workshop will cover the following topics:

- National, regional, and international space programmes
 - o Achievements, current activities and future plans
 - o International cooperation
- Microgravity science
 - o Research results and spin-off benefits
 - o Space- and ground-based microgravity facilities
- Capacity-building and education
 - o Awareness of human space technology and its applications
 - o Education and outreach activities in microgravity science
 - o United Nations Zero-gravity Instruments Project (ZGIP)
 - o United Nations Drop Tower Experiment Series (DropTES)
- Human space flight and exploration

- Utilization of space stations in low Earth orbit
- Future human spaceflight activities beyond low Earth orbit
- Participation of new space-faring countries and emerging countries in human space exploration
- Space industry and commercialization
 - Participation of space industry and the private sector in human space cooperation
 - Public-Private Partnerships in space exploration and commercialization
 - Commercial space activities and opportunities (space tourism, cargo transportation, in-space resource recovery)
- Environmental issues and natural hazards
 - Low-orbit, in-space facilities for climate monitoring
 - Next-generation sensor arrays for global monitoring
 - Space-bound early warning global systems
- Next-generation low-cost experiments in fundamental physics
 - Joint opportunities in space exploration for fundamental science in cosmology and particle physics
 - A deep space mission roadmap for cosmology research
 - Next-generation deep space experimental facilities for particle detection

The detailed Workshop programme will be made available at the Workshop webpage listed at the end of this Information Note.

4. Participants

Applicants must have a university degree and well-established professional working experience in a field related to the topics of the Workshop. Applicants should ideally be involved in the planning or implementation of space programmes in relevant governmental organizations, international or national agencies, non-governmental organizations, research or academic institutions, or industries.

5. Financial Support to Selected Participants

Within the limited financial resources available to the co-sponsors, a number of qualified applicants from developing countries, who have expressed the need for financial support will be offered financial support to attend the Workshop. This may include the provision of a round-trip air ticket between San José and the applicant's nearest international airport of departure as well as daily subsistence allowances to cover room and board for the duration of the Workshop. En-route expenses or any changes made to the air ticket must be the responsibility of the participants.

Due to a limited availability of financial resources, it is usually not possible to provide assistance to all qualified applicants who express the need for financial support. Applicants and their nominating organizations are therefore strongly encouraged to find additional sources of sponsorship to allow them to attend the Workshop.

6. Language of the Workshop and Presentations by Participants

English is the official working language of the Workshop. Selected participants who are funded by the co-sponsors of the Workshop will be required to prepare a presentation of approximately 10 to 20 minutes on topics relevant to the Workshop objectives and the programme. Presentations on actual on-going projects will be of particular interest to participants of the Workshop.

7. Dates and Location of the Workshop

The Workshop will be held in San José, Costa Rica, from 7 to 11 March 2016. All selected and invited participants will receive information with details on room, board, and other local arrangements.

8. Deadline for Submission of Applications

Complete applications and abstracts should be submitted to the Office for Outer Space Affairs through its online registration page (See the Workshop webpage listed at the end of this Information Note).

Applications for participation must be received by the Office for Outer Space Affairs **no later than 11 January 2016**, from applicants seeking funding support and **no later than 31 January 2016**, from self-funded applicants. Only complete applications with all the requested information and signatures will be considered.

9. Life and Health Insurance

Life and major health insurance is the responsibility of each selected participant or his/her nominating institution or government. The co-sponsors will neither assume any responsibility for life and major health insurance nor for any other expenses related to medical treatment or accidental events.

10. Further Information and Contact Details

For questions related to the programme and the application process of the Workshop, please contact **Mr. Takanori Miyoshi**, United Nations Office for Outer Space Affairs:

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For questions related to local arrangements for the Workshop, please contact **Ms. Marcela Zamora Ovares**, the point of contact for Costa Rica:

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For the latest information and updates about the Workshop, it is advised that you frequently visit the Workshop webpage at

<http://www.unoosa.org/oosa/en/ourwork/psa/hsti/costarica2016.html>.