



UNITED NATIONS
Office for Outer Space Affairs

INFORMATION NOTE

United Nations / Italy Workshop on the Open Universe Initiative

Organized by

The United Nations Office for Outer Space Affairs and
The Italian Space Agency, on behalf of the Government of Italy

Hosted by

The United Nations Office for Outer Space Affairs

20-22 November 2017, VIC, Vienna, Austria

1. Introduction and background

The United Nations has the mandate to promote international space cooperation and to assist its Member States with capacity-building in the use of space technology and its applications. For this purpose, the Programme on Space Applications, implemented by the Office for Outer Space Affairs, was established in 1971.

The Programme soon recognized that space science-related activities and access to astronomical facilities and data could offer a cost-effective, entry-level path for capacity-building and science and technology education. To address this, the Basic Space Science Initiative (BSSI) was launched under the Programme on Space Applications in 1991 (see A/AC.105/2013/CRP.11).

BSSI has been a long-term effort for the development of astronomy and space science through regional and international cooperation on a worldwide basis, particularly in developing nations. A series of BSSI workshops were held from 1991 to 2004, and astronomical telescope facilities and planetariums, donated by Japan, were established and inaugurated in several developing countries. From 2005 to 2008, BSSI focused on the preparations for and the follow-ups to the International Heliophysical Year 2007, which resulted in the establishment of 16 worldwide instrument arrays with close to 1000 instruments recording data on solar-terrestrial interaction. Since 2009 BSSI contributed with its activities to the International Space Weather Initiative (ISWI), which was concluded in 2012.

The growing number of citizen scientists and the development of the modern global economy beyond traditional industries to include the rise of personalised services available to the wider public via mobile devices are bound to influence the immediate future evolution of data services in space science. In the space science domain, various organizations have developed in the past decades a set of standards and best practises widely used among the scientific community. Several initiatives have as well developed in recent years interactive user-friendly platforms to provide access to products and services in astronomy, demonstrating the evolution towards a more transparent and inclusive ecosystem of tools and services.

The United Nations through, for example, the 2016 Dubai Declaration, anticipates the central role that space should play in the sustainable expansion of cultural and economic life by broadening access to data. With the deluge of data from small and large facilities, this can only come about via increased investment in software services. Although significant in relative terms, this will still amount to only a very small fraction of overall project costs.

The Italian Space Agency (ASI) has a long-standing history of contribution to space science through national and international programmes. Thanks to ASI's efforts, the Italian scientific community has had unprecedented successes in recent years in astrophysics and cosmology, contributing among other things to reconstructing the first moments of life in the universe or making essential steps towards understanding the gamma ray bursts phenomenon. In line with the United Nations, ASI shares the vision of open data as a driver for knowledge and development. With its ASI Science Data Center (ASDC), ASI has responded to the increasing demand for more open space science data providing services for several satellites, some of which are implementing a completely open data policy.

In order to provide more comprehensive visibility of available space science data services, improve transparency and facilitate the access to scientific data, the government of Italy proposed the "Open Universe" Initiative, under the auspices of the Committee on the Peaceful Uses of Outer Space (COPUOS) in its 2016 session (see original proposal in A/AC.105/2016/CRP.6). COPUOS welcomed the proposal and agreed that the Initiative would be included in the preparations of UNISPACE+50, a dedicated segment of the 61st session of COPUOS in 2018 marking the 50th anniversary of the first UNISPACE conference (see section 3). Furthermore, in the 1st International Space Forum at Ministerial level, all Ministries, Heads of delegations, governmental representatives, and experts welcomed the Forum, viewing it as a starting point, among other objectives, to consider the Open Universe initiative proposed by the Italian delegation for expanding availability of and accessibility to open space science data.

The Initiative has been devised to stimulate dramatic increases in the use of space science data to satisfy anyone in the world with interest in science on its broadest canvas, the Universe. Its aims are to foster dialogue between the data providers from projects of all sizes and the networks of creative forces at large in the modern internet in order to extend the potential of scientific discovery to all parts of the world for research, education and inspiration among all communities from professionals to citizens of all ages. The United Nations, as an independent and neutral body, would take an active central role in the promotion of open data sharing within the Initiative, serving as well to connect with new and upcoming players in the field of astronomy around the world, including developing and emerging nations.

As a way to contribute to these goals, the United Nations and the Government of Italy are organizing the *United Nations/ Italy Workshop on the Open Universe Initiative*, under the framework of the United Nations Programme on Space Applications. The Workshop will take place at the Vienna International Centre in Vienna, Austria, from 20 to 22 November 2017, and is supported by the Government of Italy. It will bring together experts from the space science and astronomy sector, as well as decision makers, educators, practitioners and other end-users to discuss the most recent advances and methods to access and utilise space science and astronomy data. The Vienna workshop openly invites participation from the world's providers of space science data and current and potential clients in education, commerce and other sectors.

The Workshop follows a preparatory Expert Meeting held at ASI headquarters in April 2017, where data providers, space agencies and other experts discussed the objectives of the Open Universe Initiative. The participants of the workshop emphasized the importance of promoting the best practices and standards developed by the scientific community over the past decades, expressed their interest in advancing towards a more open and transparent sharing of scientific data, and highlighted the value of education in science as a prerequisite for the Initiative.

2. Objectives

The objectives of this Workshop are to:

1. Review the status of current initiatives in space science with regards to data sharing including lessons learned from the past and on-going activities.
2. Promote the adoption of established best practices and standards in the field of astronomy and planetary science, and of FAIR principles in data sharing (Findable, Accessible, Interoperable, and Re-usable).
3. Discuss long-term sustainability of astronomy and space science data archives as an enabler for the robust provision and preservation of science-ready data and its links to the UNISPACE+50 thematic priority 7 on “Capacity Building for the 21st Century” and the Sustainable Development Goal (SDG) number 9 on “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”.
4. Exchange views on the design of a strategy to satisfy in a timely fashion the various requirements of an ever more diverse clientele, and on any expansion plans for service provision needed.
5. Examine the opportunities for education and capacity-building in the field of space science data, linked to UNISPACE+50 Priority 7 “Capacity-building for the 21st Century” and the Sustainable Development Goal number 4 on “Quality Education”.
6. Explore the potential to foster citizen innovation through the access to open source science-ready astronomical data and promotion of citizen science platforms.
7. Discuss the coordination of international efforts of reviewed providers of space science data according to a set of criteria on ease of access, quality, robustness, transparency, completeness and timeliness.
8. Discuss the way forward and objectives of the Open Universe Initiative, as well as related capacity-building and international cooperation activities, in preparation of UNISPACE+50.

3. Expected contributions to UNISPACE+50

A series of high level fora, on preparation for UNISPACE+50, have identified key pillars to address the broader perspective of space activities. One of these pillars is “*Space Accessibility*”, which refers to all user communities and decision-makers being able, on an equal basis, to benefit from and use space technologies and space-based data. The Open Universe initiative, by promoting access to open space science data and aiming to expand the end-user base directly contributes to this purpose.

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 review the contributions that the three UNISPACE conferences (UNISPACE I, held in 1968, UNISPACE II, held in 1982, and UNISPACE III, held in 1999) have made 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 are an integral part of the UNISPACE+50 thematic cycle and are aimed at contributing to outputs under the four pillars space economy, space society, space accessibility and space diplomacy. For additional information on UNISPACE+50 see <http://www.unoosa.org/osa/en/ourwork/unispaceplus50/index.html>.

The promotion of the access and use of science-data will directly contribute to the UNISPACE+50 Thematic Priority 7: “Capacity building for the 21st Century”, as well as the SDG4 on “Quality Education” by further advancing knowledge and increasing the level of sharing of scientific discoveries among user communities and with new participants in all parts of the world. In addition, the open-source philosophy and the proposed collaborative approach in the development of the platform are aligned with Thematic Priority 1: “Global Partnership on Space Exploration and Innovation”. Finally, the access to planetary science data, including solar activity, can potentially support Thematic Priority 4: “International Framework on Space Weather Services”, with possible projects such as citizen science distributed reporting on location and intensity of auroras.

Discussion groups will work towards the development and consolidation of a series of recommendations for UNISPACE+50, with contributions from data providers and end-users. The desired outcome of the workshop will be a set of observations, recommendations and a roadmap proposal for the Open Universe Initiative that will inform the preparation for UNISPACE+50 regarding transparency, availability, accessibility and use of space science data by the wider community of researchers, amateur and citizen scientists, and other end-users. These recommendations may ultimately form part of a global Space2030 Agenda.

4. Location and Date

The Workshop will be held from 20 to 22 November 2017 at the UN Headquarters in Vienna, Austria. Invited participants will receive information with details on logistics and other local arrangements.

5. Programme

The programme of this Workshop will include keynote addresses, plenary presentations, discussions and a poster session on the following topics:

Session 1: **Current status and perspectives in space science data**

Session 2: **Beyond the current paradigm: new initiatives and services**

Session 3: **Social and economic benefits of universal open data:** open access as an enabler of education, capacity building and knowledge-based economic development

Session 4: **Astronomy and space science citizen-science projects**

Session 5: **International cooperation, policy and legal aspects**

Session 6: **Roadmap to future success**

Kindly note that the Workshop organizers may modify the number and themes of sessions of the final programme. The morning plenary sessions will be dedicated to invited talks and presentations proposed by the participants. The afternoon sessions will be organized as splinter meetings distributed in two or more rooms dealing with different thematics/topics with the presence of a moderator and a rapporteur.

In addition, a splinter session would allow various data centres and service providers to showcase and demonstrate tools and applications.

A final discussion and wrap-up session will concentrate on how efforts on open space data can contribute to the SDGs and the UNISPACE+50 thematic priorities.

6. Language of the Workshop

The working language of the Workshop will be English.

7. Participation

The Workshop is expected to bring together participants from national, regional, and international organizations from:

- Representatives of major space science data providers and organizations promoting standards and data formats
- Government and space agencies
- National, regional and international organizations
- Academic, educational and research institutions including astronomical observatories, planetariums and science museums
- Non-governmental organizations, private sector and industries, including open source data promoters
- The growing community of citizen scientists, with focus on astronomy or science related projects
- Intellectual honest brokers, e.g. philosophers, economists, statisticians, data theorists, etc.

Applicants must have a well-established academic or professional working experience in a field related to the topic of the Workshop. Applications from qualified female participants are particularly encouraged.

Selected participants will be requested to prepare a presentation of approximately 10 to 20 minutes on topics relevant to the Workshop objectives. Presentations on actual on-going projects will be of particular interest. In addition, they are expected to contribute to the moderation of discussion sessions and reporting activities.

The sponsors will jointly select international participants from candidates nominated by their governments and/or institutions. Selection of participants will be made on the basis of:

- [i] hierarchical level and experience relevant to the Workshop objectives;
- [ii] degree of current involvement in the use of space science and astronomy data;
- [iii] content and relevance of the abstract submitted as part of the application; and
- [iv] educational background.

8. Deadline for Submission of Applications

Completed applications including the signature page with signatures and seals must be received by the United Nations Office for Outer Space Affairs no later than **31 July 2017**.

International participants are kindly requested to submit their application online at:

<https://register.unoosa.org/civCRM/event/register?id=71&reset=1>

Compliance with the instructions issued in the application form is mandatory.

We recommend checking regularly the Workshop website, where updates and further information will be provided:

http://www.unoosa.org/oosa/en/ourwork/psa/schedule/2017/workshop_italy_openuniverse.html

9. Financial support

Within the limited financial resources available, a small number of selected participants from developing and emerging countries will be offered financial support to attend the workshop. This may include the provision of a round-trip air ticket between the applicant's nearest international airport of departure and Vienna, and/or 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 borne by the participants.

Participants will be selected on a competitive basis. Successful applicants requesting funding will be notified of the outcome within two weeks after the deadline. Due to the very limited availability of funding, applicants and their nominating organizations are strongly encouraged to find additional sources of sponsorship to allow them to attend the workshop.

Sponsorship of the workshop is still open to other interested entities.

10. Life and Health Insurance

Life/major health insurance for each of the selected participants is necessary and is the responsibility of the candidate or his/her institution or government. The co-sponsors will not assume any responsibility for life and major health insurance, nor for expenses related to medical treatment or accidental events.

11. Logistics

Venue:

**United Nations Office at Vienna
Vienna International Centre,
Wagramerstrasse 5,
A-1220 Vienna
AUSTRIA**

12. Contact Information

For information regarding the programme of the Workshop, as well as regarding the application process, please contact:

UNOOSA

Mr. Daniel García Yárnoz
Space Applications Section (SAS)
Contact form:

<http://www.unoosa.org/oosa/en/contact-us/index.html>

Italian Space Agency

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Workshop Website:

http://www.unoosa.org/oosa/en/ourwork/psa/schedule/2017/workshop_italy_openuniverse.html