



The Registration Project

Final Report

Background

The Registration Project was launched in 2021 as a joint venture between the Moon Village Association and the Global Space Law Center at Cleveland State University with the purpose of providing a neutral international platform for (1) assessing the existing mechanisms for sharing information regarding space activity and (2) making recommendations for a harmonized method of sharing information about lunar activities. This Final Report contains the final recommendations of the Project.

The membership of the Registration Project was comprised of a diverse international group of twenty-seven experts drawn from business, engineering, law and policy.¹ The members met for the first time on February 19, 2021 and again on March 26, 2021. A public workshop² was held on June 24, 2021 in order to provide all stakeholders an opportunity to share their thoughts. Nine additional space law experts participated in the Public Workshop as special guests.³ A third closed meeting took place on September 6, 2021 to receive the latest inputs and comments from the members.

The Legal and Policy Implications of Sharing Information

The obligations to share information regarding space activities and to register space objects on a public registry are central pillars of space law. Article XI of the Outer Space Treaty contains the core of the obligation to share information about state activities:

States Parties . . . agree to inform the Secretary-General of the United Nations as

¹ The members of The Registration Project are: Mark J. Sundahl (co-chair), Antonino Salmeri (co-chair), Fabio Tronchetti, V. Gopalakrishnan, Olavo Bittencourt, Virgiliu Pop, Elina Morozova, Olga Stelmakh, Michael Chatzipanagiotis, Michelle Hanlon, Jessie Kate Schingler, Chris Johnson, Guoyu Wang, Justine Kasznica, Scott Parry, Joyeeta Chatterjee, Zac Trolley, Derek Webber, Dennis O'Brien, Giuliana Rotola, Suyan Cristina Malhadas, Aimee Fanter, Hailey Hillsman, Hailee Kepchar, Jeffrey Murphy, Kristina Schiavone, Christophe Bosquillon and Anthony Ghazoul.

² The public workshop was hosted by the conveners of the *Moon Dialogs*.

³ The following experts were invited to join the Public Workshop: Setsuko Aoki, A.C. Charania, Frans von der Dunk, Mike Gold, Christopher Hearsey, Tanja Masson-Zwaan, Idris Motiwala, Michael Newman, and Gabriel Swiney.

well as the public and the international scientific community, to the greatest extent feasible and practicable, of the nature, conduct, locations and results of such activities.

States make submissions by diplomatic note, which are compiled in the *Index of Submissions by States under Article XI of the Outer Space Treaty* maintained by the UN Office for Outer Space Affairs.⁴ States are also required to share information regarding any objects “launched into Earth orbit or beyond” under either Resolution 1721 B (XVI)⁵ or the Registration Convention.⁶

The obligation to register space objects and share information about space activities has three far-reaching implications in space law and policy:

- Transparency: Sharing information is critical for achieving transparency among states regarding their space activities and their compliance with international law.
- Jurisdiction, Control, and Liability: A state that registers a space object pursuant to the Registration Convention has “jurisdiction and control” of space objects under Article VIII of the OST. As a state of registry, a state also admits that it is a “launching state” under the Liability Convention since only a launching state is capable of registering a space object.⁷ This designation brings potential liability since a launching state is liable for damage caused by its space objects.⁸
- Protection of Lunar Operations and the Preservation of Peace: Sharing information regarding lunar activities helps to protect lunar operations because all operators are required under Article IX of the OST to (1) act with “due regard” and (2) avoid potential harmful interference (or else undertake consultations prior to undertaking the activity). This will in turn help to avoid potential conflicts between private operators or between states.

⁴ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, entered into force Oct. 10, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 (hereinafter: OST).

⁵ International Cooperation in the Peaceful Use of Outer Space, UNGA Res. 1721 B (XVI), 20 Dec. 1961, available [online](#).

⁶ Convention on Registration of Objects Launched into Outer Space, entered into force Sep. 15, 1976, 28 U.S.T. 695, 1023 U.N.T.S. The implementation of the Registration Convention was further addressed in UNGA Resolution 59/115 of 10 December 2004 and UNGA Resolution 62/101 of 17 December 2007 which encouraged enhanced registration practices in order to increase the amount of information shared. Both [Res 59/115](#) and [Res 62/101](#) are available online.

⁷ Only launching states can register under Article II of the Registration Convention.

⁸ Under Articles II and III of the Liability Convention, a launching state is strictly liable for all damage caused on earth or in the air, but is only liable for damage caused in space if the state is shown to be “at fault” for the accident.

These legal and policy implications were critical in the assessment of existing law and practice and, eventually, the drafting of the recommendations of the Registration Project.

Shortcomings of Existing Practice

In advance of forming its recommendations, the Project Members developed a list of shortcomings of existing law and practice of sharing information. The list is divided into two tiers in order to prioritize the most critical issues for the success of impending lunar missions. The first tier includes those critical shortcomings that, if not addressed, pose a serious risk of interference, and potentially conflict, among lunar operators. The second tier includes additional issues that, in time, should be addressed to further promote the peaceful use of the moon.

Tier 1: Critical Shortcomings

1. Existing mechanisms provide for the registration of space objects, not space activities.
2. Existing mechanisms are intended primarily for the registration of objects in Earth orbit and not for missions on celestial bodies.
3. Current registrations provide insufficient information to enable operators to avoid interference and to operate safely with due regard to the corresponding interests of others.
4. Existing mechanisms do not encourage updates regarding changes in the location or function of an object/activity (with the exception of updates regarding deorbiting).
5. Existing mechanisms do not provide for sharing information regarding “safety zones”.
6. Registration can be significantly delayed under the Registration Convention due to the requirement to furnish information only “as soon as practicable” coupled with the use of diplomatic notes to furnish the information.
7. States are deterred from undertaking registration due to the correlation with liability.

Tier 2: Additional Shortcomings

1. Existing mechanisms do not provide for the verification of furnished information.
2. Existing mechanisms do not provide for prospective registration for the purpose of providing protection of the planned activity from harmful interference.
3. Existing mechanisms do not foresee the protection of significant cultural/scientific sites.

Recommendations

After reflecting on the critical shortcomings listed in Tier 1 of the previous section, we realized that most of them could be addressed by enhancing existing practices for the notification of lunar activities and the registration of related objects. Throughout the meetings of the Registration Project, Articles IX and XI OST emerged as the most critical provisions in the effort to address

these shortcomings. We believe the operationalization of these provisions in the context of lunar activities could be sufficient to ensure the peaceful, safe and sustainable uses of the moon during this early stage of lunar development. To this end, we make the following recommendations to decision-makers and operators:

1. That all States involved in the exploration and use of the Moon – either as responsible States, launching States or States of Registry – notify the UNSG, preferably prior to the commencement of activity, of the nature, conduct, and location of lunar activities, including their envisaged duration and subsequent results, in accordance with the procedure set forth in Article XI OST.
2. That as part of this notification States also include designated point of contacts and dedicated procedures for any consultation that may be necessary under Article IX OST, as well as a safety impact assessment accounting for both the envisaged harmful consequences and vulnerabilities of the activity, including proposed mitigation measures, together with essential operational information on the communication components and power aspects of the activity.
3. That all States involved in the exploration and use of the Moon undertake appropriate steps to harmonize their practices for the notification of lunar activities and the registration of related space objects.
4. That all States qualifying as launching States for a space object involved in the exploration and use of the Moon promptly register said object in accordance with either Resolution 1721 (XVI) B or the Registration Convention, as applicable to their case, and that they complement said registration by submitting the notification to the Article XI Index as suggested above.
5. That UNOOSA, in compliance with its obligation to disseminate the information received under Article XI OST “immediately and effectively”, reorganizes the existing “Index of Submissions by States under Article XI of the Outer Space Treaty” in order to (i) allow for the fully digital transmission of information by means of an internet-based interface and (ii) directly display on the webpage the operator(s), nature, location(s), duration and concerned States (responsible States, launching States, and State of registry) for every notified lunar activity.
6. That a proactive institution within the global space community develops an international database to supplement Article XI OST’s Index, in order to include additional information provided by third parties or private entities.
7. That UNCOPUOS Member States begin taking steps to establish a process for identifying and protecting sites of significant cultural and scientific interest on the Moon.
8. That ITU Member States urgently undertake appropriate actions for the establishment of a new radio regulatory region for lunar activity to enable the application of ITU instruments and mechanisms for the allocation of frequencies and the prevention of harmful interference.

A Last Word on Adaptive Governance

The astonishing acceleration in the planning and execution of lunar activities calls for the development of legal and policy solutions ensuring the peaceful, safe, and sustainable use of the moon. The theory of adaptive governance calls for the development of governing rules and institutions in step with the development of technology and activity. The Registration Project delivers the recommendations above as its contribution to the framework of international space law and to the greater effort of promoting the peaceful use of outer space. Eventually, the time will come for revisiting the treaties and producing new binding rules of international space law. When this moment arrives, we recommend to either revisit some provisions related to the notification of lunar activities and the registration of related space objects, or to develop a new regime of *lex specialis* that addresses the issues raised herein.