

Aerospace and Defense Industries

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This article provides a short review of recent developments related to commercial (non-governmental entity) ownership rights of space resources.

I. Space Resource Utilization

Commercial companies (non-governmental entities) from around the world aim to mine asteroids and celestial bodies within our solar system. Their goal is to produce water, propellant, and building materials to extend humankind's reach for future space exploration missions. Perhaps these space resource utilization missions will also find scientifically or economically significant new materials that will yield new ways of travelling or working on other worlds. While space operations were the exclusive domain of Nation States when the five Space Treaties were formulated in the 1960s and 1970s, a myriad of space applications essential to supporting our modern-day lifestyles are now operated by a variety of commercial non-governmental entities.¹ Until 2015, national legislation specifically related to Space Resource Utilization did not exist. The status quo changed when the United States passed *H.R.2262*, the U.S. Commercial Space Launch Competitiveness Act, granting citizens ownership rights over asteroid or space resources obtained and thereby officially opening the door for other nations to follow.² Since then, the international community has debated the legality of Space Resource ownership and appropriation legislation, and whether this type of space activity benefits all countries.

In July of this year, Luxembourg became the first European country to enact national legislation that entitles citizens to ownership of space resources.³ The conversation regarding what is or should be legal that has

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1. See generally Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, *opened for signature* Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 (entered into force Oct. 10, 1967) [hereinafter Outer Space Treaty]; Convention on International Liability for Damage Caused by Space Objects, *opened for signature* Mar. 29, 1972, 24 U.S.T. 2389, 961 U.N.T.S. 187 (entered into force Sept. 1, 1972).

2. 51 U.S.C. § 51303 (2015).

3. See Loi du 20 juillet 2017 sur l'exploration et l'utilisation des ressources de l'espace [Law of 20 July 2017 on the Exploration and Use of Space Resources], No. 674, JOURNAL OFFICIEL

sparked on an international level is valuable to the future of space resource utilization activities. The discussion instructs that all entities, whether they are public or private, engage in space activities in a way that protects the space environment, ensures future sustainability of space activities, and establishes a system for equitable access.

II. Appropriation of Space Resources

The 1967 Outer Space Treaty establishes the right of all Nation States to explore and use outer space as long as that use does not contravene the principles that activities are “carried on for the benefit of all peoples” and “for peaceful purposes.”⁴ The Outer Space Treaty does not mention space resource utilization (or appropriation of space resources) specifically, but a general prohibition against appropriation in space currently exists as outlined in Article II, the text of which reads as follows:

“Outer Space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.”⁵

Because appropriation of celestial bodies and the moon is not permitted, this raises the question of the legal status of extracted resources. Can the legal status of the extracted resources be regarded as the same as the legal status of the celestial body that the resources originated from? This question of whether a private entity has violated the Outer Space Treaty by claiming ownership or appropriating resources from a celestial body is currently being examined internationally by a variety of non-governmental entities and Nation States.

Below is an outline of the important conversations that have occurred during 2017 and a brief outline of the major issues which are being debated.

III. COPUOS, Legal Subcommittee Fifty-Sixth Session, Held In Vienna from 27 March to 7 April 2017 – Potential Legal Models for Activities in Exploration, Exploitation, and Utilization of Space Resources

Representatives from sixty-five Nation States⁶ attended the session to address a number of issues, including item number fourteen on the Agenda: a “[g]eneral exchange of views on potential legal models for activities in

DU GRAND-DUCHÉ DE LUXEMBOURG, art. 1, July 28, 2017 (Fr.), *translated in Draft law on the exploration and use of space resources*, SPACE RESOURCES (July 13, 2017), <http://www.spaceresources.public.lu/content/dam/spaceresources/news/Translation%20Of%20The%20Draft%20Law.pdf>.

4. See Outer Space Treaty, *supra* note 1, at 2.

5. *Id.* art. II.

6. See *generally* Committee on the Peaceful Uses of Outer Space, List of Participants, U.N. Doc. A/AC.105/C.2/2017/INF/49 (Apr. 7, 2017).

exploration, exploitation and utilization of space resources.”⁷ The exchange of views during the session included the general consensus that increasing private sector participation in space activities necessitates the development of a framework within a multilateral forum to guide and define commercial activities in space, in addition to providing legal security.⁸ Many of the views expressed agreed on the principle that a multilateral, coordinated approach is required to address issues related to ensuring that states adhere to principles of equity of access, sustainability, and current established international legal frameworks and relevant principles governing space activities.⁹

During the UNCOPUOS session the IISL and European Centre for Space Law (ECSL) held a symposium titled, “Legal models for exploration, exploitation and utilization of space resources 50 years after the adoption of the Outer Space Treaty.”¹⁰ Co-chaired by Kai-Uwe Schrogl of IISL and Sergio Marchisio of ECSL, the symposium allowed for the presentation of various stakeholder views regarding whether space resource utilization was consistent with current international legal models.

Consideration of potential legal models to regulate space resource utilization was tabled on the agenda for the fifty-seventh session of the COPUOS Legal Subcommittee meeting for April 2018.¹¹ It was noted that any legal models considered in relation with this agenda item must consider the following points:

- “that all States be able to benefit from the exploitation of space resources and that exploitation should not be reserved for a monopoly;”
- “that the exploitation of resources must be rational and sustainable;”
- “and that private and public investors should be protected by guarantees of legal certainty.”¹²

IV. The Hague Space Resources Governance Working Group

The Hague Space Resources Governance Working Group, which is comprised of members and observers, is “hosted by a consortium of organizations representing all continents.”¹³ Membership consists of space

7. Committee on the Peaceful Uses of Outer Space, Report of the Legal Subcommittee on its fifty-sixth session, U.N. Doc. A/AC.105/1122, ¶ 3 (2017).

8. *Id.* ¶ 228.

9. *See id.* at 30–33.

10. IISL/ECSL Symposium on “Legal Models for Exploration, Exploitation and Utilization of Space Resources 50 Years After the Adoption of the Outer Space Treaty”, UNITED NATIONS OFFICE FOR OUTER SPACE AFFAIRS, <http://www.unoosa.org/oosa/en/ourwork/copuos/lsc/2017/symposium.html> (last visited Feb. 2, 2018).

11. Report of the Legal Subcommittee on its fifty-sixth session, *supra* note 7, ¶ 271.

12. *Id.* ¶ 272.

13. *Press Release of the Hague Space Resources Governance Working Group*, UNIVERSITEIT LEIDEN (Nov. 22, 2017), <https://www.universiteitleiden.nl/en/news/2017/11/press-release-of-the-hague-space-resources-governance-working-group>.

resource utilization stakeholders from industry, academia, Nation States, and NGO's.¹⁴ The group is working to assess the need for a regulatory framework for space resource activities and “ha[s] identified 18 ‘building blocks’, which . . . a regulatory framework could include.”¹⁵ On September 13, 2017, the working group agreed to circulate the “building blocks” document as part of a strategy to “promote international cooperation and multi-stakeholder dialogue.”¹⁶ One of the primary objectives of this consultation is to identify and define the relationship between space resources and the current international legal framework for space activities. This will create a way forward toward designing an international regime that considers the needs of all Nation States using principles that promote equitable use and access, prevent disputes, and ensure peace and security in space. Comments are invited from stakeholders by July 2018 to inform further consideration of the “building blocks” to explore the form or need for future mechanisms for the governance of space resources.¹⁷

V. The Future of Space Resource Utilization Governance

Continuing to develop governance systems for Space exploration and exploitation is essential to humankind to establish an orderly, equitable, and safe way for future economic and social development. As space industry economic models develop with the majority consisting of private and public partnerships, private organizations, and cross-border multinational organizations, addressing how to balance public risk for private activities versus benefit within the context of space resource utilization is seemingly absent from the conversation. Consideration of this issue is essential because the authorization and supervision provisions of the Outer Space Treaty allocate public financial responsibility for all space activities.¹⁸

National space legislation related to space resource utilization can be drafted with enough flexibility to create responsiveness to changes in technology and address international legal obligations.¹⁹ The current space resource utilization conversation for developing future governance frameworks is an excellent opportunity to build capacity amongst nations; to incorporate the principles of freedom of exploration, equity of access, and

14. See generally *WG Members*, UNIVERSITEIT LEIDEN, <http://media.leidenuniv.nl/legacy/wg-members.pdf> (last visited Feb. 2, 2018).

15. Report of the Legal Subcommittee on its fifty-sixth session, *supra* note 7, ¶ 224.

16. The Hague Space Resources Governance Working Group, *Draft Building Blocks for the Development of an International Framework on Space Resource Activities*, at 1 (Sept. 13, 2017), <http://media.leidenuniv.nl/legacy/draft-building-blocks.pdf>.

17. *The Hague International Space Resources Governance Working Group*, UNIVERSITEIT LEIDEN, <https://www.universiteitleiden.nl/en/law/institute-of-public-law/institute-for-air-space-law/the-hague-space-resources-governance-working-group> (last visited April 7, 2018).

18. Outer Space Treaty, *supra* note 1, art. VI.

19. Kim G. Ellis, *Private Activity/Public Responsibility: Liability for Private Space Activity in the context of National Authorisation*, at 3 (2017), <https://iafastro.directory/iac/paper/id/40778/>.

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peaceful uses of outer space; and to potentially forge a new, more enlightened path for humankind to the stars.

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