

Canada's Submission to the Working Group on Legal Aspects of Space Resources Activities of the Legal Subcommittee of UN COPUOS

Following the establishment of a Working Group on Legal Aspects of Space Resource Activities, at its 60th Session of the Legal Subcommittee (LSC) of the UN Committee on the Peaceful Uses of Outer Space (COPUOS), Member States developed a detailed 5-year workplan and methods of work to meet the mandate of the Working Group at the 61st Session of the LSC in 2022¹. This workplan called for an initial administrative, information-collection and stocktaking submission by Member States of the Committee with regard to the mandate and purpose of the Working Group. The following is Canada's submission to meet that initial call for inputs.

Type of space resources that fall within the mandate and scope of the Working Group

As countries look to expand their space exploration ambitions to the lunar surface and beyond, the costs, complexities and risks of supplying resources from Earth are increasingly becoming a limiting factor. In-Situ Resource Utilization (ISRU) offers a potential solution for living and working in space. Key products for space exploration missions include water, oxygen, propellant, and materials for life support in-situ manufacturing, and construction of habitats and surface infrastructure. Propellants can be manufactured from locally sourced water; hydrogen and oxygen from water ice and lunar regolith; and building materials from rocks, soil and dust from planetary surfaces. As a result, the Working Group should consider all abiotic physical substances that can be extracted, recovered or captured from the surface or subsurface of a celestial body, including fugacious substances, in its work.

Type of activities that fall within the mandate and scope of the Working Group

Canada's perspective is that it is important that the Working Group consider all activities to be conducted on the Moon and further into deep space, not just those directly tied to space resource utilization (SRU). One must be mindful that any rules imposed on activities around SRU may have unintended consequences on other exploration activities. For example, one must consider if the framework governing SRU activities would be or should be applicable to permanent structures or mobile equipment on the lunar surface or vicinity. The need to meet the Outer Space Treaty obligations, such as the avoidance of harmful contamination or interference (Article IX), affects all space activities. By establishing a framework addressing harmful interference in the SRU context, the Working Group should consider how it might affect other activities. Therefore, when developing a set of principles for SRU activities, it is critical that the entire spectrum of planned and future activities be considered. This consideration would encompass the activities of national space agencies and those of private entities, whether commercial or non-commercial in nature, and include short-term as well as long-term missions.

¹ A.AC.105/1260 Report of the Legal Subcommittee on its sixty-first session, held in Vienna from 28 March to 8 April 2022 ([V2202249.pdf \(un.org\)](#)), Annex II, Report of the Chair and Vice-Chair of the Working Group on Legal Aspects of Space Resource Activities.

In a similar vein, it is equally important not to establish rules now for ISRU activities without taking into account potential future missions that may extract resources for use back on Earth. Though such activities are not currently feasible, one cannot discount the potential for such activities in the future. At this time, we don't know enough to adequately predict the future of deep space SRU activities but we should ensure that any rules we do put in place address such future activities.

Canada's Activities relevant to exploration, exploitation and utilization of space resources

In the context of lunar exploration, the Canadian Space Agency's Lunar Surface Exploration Initiative is currently in the Planning and Option Analysis Phase, aiming to enable Canada and its space sector to grow the economy, create inspiring careers of the future and pave the way for the first visit by Canadian astronauts to our nearest celestial neighbour by developing, delivering, commissioning and operating multiple Canadian infrastructure contributions on the lunar surface. This investment will enable scientific opportunities and global partnerships, increase Canadian commercial participation, create high-quality jobs and leverage Canada's Gateway and Lunar Exploration Accelerator Program (LEAP) investments.

Views of States members regarding the existing legal framework for space resource activities

Canada is a State Party to the four (4) core United Nations treaties on outer space: the Outer Space Treaty, the Rescue and Return Agreement, the Liability Convention, and the Registration Convention. These treaties do not specifically address SRU activities but do establish the basic legal rights and obligations applicable to all space activities. The right to freely explore and use outer space (Article I of the Outer Space Treaty) is a broad right subject only to certain limitations. Those limitations include the non-appropriation of outer space and celestial bodies (Article II of the Outer Space Treaty) and the duty of due regard, as well as the associated obligation to consult to address potentially harmful interference with the peaceful activities of other States Parties (Article IX of the Outer Space Treaty). It is also important to recognize that international law, including the Charter of the United Nations, applies to all outer space activities. Therefore, a substantial body of law exists to regulate the conduct of SRU activities, even in the absence of provisions specific to SRU.

Canada does not currently have legislation specifically addressing SRU activities but does have plans for activities on the Moon and in deep space that would necessitate the use of space resources. Canada strives to conduct all space activities safely, sustainably and consistent with our international treaty obligations. With this in mind, Canada became a signatory to the Artemis Accords in October 2020². With 23 signatories and others showing interest in signing, the Artemis Accords are designed to operationalize the existing treaties, in particular the Outer Space Treaty, through a set of practical principles. These principles are designed to be detailed into the specific mission arrangements for the Artemis program and can serve to guide the development of national legislation for a number of principles surrounding deep-space exploration, including for SRU activities. Some of these key principles

² Artemis Accords, [Artemis-Accords-signed-13Oct2020.pdf \(nasa.gov\)](https://www.nasa.gov/press/20201013/artermis-accords-signed-13oct2020.pdf)

would include aspects linked to safety, interoperability, sustainability and deconfliction of space activities.

Type of information to be collected by the Working Group in accordance with its mandate.

Canada asserts that the work of the International Space Exploration Coordination Group (ISECG) could provide a solid peer-reviewed foundation for understanding the technical requirements of future space activities and would serve to help define the scope of the Working Group's mandate. Most recently, the October 2022 Supplement to the Global Exploration Roadmap³ (GER) highlighted the drive for extended lunar stays, the need for initial In-Situ Resource Utilization (ISRU) pilot plants, leading to eventual long-term ISRU requirements. In order to ensure that the Working Group is fully aware of the latest lunar exploration scenario and GER updates, Canada recommends requesting the ISECG Chair or representative brief the Working Group, on an on-going basis, of known current and future space exploration plans as well as inviting technical presentations from COPUOS Member States who have planned space exploration or SRU missions. This type of information will be invaluable to the Working Group in its consideration of legal principles relevant to SRU activities.

The Working Group would also benefit from an examination of other initiatives that have considered some aspects of SRU activities. The Building Blocks for the Development of an International Framework on Space Resource Activities developed by the Hague International Space Resources Governance Working Group⁴ are a good source of information on considerations for principles relevant to SRU activities. In a similar category, the Artemis Accords represent the views of a growing number of States on the principles relevant to deep space exploration. Some of those principles are relevant to SRU activities and thus, should be considered by the Working Group. The Artemis Accords had the benefit of drawing upon the work that went into the Hague Building Blocks, which influenced some of the principles in the Accords. Building upon previous work to elaborate legal principles is a hallmark of the development of space law and one of the keys to its success. The Working Group could employ a similar path towards a successful outcome.

Current practices and challenges to implementation of existing legal frameworks for such activities

Internationally, there are several missions planned to the Moon over the next few years with most planned for the South Pole region – a region where the necessary resources for a sustained lunar presence are expected to be found. Within the context of this growing interest in lunar activities, there is a lack of consensus on how these missions will be regulated. In fact, despite the large and growing number of planned activities, only a few States have instituted a regulatory framework to ensure authorization and supervision to meet the obligations outlined in the Outer Space Treaty. This is in part due to a lack of certainty regarding the interpretation and implementation of the existing legal rights and obligations to SRU activities. The Artemis Accords are designed to bring some certainty to these

³ ISECG Global Exploration Roadmap Supplement August 2020, Lunar Surface Exploration Scenario Update [GER_2020_supplement.pdf \(globalspaceexploration.org\)](#)

⁴ The Hague International Space Resources Governance Working Group: Building Blocks for the Development of an International Framework on Space Resources Activities, [bb-thissrwg--cover.pdf \(universiteitleiden.nl\)](#)

issues in relation to deep space exploration amongst the signatories. However, there is more work to be done to arrive at a consensus on the legal aspects of SRU activities without losing sight of the larger context in which those activities might take place – deep space exploration and use for the benefit and in the interest of all humanity.

Benefits and challenges to the development of a framework for such activities

Canada recognises the importance and benefit of building an international consensus with regards to SRU activities as a way to preserve and promote the safe, sustainable, and peaceful exploration and use of outer space for all humanity. Developing principles of general application is a proven approach to progressing the development of a sound legal framework in outer space.

One of the key challenges to the development of a framework for SRU activities is obtaining the relevant information needed to understand the activities in the larger context within which they occur (i.e. deep space exploration). Without understanding the types of missions being proposed by states and non-state actors, it will be a challenge to move forward, share views, and reach consensus on how the framework should apply to such activities in manner that promotes the development of these activities in a safe, sustainable and peaceful way.

Relevant factors for the development of a set of initial recommended principles for such activities

Canada has long asserted that the legal framework should not get ahead of technical progress. It is imperative that some flexibility remains to ensure we do not stifle innovation and discovery whilst providing a sufficient framework to ensure safety, sustainability and adherence to the existing global space governance frameworks and in particular, the Outer Space Treaty. It is for these reasons that Canada will continue to use the Artemis Accords and the core space treaties to which Canada is a State Party, as the foundation for all of its planned activities. In order to meet the requirement for technological progress and the legal framework to develop together, any principles developed by the Working Group must allow sufficient flexibility to account for the evolution of human activities in outer space.

Format, agenda, topics and other details of the dedicated conference (currently) scheduled for 2024

The workplan outlines the need for an international conference, subject to the availability of extra-budgetary resources. Although the workplan uses the term “conference”, perhaps a workshop would be a better representation of the proposed effort. Such a workshop should solicit input from industry, academia and Non-Governmental Organizations (NGOs). It is important that those developing the principles on SRU activities have an understanding of the plans of the Member States and international community regarding deep-space activities. Therefore, Canada recommends inviting the ISECG to present at the workshop to establish an understanding of what activities are planned or envisioned for the coming years and decades. Input from industry and NGOs may also contribute to a greater understanding of what is feasible and may highlight potential roadblocks to a successful framework. It is also important that all voices are heard and that this workshop provides an opportunity for the maximum participation possible.

Any other background or information paper, or any other views, that States members may wish to share

Conclusion

Canada is committed to working within the LSC of UN COPUOS to establish principles for space resources activities that are practical and flexible and that ensure the safety and sustainability of outer space activities for the benefit of all.