

The Hague International Space Resources Governance Working Group: Third Progress Report

*Tanja Masson-Zwaan, René Lefeber, Giuseppe Reibaldi, Dimitra Stefoudi**

Abstract

As in previous years, this third Progress Report provides an update on the developments of The Hague International Space Resources Governance Working Group. It focuses on the results of the last meeting of its first phase, which ended in December 2017 and provides an overview of the expected activities in its second phase from 2018-2019.

Following a very brief recap of the purpose and functioning of the Working Group, the paper will focus on the major milestone achieved at the end of the first phase, namely the “Draft Building Blocks for the Development of an International Framework on Space Resource Activities”. The Building Blocks were formulated as a basis for negotiations on a future governance system for the use of space resources and were widely made available in order to gather feedback from the international community at large, the results of which will be presented.

The paper will also report on other progress made during the second phase of the Working Group, such as the establishment of a technical panel and a socio-economic panel and the results of the fifth face-to-face meeting.

Lastly, the paper provides insight into the prospects for a successful conclusion of the activities of the Working Group and the way forward toward an international framework for the governance of space resources.

All authors are closely involved with the creation and activities of the Working Group.

* Tanja Masson-Zwaan, International Institute of Air & Space Law, Leiden University, the Netherlands, t.l.masson@law.leidenuniv.nl (corresponding author). René Lefeber, Netherlands Ministry of Foreign Affairs, the Netherlands, rene.lefeber@minbuza.nl. Giuseppe Reibaldi, The Hague International Space Resources Governance Working Group, the Netherlands, giuseppe.reibaldi@gmail.com. Dimitra Stefoudi, International Institute of Air & Space Law, Leiden University, the Netherlands, d.stefoudi@law.leidenuniv.nl.

1. Introduction

1.1. Origin of the Working Group

The Working Group was the outcome of a Roundtable on the Governance of Space Resources, convened by The Hague Institute for Global Justice on 1 December 2014. The Roundtable was attended by industry leaders, scientists, diplomats, as well as political and legal experts from across the globe and it served as a forum to discuss and propose solutions for the current lack of a framework for the use of space resources found on asteroids and other celestial bodies. The Hague International Space Resources Governance Working Group was established to support this process and promote its advancement, within a reasonable timeframe and in accordance with international law. The Working Group operates in a transparent and open manner and important information is posted on its website and communicated through twitter and facebook.¹

The Working Group was initially established for a two-year period covering 2016 and 2017, during which it held four face-to-face meetings and agreed on the “Draft Building Blocks for the Development of an International Framework on Space Resource Activities”. During the last meeting of the first phase, in September 2017, the Working Group decided to extend its duration into the period 2018-2019, in order to continue the discussion on a potential framework on space resources, aiming also to increase the number of stakeholders involved in the further development of the Draft Building Blocks.

1.2. Objectives of the Working Group

The purpose of the Working Group is to assess, on a global scale, the need for a framework for space resource activities and to prepare the basis for such framework to be discussed and established. In this context, the discussion of the first phase concerning the benefits of a governance framework continued into the second phase, extending it to appropriate mechanisms for States and the international community to engage in relevant negotiations. Furthermore, the initial aim of laying the groundwork for a potential future framework was achieved with the introduction of the Draft Building Blocks, which will be further developed during the second phase. Additionally, the Working Group also aims to increase its outreach and raise awareness on issues related to space resources by organizing activities and by involving local and regional actors. Finally, the Working Group aspires to act as a platform to exchange information among stakeholders on progress and issues related to the use of space resources.

1 Website: <https://www.universiteitleidennl/en/law/institute-of-public-law/institute-for-air-space-law/the-hague-space-resources-governance-working-group>; Facebook: @TheHagueSpaceResourcesGovernanceWG; Twitter: @SpaceResourceWG.

2. Structure of the Working Group

2.1. The Consortium

The Consortium underwent minor changes during the second phase. Three new Consortium partners joined, while one of the previous partners was unable to continue. The founding Consortium partner is the International Institute of Air and Space Law (IIASL), Leiden Law School, Leiden University (The Netherlands). The Secretariat of the Working Group is hosted here. The other Consortium partners are the Catholic University of Santos (UNISANTOS) (Brazil), The Indonesian Centre for Air and Space Law (CASL), Padjajaran University (Indonesia), The Secure World Foundation (SWF) (USA), and The University of Cape Town (UCT) (South Africa). During the second phase, the Consortium was joined by three additional partners, the University of Luxembourg (Luxembourg), the Nishimura Institute of Advanced Legal Studies (NIALS, Japan), and the Ten to the Ninth Plus Foundation (USA). The Consortium Partners convene on a regular basis to evaluate the Memorandum of Understanding that was signed among them and established the Working Group, as well as to set strategies and priorities for the future.

2.2. Members

Members are major stakeholders from government, industry, universities and research centres. A list of the current members of the Working Group can be found on the website. Members are responsible for making the decisions and are invited to attend all teleconferences and meetings of the Working Group. The number of members during the first phase was limited to twenty-five, and was extended to thirty-five during the second phase. There are currently twenty-six members, selected following an open call in January 2018. Members are consulted before and after every meeting, in order to provide their input on the discussions of the Group. They are also the primary participants of the face-to-face meetings.

2.3. Observers

Observers are professionals directly involved in space resources issues and are invited to attend face-to-face meetings, but do not participate in teleconferences. They may not actively participate in the meetings, but may express their views on invitation of the Chair, after the members have presented their opinions. There is no restriction on the overall number of observers to the Working Group, however the number of observers per organisation is limited to two. The number of observers in the second phase has grown to over fifty, while the interest of stakeholders to participate as observers is increasing consistently. Since the past progress report, the circle of observers has been extended to include representatives of international

organisations, space agencies and start-up companies. A formal application to the Secretariat is required in order to become an observer.

2.4. Secretariat

The Secretariat is entrusted with overseeing the activities of the Working Group and is in charge of its administrative functions. It comprises of the Chair of the Working Group, Dr. René Lefeber, the Vice-Chairs, Dr. Michael Simpson and Prof. Olavo Bittencourt Neto, and the Executive Secretary, Dr. Giuseppe Reibaldi. The Secretariat holds regular teleconferences to coordinate the activities of the Working Group and evaluate its progress, as well as to determine its future actions.

2.5. The Technical and Socio-economic Panels

During its second phase, the Working Group established two specialised panels, the Technical and the Socio-Economic panel, in order to foster the dialogue around the different topics related to space resource activities. In particular, the objectives of the panels are to assess the feasibility of the Draft Building Blocks, from a technical and socio-economic perspective respectively, as well as to provide further suggestions regarding their content. The panels provide input to the Working Group and contribute to the further elaboration of the Draft Building Blocks. They consist of participants from different backgrounds, representing industry, universities, as well as scientific and international organisations. Their Chairs coordinate the activities and input of the panels and report to the Working Group during its meetings. Both panels have identified areas of interests in specific provisions of the Draft Building Blocks, as well as points to be improved and added.

The Technical Panel focuses on three main categories, namely:

- 1) safety zones on the Moon or asteroids;
- 2) coordination of radio frequency use and orbital allocations for deep space missions, and
- 3) general technical advice with regard to the Draft Building Blocks.

The Socio-Economic Panel at present addresses issues such as social operation licensing, cooperation models among countries, data-sharing and exchange of know-how, capacity building, and responsible investment.

The aforementioned topics might change and evolve as the discussions within the panels progress. The main findings will be included in forthcoming amendments to the building blocks.

3. Draft Building Blocks

3.1. Background information

The Draft Building Blocks of the project provide the basis for discussions on a possible international framework for the governance of space resources. The formulation and preliminary elaboration of the Draft Building Blocks was discussed in the previous progress reports.² The initial set was further developed through subsequent meetings of the Group, in November 2016, April 2017, and September 2017. During the latter, which was the last meeting of the first phase, the Working Group produced the “Draft Building Blocks for the Development of an International Framework on Space Resource Activities” and agreed to circulate them as the preliminary result of its work.

The Working Group has invited comments on the Draft Building Blocks, in order to inform its further considerations on their text. The deadline for any interested party to provide comments is 15 October 2018. In order to facilitate open consultation on the Draft Building Blocks, the Working Group has made them available online as well as in printed form, and distributed them through its Members and Observers at various events. It also published an online questionnaire,³ in order to encourage wider participation in providing feedback.

In their present draft form, following the latest meeting of September 2017, there are nineteen building blocks, which were developed and elaborated on the basis of the initial ones.

The building blocks address non-substantive matters, such as the objective of an international framework, the definition of key terms, and the scope and principles of an international framework, as well as substantive matters, such as the exercise of jurisdiction over space resource activities, access to and utilization of space resources, as well as the sharing of benefits arising out of the utilization of space resources, the exchange of information under the international framework, and liability, monitoring and compliance issues. Their text is republished *infra*, in section III.3 of this paper.

2 T. Masson-Zwaan, R. Lefeber, G. Reibaldi, M. Stewart, *The Hague Space Resources Governance Working Group: A Progress Report*, Proceedings of the International Institute of Space Law 2016 (P.J. Blount, T. Masson-Zwaan, R. Moro-Aguilar, K.U. Schrogl, eds., Eleven Publishing, 2017) 163; T. Masson-Zwaan, R. Lefeber, G. Reibaldi, D. Stefoudi, *The Hague Space Resources Governance Working Group: A Progress Report*, Proceedings of the International Institute of Space Law 2017 (P.J. Blount, T. Masson-Zwaan, R. Moro-Aguilar, K.U. Schrogl, eds., Eleven Publishing, forthcoming).

3 See https://docs.google.com/forms/d/1_T6-nLBvmygZQN1ZG9kEXuPbhAr00PRFGYKU2HmAnk/edit?usp=sharing.

3.2. Preliminary feedback on the Draft Building Blocks

The Draft Building Blocks were finalized in September 2017 and remain open to feedback from any interested party until 15 October 2018. So far, the Working Group has received several comments via email and the online questionnaire, as well as during activities of participants who presented the content of the Draft Building Blocks at various national and international events. This paragraph lists some of the remarks received, both from participants and third parties, so as to provide a preliminary outcome of this open consultation. The received feedback is distributed to the participants of the face-to-face meetings and is being discussed and considered for potential amendments of the Draft Building Blocks.

Some comments of a general nature highlighted the importance of sustainability in space resource activities and suggested the definition of the term and its inclusion into some of the provisions. It was also pointed out that the notion of utilisation should be further clarified and, if valid, distinguished from the stage of discovery and extraction of raw minerals. Moreover, it was suggested that the type and location of extracted resources are relevant for the establishment of a governance mechanism, as certain resources might differ from others in terms of value and utility.

Certain commentators proposed changes and clarifications to specific provisions of the Draft Building Blocks. A common point was the extension of the definition of space object (BB 2.4), to include not only objects launched from the Earth, but also objects launched from outer space. Given that the Draft Building Blocks aim at outlining general provisions, some terms had not been defined, such as harmful interference (BB 4.3c, BB 9) and technical standards (BB 10), for which some suggestions were made. Furthermore, analogies were proposed for the international registry envisioned in BB 6.2 and 17a. Others suggested to explain the difference between priority rights (BB 6.2) and exclusive rights, as well as to define whether all space treaties or only the ones with wide recognition are considered in the context of BB 1.2a.

As far as the purpose of the Working Group is concerned, there were recommendations regarding appropriate options for continuing the discussion on the establishment of an international space resource activities framework. Besides international organisations and intergovernmental bodies, it was suggested that initiatives should be undertaken by non-governmental organisations, with support of commercial entities or by individual governments. Finally, thanks to the diverse character of the Working Group participants and recipients of the Draft Building Blocks, the feedback included examples of the conduct and standards of international organisations, practical examples from current and planned missions, along with supporting scientific and technological facts.

3.3. Current Status of the Draft Building Blocks

The following section includes the exact content of the Draft Building Blocks, in their current version of September 2017.

1. Objective

- 1.1 The international framework should create an enabling environment for space resource activities that takes into account all interests and benefits all countries and humankind.
- 1.2 To achieve this objective, the international framework should:
 - a) Identify and define the relationship of space resource activities with existing international space law, including the provisions of the United Nations treaties on outer space;
 - b) Propose recommendations for the consideration of States for the application or development of domestic frameworks;
 - c) Propose recommendations for the consideration of intergovernmental organizations for the application or development of internal frameworks;
 - d) Promote the identification of best practices by States, intergovernmental organizations and non-governmental entities.

2. Definition of key terms

- 2.1 Space resource: an extractable abiotic resource *in situ* in outer space.⁴
- 2.2 Utilization of space resources: the recovery of space resources and the extraction of raw mineral or volatile materials therefrom.⁵
- 2.3 Space resource activity: an activity conducted in outer space for the purpose of searching for space resources, the recovery of those resources and the extraction of raw mineral or volatile materials therefrom, including the construction and operation of associated extraction, processing and transportation systems.
- 2.4 Space object: object launched into outer space from Earth, including component parts thereof as well as its launch vehicle and parts thereof.⁶

4 According to the understanding of the Working Group, this includes mineral and volatile materials, including water, but excludes (a) satellite orbits; (b) radio spectrum; and (c) energy from the sun.

5 According to the understanding of the Working Group, this excludes secondary utilization of space resources, i.e. (a) utilization of raw materials derived from space resources; and (b) marketing and distribution of space resources.

6 According to the understanding of the Working Group, this includes objects made wholly or partially from space resources.

- 2.5 Space product: product made in outer space wholly or partially from space resources.⁷
- 2.6 Operator: a governmental, intergovernmental or non-governmental entity conducting space resource activities.

3. Scope

- 3.1 The international framework should address States and intergovernmental organizations.
- 3.2 The international framework should address space resource activities within the solar system.

4. Principles

- 4.1 The international framework should be consistent with international law.
- 4.2 The international framework should be designed so as to:
 - a) Incrementally regulate space resource activities at the appropriate time (principle of adaptive governance);
 - b) Promote consistency and predictability among domestic frameworks of States and internal frameworks of intergovernmental organizations;
 - c) Contribute to sustainable development;
 - d) Prevent disputes arising out of space resource activities;
 - e) Promote and secure the orderly and safe utilization of space resources;
 - f) Promote the rational, efficient and economic use of space resources;
 - g) Promote the use of sustainable technology;
 - h) Provide legal certainty and predictability for operators;
 - i) Take into particular account the needs of developing countries;
 - j) Take into particular account the needs of science;
 - k) Take into particular account the contributions of pioneer operators.
- 4.3 The international framework should provide that:
 - a) Space resources shall be used exclusively for peaceful purposes;
 - b) Space resource activities shall be carried out for the benefit and in the interests of all countries and humankind irrespective of their degree of economic and scientific development;

⁷ According to the understanding of the Working Group, this excludes raw mineral and volatile materials, including water, irrespective of form.

- c) Space resource activities shall not harmfully interfere with other on-going space activities, including other space resource activities;
 - d) International cooperation in space resource activities shall be conducted in accordance with international law.
5. International responsibility for space resource activities and jurisdiction over space products
- 5.1 The international framework should provide that States and intergovernmental organizations shall be responsible for space resource activities authorized by them in accordance with their international obligations.
 - 5.2 The international framework should provide that space resource activities require prior authorization and continuing supervision by the appropriate State or intergovernmental organization.
 - 5.3 The international framework should provide that States and intergovernmental organizations shall exercise jurisdiction and control over space products used in space resource activities authorized by them.
6. Access to space resources
- 6.1 The international framework should enable the unrestricted search for space resources.
 - 6.2 The international framework should enable the attribution of priority rights to an operator to search and/or recover space resources *in situ* for a maximum period of time and a maximum area upon registration in an international registry, and provide for the international recognition of such priority rights. The attribution, duration and the area of the priority right should be determined on the basis of the specific circumstances of a proposed space resource activity.
7. Utilization of space resources
- 7.1 The international framework should ensure that resource rights over raw mineral and volatile materials extracted from space resources, as well as products derived therefrom, can lawfully be acquired, and provide for the mutual recognition between States of such resource rights.
 - 7.2 The international framework should ensure that the utilization of space resources does not contravene the principle of non-appropriation under Article II OST.⁸

8 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

8. Due regard for interests of all countries and humankind

The international framework should provide that States and intergovernmental organizations authorizing space resource activities shall give due regard to the interests of all countries and humankind.

9. Avoidance of harmful impacts resulting from space resource activities

Taking into account the current state of technology, the international framework should provide that States and intergovernmental organizations authorizing space resource activities shall adopt a precautionary approach with the aim of avoiding harmful impacts, including:

- a) Risks to the safety of persons, the environment or property;
- b) Damage to persons, the environment or property;
- c) Adverse changes in the environment of the Earth, taking into account internationally agreed planetary protection policies;
- d) Harmful contamination of celestial bodies, taking into account internationally agreed planetary protection policies;
- e) Harmful contamination of outer space, including the creation of harmful persistent space debris;
- f) Harmful interference with other on-going space activities, including other space resource activities;
- g) Changes to designated and internationally endorsed outer space natural or cultural heritage sites;
- h) Adverse changes to designated and internationally endorsed sites of scientific interest.

10. Technical standards for prior review of, and safety zones around space resource activities

10.1 The international framework should provide that States and intergovernmental organizations shall require the conduct of a review prior to the authorization of a space resource activity to ascertain that such an activity is carried out in a safe manner to avoid harmful impacts.

10.2 The international framework should:

- a) Encourage the development of a domestic approval process to ensure that equipment, operational procedures and processes applied in space resource activities avoid harmful impacts;
- b) Encourage the development of a methodology to assess that equipment, operational procedures and processes applied in space resource activities meet common technical standards (conformity assessment);

- c) Encourage operators to develop technical standards for equipment, operational procedures and processes applied in space resource activities (standardization).
- 10.3 Taking into account the principle of non-appropriation under Article II OST, the international framework should permit States and intergovernmental organizations authorizing space resource activities to establish a safety zone, or other area-based safety measure, around an area identified for a space resource activity as necessary to assure safety and to avoid any harmful interference with that space resource activity. A safety zone shall not impede the free access, in accordance with international law, to any area of outer space of personnel, vehicles and equipment of other governmental, intergovernmental and non-governmental entities conducting space activities. A State or intergovernmental organization may authorize the restriction of access to a safety zone for a limited period of time, provided that timely public notice has been given setting out the reasons for such restriction.
11. Monitoring and redressing harmful impacts resulting from space resource activities
- 11.1 The international framework should provide that States and intergovernmental organizations shall monitor whether any harmful impacts result from space resource activities authorized by them.
 - 11.2 If a harmful impact resulting from a space resource activity occurs, the international framework should provide that the State or intergovernmental organization that authorized the space resource activity shall implement measures to respond to such harmful impact (response measures) and consider whether the space resource activity should be adjusted or terminated (adaptive management).
12. Sharing of benefits arising out of the utilization of space resources
- 12.1 Bearing in mind that the exploration and use of outer space shall be carried out for the benefit and in the interests of all countries and humankind, the international framework should provide that States and intergovernmental organizations authorizing space resource activities shall provide for benefit-sharing through the promotion of the participation in space resource activities by all countries, in particular developing countries. Benefits may include,

but not be limited to enabling, facilitating, promoting and fostering:

- a) Development of space science and technology and of its applications;
- b) Development of relevant and appropriate capabilities in interested States;
- c) Cooperation and contribution in education and training;
- d) Access to and exchange of information;
- e) Incentivization of joint ventures;
- f) Exchange of expertise and technology among States on a mutually acceptable basis;
- g) Establishment of an international fund.

12.2 The international framework should not require compulsory monetary benefit-sharing.

12.3 Operators should be encouraged to provide for benefit-sharing.

13. Registration and sharing of information

The international framework should provide that States and intergovernmental organizations shall:

- a) Register priority rights of an operator to search and recover space resources *in situ* in accordance with the international framework;
- b) Give advance notification of space resource activities authorized by them through an international repository;
- c) Register space objects in accordance with the REG,⁹ United Nations General Assembly Resolution 1721 B (XVI),¹⁰ or Article XI OST, taking into account United Nations General Assembly Resolution 62/101;¹¹
- d) Notify frequency assignments for recording in the Master International Frequency Register in accordance with the Radio Regulations of the International Telecommunication Union;¹²
- e) Provide, taking into account Article XI OST and the legitimate interests of operators, information and best practices on the authorization and supervision of space resource activities authorized by them through an international repository, including:

9 1975 Convention on the Registration of Objects Launched into Outer Space.

10 1961 Resolution 1721 B (XVI) adopted by the United Nations General Assembly, International Cooperation on the Peaceful Uses of Outer Space.

11 2008 Resolution 62/101 adopted by the United Nations General Assembly, Recommendations on enhancing the practice of States and international intergovernmental organizations in registering space objects.

12 The Radio Regulations, edition of 2016.

- i. The purposes, locations, orbital parameters and duration of space resource activities;
 - ii. The nature, conduct, and locations of space resource activities and associated logistic activities, for example deployment of stations, installations, equipment and vehicles;
 - iii. The results of space resource activities;
 - iv. Any phenomena discovered in outer space which could endanger human life or health, as well as of any indication of life;
 - v. Any harmful impacts resulting from space resource activities authorized by them and the measures planned or implemented to redress such impacts;
- f) Notify the termination of space resource activities authorized by them through an international repository together with a statement on the condition of the area where the space resource activity was carried out, including the presence of any space objects or space products, or parts thereof.

14. Provision of assistance in case of distress

The international framework should provide for the applicability of Article V OST and the ARRA¹³ to persons involved in space resource activities.

15. Liability in case of damage resulting from space resource activities

15.1 The international framework should provide for the applicability of Articles VI and VII OST and the LIAB¹⁴ to damage resulting from space resource activities.

15.2 The international framework should encourage initiatives of operators to provide, individually or collectively, compensation for damage resulting from their space resource activities.

16. Visits relating to space resource activities

The international framework should provide for the applicability of Article XII OST, taking into account the legitimate interests of operators.

13 1968 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Space.

14 1972 Convention on International Liability for Damage Caused by Space Objects.

17. Institutional arrangements

The international framework should provide for:

- a) The establishment and maintenance of a publicly available international registry for registering priority rights of an operator to search and recover space resources *in situ*;
- b) The establishment and maintenance of an international repository, in addition to the international registry, for making publicly available:
 - i. Information and best practices;
 - ii. The list of designated and internationally endorsed outer space natural and cultural heritage sites; and
 - iii. The list of designated and internationally endorsed sites of scientific interest;
- c) The designation or establishment of an international body or bodies responsible for:
 - i. The identification of best practices;
 - ii. The listing of designated and internationally endorsed outer space natural and cultural heritage sites, and sites of scientific interest;
 - iii. The monitoring and review of the implementation of the international framework as well as its modification or amendment; and
 - iv. The governance of the international registry, the international repository and any other mechanism that may be established for the implementation of the international framework.

18. Settlement of disputes

The international framework should encourage recourse by States, intergovernmental organizations and operators to the amicable resolution of disputes, for example by developing procedures for consultation or promoting the use of the 2011 Permanent Court of Arbitration Optional Rules for Arbitration of Disputes Relating to Outer Space Activities.

19. Monitoring and review

Mechanisms should be developed for monitoring implementation of the international framework, for example on the basis of reports of States and intergovernmental organizations, as well as for its review and further development (principle of adaptive governance).

4. Meetings of the Working Group

The Working Group functions on different levels. The Consortium partners attend a teleconference twice per year moderated by the Secretariat, focusing

on the activities carried out by the partners, in order to increase the outreach of the Working Group and raise awareness on the use of space resources. In addition, the Consortium partners, members and observers are invited to attend the face-to-face meetings.

4.1. Meetings of the first phase

During the first phase of the Working Group, four face-to-face meetings were held in Leiden, The Netherlands. The previous progress reports included relevant details on these meetings, during which the Draft Building Blocks were discussed and revised several times.

4.2. 1st meeting of the second phase, 23-24 April 2018

The first face-to-face meeting of the second phase took place from 23 to 24 April 2018, at Leiden University. It was attended by the majority of members and a great number of observers, and focused on the content of the Draft Building Blocks as well as on providing additional expert knowledge on some of the topics mentioned therein. To this end, several members and observers gave technical presentations covering subjects of scientific, technical, industrial, financial and commercial interest. As far as the technical aspects are concerned, extraction methods, recovery technologies, as well as material and resources on the Moon and asteroids were discussed. The importance of the utilisation of resources in determining their value and potential utilization mechanisms were also presented to the participants. Moreover, existing and potential commercial solutions and systems for a space-based economy were discussed. At the moment, the Working Group is focusing on the *in situ* utilization of space resources, recognizing that their use on the Earth will not materialize in the short to medium term. However, it has thoroughly examined ways and mechanisms for sharing the benefits from terrestrial use. Except from technical and commercial aspects of space resources, planetary protection, environmentally sustainable resource utilization, and the ethics involved in space resource activities were among the topics addressed.

The following meetings of the second phase are planned for November 2018 in Luxembourg, spring 2019 in Leiden and fall 2019 in Luxembourg. They will address the comments received on the Draft Building Blocks during the public consultation period and make necessary amendments. They will also focus on recommending strategies for establishing an international framework on space resources governance, by proposing appropriate fora for negotiation and suggesting potential formats for further implementation of the Building Blocks.

5. Outreach

The Working Group has engaged into a number of outreach activities with the purpose to raise awareness on its developments and on issues related to

space resource activities. A summary of the activities organised during the first phase is included in the previous progress report papers.

Besides the undertakings of the Working Group, its members and observers often participate in various international events where they elaborate on the work of the Group and present the content of the Draft Building Blocks.

5.1. NewSpace Europe, November 2017

During the NewSpace Europe conference held in Luxembourg from 16 to 17 November 2017, one of the Vice-Chairs and the Executive Secretary held a press conference to update the audience about the progress made with the introduction of the Draft Building Blocks and to address questions raised by the audience.

5.2. UNCOPUOS Legal Subcommittee 57th session

The Working Group organised a side-event in the framework of the fifty-seventh session of the UNCOPUOS Legal Subcommittee on 13 April 2018, in cooperation with the University of Vienna.¹⁵ The purpose of the event was to bring to the attention of the UNCOPUOS delegates the Draft Building Blocks and seek feedback. Three presentations were made focusing on the operation of the Working Group, the content of the Draft Building Blocks, as well as the current and future state of technological and industrial development.

Furthermore, during the Legal Subcommittee session a statement was made by the Dutch delegation regarding the progress of the Working Group and a factsheet with relevant information was distributed to the delegates.¹⁶ Similarly, a statement on The Hague International Space Resources Governance Working Group had been made by the Dutch Delegation to UNCOPUOS in April 2017 at the 56th Session of the Legal Subcommittee,¹⁷ as well as in 2016 during its 55th session.

5.3. Newsletter

A quarterly newsletter has been introduced by the Working Group, in order to update its recipients on the latest news regarding its activities, as well as on those of its members and observers.¹⁸ Its first edition was distributed in June 2018 and was made available on the Group's website, where any interested party can subscribe to receive it.

15 A/AC.105/1177, para. 22

16 A/AC.105/C.2/2018/CRP.18

17 A/AC.105/C.2/2016/CRP.17

18 See <https://us18.campaign-archive.com/?u=8720f02a367c7be626177e54e&id=21d24f4eb1>.

6. The way forward

The Working Group hopes to receive broad feedback on the Draft Building Blocks before proceeding with updating and hopefully completing them. Therefore, it extended the initial deadline for public consultation and feedback to 15 October 2018. Any interested party can provide feedback or remarks via email to spaceresources@law.leidenuniv.nl or the online questionnaire found on the Group's website. It is also planning to compose and publish a Commentary of the Building Blocks that will provide insight on the process of their formulation and the rationale behind the content of their provisions. Finally, the Working Group will continue to consider appropriate fora, where the discussion on the establishment of international framework on space resource activities can further evolve.