

## **Regulation of space resource rights: Meeting the needs of States and private parties**

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### 1. *Introduction*

This article addresses new developments and open issues concerning space resource rights. It explains the advent of space mining as a new industry and puts it in the context of current international law. It analyses to what extent current international law provides answers to the legal questions that arise from this activity. It also addresses developments in national legislation and reactions from the international community to those. Finally, it tries to give some indications of the relations between national and international law in this context and addresses the question whether one could stand in the way of the other. It argues that the adoption of national laws is not *per se* intended to interpret international law or to promote or prevent its further development, but undoubtedly can have the effect of producing ‘state practice’ and ‘*opinio juris*’ on existing or perceived gaps in international law. Other actions can shed further light over states’ intentions relating to the subject, such as public statements in the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS) or dedicated Working Groups. Considering current efforts, the authors believe that there is good hope for the eventual prevalence of international law to govern space resource activities.

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## 2. *Space resource mining – The current efforts*

The leading entities which aim to mine resources in outer space are private commercial entities.

Planetary Resources Inc is a US company, established in 2009. The company aims to mine asteroids and meanwhile reports that:

‘The pathway in identifying the most commercially viable near-Earth water-rich asteroids has led to the development of multiple transformative technologies that are applicable to global markets, including the agriculture, oil & gas, mining and insurance industries.’<sup>1</sup>

Recently, the company received a generous investment from the Government of Luxembourg, which will aid to accelerate the company’s technological development and its first asteroid prospecting mission was set to be launched before 2020.<sup>2</sup>

Deep Space Industries (DSI) is another US company which was established in 2013. It too aims to mine asteroids. Its goals are to ‘produce water, propellant, and building materials to serve growing space markets. From extending the profitability of commercial satellites to providing life support and power to new private-sector orbiting research stations, Deep Space Industries is industrializing the frontier’.<sup>3</sup> It received support from the government of Luxembourg as well, and declares that the company’s first mission, ‘Prospector-X’ to be launched in 2017,<sup>4</sup> is in cooperation with said government.<sup>5</sup>

It is not a coincidence that both companies are present in Luxembourg. During 2015 the government launched the ‘spaceresources.lu’ initiative<sup>6</sup> with a clear goal to attract space mining companies. The initiative includes financial support but also an attractive domestic legal regime, the first one in Europe and the second in the world to specifically

<sup>1</sup> See <[www.planetaryresources.com/2016/11/planetary-resources-and-the-government-of-luxembourg-announce-e25-million-investment-and-cooperation-agreement/](http://www.planetaryresources.com/2016/11/planetary-resources-and-the-government-of-luxembourg-announce-e25-million-investment-and-cooperation-agreement/)>. All websites cited in this paper were last accessed and verified on 26 November 2016.

<sup>2</sup> *ibid.*

<sup>3</sup> See <<http://deepspaceindustries.com/business/>>.

<sup>4</sup> See <<http://spacenews.com/deep-space-industries-unveils-first-asteroidprospecting-spacecraft/>>.

<sup>5</sup> See <<https://deepspaceindustries.com/prospector-x/>>.

<sup>6</sup> See <<http://www.spaceresources.public.lu/en/index.html>>.



authorize private entities to ‘own’ resources obtained in space. As to international law, the statement featured on the initiative’s webpage reads: ‘Fact is that the Outer Space Treaty does not specifically refer to space resources. The prohibition [of Article II of the Outer Space Treaty – see below] deals with the exercise of sovereignty over the territories in space’.<sup>7</sup>

Apart from mining asteroids, other companies aim to conduct their activities on the Moon.

Moon Express is a US company which plans to launch and land a robotic spacecraft onto the Moon’s surface, ‘beginning a new era of ongoing commercial lunar exploration and discovery, unlocking the immense potential of the Moon’s valuable resources’.<sup>8</sup> It seems to find that water which may be extracted from the Moon would be valuable and the Moon will serve as a ‘gas station in the sky’.<sup>9</sup>

Shackleton Energy is a US company which similarly focuses on water resources on the Moon:

‘There are billions of tons of water ice on the poles of the Moon. We are going to extract it, turn it into rocket fuel and create fuel stations in Earth’s orbit. Just like on Earth you won’t get far on a single tank of gas, what we can do in space today is straight-jacketed by how much fuel we can bring along from the Earth’s surface. Our fuel stations will change how we do business in space and jump-start a multi-trillion dollar industry.’<sup>10</sup>

It is noteworthy that several national space agencies plan resources mining related missions as well,<sup>11</sup> however, the case of commercial space mining by private entities presents a more complex challenge to the existing space treaties and is therefore the focus of this article.

<sup>7</sup> See <[www.spaceresources.public.lu/en/did-you-know/index.html](http://www.spaceresources.public.lu/en/did-you-know/index.html)>.

<sup>8</sup> See <[www.moonexpress.com/files/moon-express-press-kit.pdf](http://www.moonexpress.com/files/moon-express-press-kit.pdf)>.

<sup>9</sup> *ibid.*

<sup>10</sup> See <[www.shackletonenergy.com/overview#goingbacktothemoon](http://www.shackletonenergy.com/overview#goingbacktothemoon)>.

<sup>11</sup> See for example: NASA’s mission <[www.nasa.gov/content/goddard/new-nasa-mission-to-help-us-learn-how-to-mine-asteroids](http://www.nasa.gov/content/goddard/new-nasa-mission-to-help-us-learn-how-to-mine-asteroids)>; and JAXA’s mission <[www.businessinsider.com/japan-is-launching-an-asteroid-mining-space-program-2014-9?international=true&r=US&IR=T](http://www.businessinsider.com/japan-is-launching-an-asteroid-mining-space-program-2014-9?international=true&r=US&IR=T)>.



### 3. *Space resource rights under international space law*

The most important legal instrument of international space law to date is the Outer Space Treaty of 1967.<sup>12</sup> The Treaty does not deal specifically with mining activities in outer space, however, it does include some general provisions which are relevant to such conduct.

To begin with, states parties and private entities attributed to them are free to explore and use outer space, as long as the activities are in line with the provisions of the Treaty, for instance they must be within the peaceful realm, there must be some sharing of benefits, no harmful interference, and in case of private entities, their activities must be duly authorized and supervised by the state.<sup>13</sup> Furthermore, Article II of the Treaty forbids the ‘appropriation’ of outer space including the Moon and other celestial bodies, while Article VIII provides that states may exercise their jurisdiction and control over registered space objects and personnel thereof. In other words, sovereignty is very limited in outer space. This legal situation does not necessarily imply that mining and utilizing space resources are prohibited, although it is clear that the entities involved in such activities cannot simply ‘own’ the celestial body out of which any resources are mined. The Treaty does not explicitly specify whether extracting and consuming non-renewable natural resources, including minerals and water on celestial bodies, is in line with its provisions.<sup>14</sup>

The international legal regime becomes more complex when considering the Moon Agreement of 1979.<sup>15</sup> This instrument includes spe-

<sup>12</sup> Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (referred to as Outer Space Treaty or OST) (adopted 27 January 1967, entered into force 10 October 1967) 610 UNTS 205. The OST currently has 104 states parties.

<sup>13</sup> Arts I and VI OST.

<sup>14</sup> See also Position Paper of the International Institute of Space Law on Space Mining (IISL Position Paper) of 20 December 2015, s II(1)(b), at 2 <[www.iislweb.org/html/20151220\\_news.html](http://www.iislweb.org/html/20151220_news.html)> and T Masson-Zwaan and B Richards ‘Op-ed | International Perspectives on Space Resource Rights’, SpaceNews (8 December 2015) available at <<http://spacenews.com/op-ed-international-perspectives-on-space-resource-rights/>>.

<sup>15</sup> Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (referred to as Moon Agreement or MA) (adopted 18 December 1979, entered into force 11 July 1984) 1363 UNTS 4. Even though the Treaty was adopted by consensus in UNCOPUOS, the MA currently has only 17 states parties, not including



cific provisions relating to resources and is more protective than the OST. Its Article 11(3) provides that:

‘Neither the surface nor the subsurface of the moon, nor any part thereof or natural resources in place, shall become property of any State, international intergovernmental or non-governmental organization, national organization or non-governmental entity or of any natural person.’

And Article 11(5) provides that:

‘States Parties to this Agreement hereby undertake to establish an international regime, including appropriate procedures, to govern the exploitation of the natural resources of the moon as such exploitation is about to become feasible.’

Common sense dictates that in order to comply with this provision, the states parties to this Agreement must reach an international agreement before they engage in commercial mining activities. Since these activities are still very much in their infancy and likely not yet ‘about to become feasible’, this seems to allow the states parties some time to discuss such international legal regime.

The very general regime of the Outer Space Treaty on one hand, and the more specific, yet controversial regime of the Moon Agreement on the other, led states which are interested in commercial development of space resource activities, and which are not bound by the Moon Agreement, to create national laws in order to clarify that those activities are permissible. By adopting national law these states do not oppose a future international regime, rather, they found the need to support the industry by drafting national laws, as a start, to be a priority. The laws of the United States and Luxembourg will be analyzed as the only available examples of national legislation in the next section.

any of the space powers; Venezuela acceded on 3 November 2016, see <[treaties.un.org/doc/Publication/CN/2016/CN.829.2016-Eng.pdf](http://treaties.un.org/doc/Publication/CN/2016/CN.829.2016-Eng.pdf)>.



#### 4. *Space resource rights under national space law*

##### a) *United States*

The first state to adopt national legislation was the United States. The Commercial Space Launch Competitiveness Act (CSLCA) was passed on 25 November, 2015.<sup>16</sup> It consists of four Titles, and Title IV is named ‘Space Resource Exploration and Utilization’, to be referred to as the ‘Space Resource Exploration and Utilization Act of 2015’.<sup>17</sup> Section 402 provides: ‘A United States citizen engaged in commercial recovery of an asteroid resource or a space resource under this chapter shall be entitled to any asteroid resource or space resource obtained, including to possess, own, transport, use, and sell the asteroid resource or space resource obtained in accordance with applicable law, including the international obligations of the United States’. Section 402 also provides that the President shall submit a report to Congress that specifies the authorities necessary to meet the international obligations of the United States, including authorization and continuing supervision by the Federal Government, and recommendations for the allocation of responsibilities among Federal agencies for those activities. Furthermore, Section 403 confirms that by enactment of this Act the United States does not assert sovereignty or sovereign or exclusive rights or jurisdiction over, or ownership of, any celestial body, thus giving reassurance that no violation of Article II OST is intended.

The position paper issued by the International Institute of Space Law (IISL) interpreted the Act as follows:

‘in view of the absence of a clear prohibition of the taking of resources in the Outer Space Treaty one can conclude that the use of space resources is permitted. Viewed from this perspective, the new United States Act is a possible interpretation of the Outer Space Treaty.

<sup>16</sup> HR 2262, available at <[www.congress.gov/bill/114th-congress/house-bill/2262/text](http://www.congress.gov/bill/114th-congress/house-bill/2262/text)>.

<sup>17</sup> It is often erroneously referred to as ‘the SPACE Act of 2015’, but that refers to Title I of the Act. The IISL Position Paper of 20 December 2015 (n 14) analyses Title IV in some detail.



Whether and to what extent this interpretation is shared by other States remains to be seen.<sup>18</sup>

Industry seems to welcome this law, as can be seen from the website of DSI. DSI's legal counsel for instance argues that

'The birth and passage of the first national space resource utilization legal regime is the first step toward further international cooperation in space and it will ultimately benefit all mankind. With similar legislation being drafted in other nations, bilateral and multilateral agreements will develop between like-minded nations that see the economic, environmental, and social importance that space resource utilization will bring to their respective countries.'<sup>19</sup>

Industry was in fact deeply involved in the legislative process.

On 4 April 2016, the Office of Science and Technology Policy (OSTP) of the Executive Office of the President of the United States issued a letter in response to a requirement in Section 108 of Section I of the CSLCA.<sup>20</sup> Section 108 ('Space Authority') called on OSTP to identify appropriate authorization and supervision authorities and to recommend an authorization and supervision approach that would 'prioritize safety, utilize existing authorities, minimize burdens to the industry, promote the US commercial space sector, and meet the United States obligations under international treaties'. In order to meet the obligations as contained in Article VI OST for 'non-traditional' commercial missions such as space mining, the 'Section 108 report' recommends a light-touch authorization and supervision process, giving authority to the Department of Transport/Federal Aviation Administration (FAA) to conduct 'Mission Authorizations', modelled on the current Payload Review process, in coordination with other agencies such as the Department of State and the Department of Defense. The 'report' required by Section 402 of Title IV of the CSLCA is not expected to be issued at this time, and the Section 108 Report will be the basis for further steps.

<sup>18</sup> *ibid.*

<sup>19</sup> See <<https://deepspaceindustries.com/is-asteroid-mining-legal/>>.

<sup>20</sup> See <[www.whitehouse.gov/sites/default/files/microsites/ostp/csla\\_report\\_4-4-16final.pdf](http://www.whitehouse.gov/sites/default/files/microsites/ostp/csla_report_4-4-16final.pdf)>.



Meanwhile, the FAA decided to leverage its authority by granting the first license for a commercial lunar mission to Moon Express in July 2016.<sup>21</sup> It was based on an ‘enhanced’ Payload Review, similar to the recommended ‘Mission Authorization’, of the Moon Express MX-1E spacecraft, to be launched at the end of 2017. The review involved coordination with the State Department and NASA, and combined the standard payload review process with additional voluntary information about the spacecraft, how it would avoid harmful interference with other spacecraft, and planetary protection protocols. This was ‘a temporary solution to the issue of regulatory oversight of non-traditional missions’.<sup>22</sup>

b) *Luxembourg*

On 11 November 2016, Luxembourg announced its draft law on the exploration and use of space resources, barely one year after the United States.<sup>23</sup> It is expected to enter into force in early 2017. According to Deputy Prime Minister and Minister of the Economy, Etienne Schneider:

‘The legal framework we put in place is perfectly in line with the Outer Space Treaty. Our law does not suggest to either establish or imply in any way sovereignty over a territory or over a celestial body. Only the appropriation of space resources is addressed in the legal framework. Luxembourg’s new space legislation confirms the strong commitment to become a European hub for the exploration and use of space resources.’<sup>24</sup>

Article 1 of the draft law provides that space resources are capable of being appropriated in accordance with international law. The long commentary note accompanying this article in essence argues that space

<sup>21</sup> See <[www.faa.gov/news/fact\\_sheets/news\\_story.cfm?newsId=20595](http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=20595)> and <[www.moonexpress.com/files/moon-express-press-kit.pdf](http://www.moonexpress.com/files/moon-express-press-kit.pdf)>.

<sup>22</sup> Statement by George Nield, FAA associate administrator for commercial space transportation at <<http://spacenews.com/moon-express-wins-u-s-government-approval-for-lunar-lander-mission/>>.

<sup>23</sup> Projet de loi sur l’exploration et l’utilisation des ressources de l’espace, see <[www.gouvernement.lu/6481433/11-presentation-spaceresources?context=3422869](http://www.gouvernement.lu/6481433/11-presentation-spaceresources?context=3422869)>.

<sup>24</sup> *ibid.*





mining is no different than earthly mining or fishing in the high seas: one may own the mined resources or the fish, but not the ground or sea that contains them.

The law is limited to authorization and supervision of the exploration and use of space resources and does not cover authorization and supervision for launches, or for objects that are launched, and related issues such as registration. These are to be, where appropriate, subject to separate rules and authorizations (Article 3). It must be noted that such rules do not exist so far. A separate authorization will be required for each mission, and authorizations are limited in time, but can be renewed. The authorization processes are ‘largely inspired by the rules applicable to the financial sector’ and bear little resemblance to authorization process found in other national laws governing space activities.

An interesting difference with United States law seems to be that the Luxembourg draft holds authorized operators fully liable for damage, ie there is no cap on liability, which may make obtaining insurance difficult (Article 15).

The press release of 11 November announced that ‘negotiations are underway to formalize relationships with around twenty companies and entrepreneurs originating both from Europe and from outside of Europe’.<sup>25</sup>

##### 5. *The relation between national and international law on space resources*

Since both the US and Luxembourg are parties to the OST, they must act in conformity with its provisions. As seen in the above section, both national laws explicitly affirmed this international obligation.

The purpose of both these national laws was not to interpret existing international law or promote (or prevent) the development of new international law. Rather, they were considered as a necessary first step to provide legal certainty to the new industry with a view to securing investments. As such, they do not stand in the way of subsequent future international agreements. The explanatory note of the Luxembourg draft law for instance states that: ‘Luxembourg continues to call upon a

<sup>25</sup> *ibid.*



reinforced and effective collaboration with other countries on this matter. An example of such collaboration is the way in which the European Space Agency (ESA) currently operates'. And in practice, the Luxembourg government is a member of The Hague Space Resources Governance Working Group, discussed in the next section.

On the other hand, one can argue that these laws do constitute an attempt to interpret international law, at least as far as the OST is concerned, to which the United States and Luxembourg are parties. As the IISL Position Paper says, a national law such as the US law can be a possible interpretation of treaty law; however, it is not necessarily the only correct interpretation. State practice will have to evolve further. This can happen through the enactment of national legislation, but also by other means, such as statements in UNCOPUOS or responses to questionnaires of UNCOPUOS Working Groups.

#### 6. *Reactions of the international community to the adoption of national law on space resource mining*

Perhaps the strongest reaction to the United States law came during the 2016 session of the Scientific and Technical Subcommittee of UNCOPUOS. Russia submitted a Conference Room Paper (CRP) that stated, among others:

'The United States vividly demonstrated a connection between diminishing the Committee's role and powers, on the one hand, and manifestations of total disrespect for international law order, on the other, by adopting the commercial space launch competitiveness act on 25 November 2015.'<sup>26</sup>

Russia further argued that UNCOPUOS is the sole forum for space law issues and states cannot legislate unilaterally. It stated that space mining is contradictory to the non-appropriation principle, assimilating resources and celestial bodies.

During the 2016 session of the Legal Subcommittee of UNCOPUOS the US Act was also discussed. Belgium reacted to the

<sup>26</sup> UN Doc A/AC.105/C.1/2016/CRP.15, available at <[www.unoosa.org/oosa/en/ourwork/copuos/stsc/2016/index.html](http://www.unoosa.org/oosa/en/ourwork/copuos/stsc/2016/index.html)>.



statements about the US law and the statement by Luxembourg announcing its intention to draft a law by saying that it was concerned about the global economic imbalance that space resource exploration could entail. It would prefer an international approach, arguing that space resources cannot be appropriated by extension of national jurisdiction. Belgium suggested the introduction of a new item for the Legal Subcommittee agenda for 2017. This was accepted without much discussion by all UNCOPUOS members by consensus and the agenda item will be titled 'General exchange of views on potential legal models for activities in the exploration, exploitation and utilisation of space resources'.<sup>27</sup> It is expected that the Luxembourg law will also be presented and discussed on that occasion. The session will take place from 27 March to 7 April 2017.

Another initiative that must be mentioned here is the establishment of The Hague Space Resources Governance Working Group in 2015.<sup>28</sup> The Working Group aims to assess, on a global scale, the need for a regulatory framework for space resource activities and to prepare the basis for such regulatory framework. Where the need is established, the Working Group will encourage states to engage in negotiations for an international agreement or non-legally binding instrument. The Working Group is based on a Consortium and a Secretariat, hosted at the International Institute of Air and Space Law at Leiden University, and consists of approximately 25 members and a number of observers. The working group is supported by the Dutch Ministry of Economic Affairs and the Ministry of Foreign Affairs. Two face-to-face meetings have been held so far, and a number of 'building blocks' for the governance of space resource activities were identified and are being developed. Recommendations on the implementation strategy will also be formulated at a later stage. Stakeholders from government, industry, universities and research centers participate in the work, the results of which could serve as input for further discussions in an appropriate international forum.

<sup>27</sup> Presentations on the reactions at UNCOPUOS were given by Olavo Bittencourt and by Thomas Cheney at the Symposium on Legal Aspects of Space Resource Utilization held in Leiden on 17 April 2016, see <[www.universiteitleiden.nl/en/events/2016/04/symposium-on-legal-aspects-of-spaceresource-utilisation](http://www.universiteitleiden.nl/en/events/2016/04/symposium-on-legal-aspects-of-spaceresource-utilisation)>.

<sup>28</sup> See <<http://law.leiden.edu/organisation/publiclaw/iiasl/working-group/the-hague-space-resources-governance-working-group.html>>.



At the European level, on 27 June 2016 a member of the European Parliament submitted a question to the Commission regarding its view on the United States law on space mining.<sup>29</sup> It specifically asked if the Commission was ‘prepared to press for a moratorium on space mining, at least until an international regulation on space mining has been established, in the spirit of the Moon Treaty of 1979 and the seabed provisions of the UN Convention on the Law of the Sea of 1982’. The rather evasive answer was provided on 9 September and said that the Commission will ‘continue monitoring developments in these areas in consideration of the need for future Union action, always within the limits of the Union competence in space as set by the Treaties and in accordance with the principles of proportionality and subsidiarity’.<sup>30</sup> A few weeks later, the new European Space Strategy was presented, which does make reference to space mining: ‘Increased human activity in space and the rapid growth of new entrants is testing the UN conventions on outer space to the limit, including on issues of space traffic management and mining. Europe should be among the leaders in navigating global challenges such as climate change or disaster risk reduction, while promoting international cooperation and building the global governance or appropriate legal frameworks for space’.<sup>31</sup> It thus seems that the EU has a preference for an international legal framework rather than national laws governing space resource activities.

### 7. *Concluding and looking ahead*

The case of space resource rights provides an interesting illustration of how international and national laws may evolve in parallel, assuming that further developments on the international level will indeed materialize. Alternatively, in the case at hand, domestic legislation may ‘anticipate’ or ‘orient’ the development of international law. This recalls what

<sup>29</sup> See <<http://www.europarl.europa.eu/sides/getDoc.do?type=WQ&reference=E-2016-005146&language=EN>>.

<sup>30</sup> See <<http://www.europarl.europa.eu/sides/getAllAnswers.do?reference=E-2016-005146&language=EN>>.

<sup>31</sup> ‘Space Strategy for Europe’, COM(2016) 705 final (26 October 2016) available at <[http://ec.europa.eu/growth/toolsdatabases/newsroom/cf/itemdetail.cfm?item\\_id=8975&lang=en](http://ec.europa.eu/growth/toolsdatabases/newsroom/cf/itemdetail.cfm?item_id=8975&lang=en)>.



happened in the field of law of the sea with reference to the regime of the continental shelf or the environmental protection of arctic areas, where concerned individual States (US, Canada) adopted domestic legislation intended to fill normative gaps in international legal regulation.

It is the authors' opinion that the presented national laws do not stand in contradiction to international law, and are not a hurdle to its development; it is clear that they interplay with international law.

While the national laws are subject to international treaty law in this case, the mere existence of the first influences the latter. By enacting national laws states codify a certain practice as well as *opinio juris*. These two elements may form international customary law under certain circumstances, and may be regarded, together with said treaty law, as internationally binding upon states.<sup>32</sup>

The IISL Position Paper concludes by stating:

'It is an open question whether this legal situation is satisfactory. Whether the United States' interpretation of Art II of the Outer Space Treaty is followed by other states will be central to the future understanding and development of the non-appropriation principle. It can be a starting point for the development of international rules to be evaluated by means of an international dialogue in order to coordinate the free exploration and use of outer space, including resource extraction, for the benefit and in the interests of all countries.'<sup>33</sup>

Indeed, one may argue that the legal situation is unsatisfactory; however, one must also consider the possible alternative situations. Space resource mining as well as other novel space activities such as active debris removal and colonizing celestial bodies all challenge the general language of the Outer Space Treaty.

As states parties to the OST are under the obligation to authorize and supervise such space activities pursuant to Article VI, waiting until states reach an international agreement relating to space resource mining would mean giving a hand to an unregulated space industry. Private

<sup>32</sup> See Art 38(1)(a) and (b) of the Statute of the International Court of Justice. 'Teachings of the most highly qualified publicists of the various nations' are recognized as another source of international law which may be relevant in the case of space resource rights, however, only 'as subsidiary means for the determination of rules of law' pursuant to Article 38(1)(d) of the Statute.

<sup>33</sup> (n 14).



entities may still elect their ‘flag of convenience’ and operate from states which did not enact any national space laws, or even operating from states which are not parties to the OST. In the authors’ opinion, a situation like that would be worse than the existing situation, where private entities will operate under a national legal regime which regulates their conduct while in principle being subject to international treaty law. Moreover, an international regime will provide them with international legitimacy and international protection of their mining activities.

States should make efforts to reach an international agreement relating to space resource rights. It remains to be seen what form such ‘international agreement’ may take. Accordingly, future international understandings which may be a result of the discussions at the UNCOPUOS can take the form of a General Assembly Resolution(s) leading to states drafting and adopting new binding treaty law. It may also take the form of non-binding guidelines or other kinds of ‘soft law’ as is currently the case for matters relating to space debris mitigation or planetary protection, for instance.

Promoting the efforts to reach any kind of international agreement relating to space resource rights would benefit all stakeholders, as one of the key objectives of public international law is elaborating a legal order which prevents states from entering into conflicts over any type of resources, on Earth and beyond.