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Widening the horizons of outer space law
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1 INTRODUCTION TO THE NATIONAL LEGAL, REGULATORY AND
POLICY FRAMEWORK

The Netherlands is a party to all five UN space treaties. It ratified the Outer Space Treaty in 1969, and the Rescue and Return Agreement, Liability Convention and Registration Agreement in 1981. The Netherlands is one of the eighteen parties to the Moon Agreement, which it ratified in 1983.

The Netherlands has been a member of UNCOPUOS since 1977 and is a member of several international intergovernmental organisations relevant for space activities, such as the European Space Agency (ESA), the European Union (EU), and the International Telecommunication Union (ITU). It has also ratified the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations.

The Ministry of Economic Affairs is the governmental authority in charge of space. The Ministry, through its Directorate-General for Enterprise and Innovation, defines the Dutch space policy. A new policy is adopted approximately every three years and describes the priorities of the Netherlands during ESA Ministerial Conferences, in conjunction with national policy and participation in the programs of the EU and the UN.¹ The government set three main goals in the 2019 policy:

- Maximise the social, scientific, and economic relevance of space activity for the Netherlands
- Realise the Dutch contribution to European autonomous and affordable access and use of space
- Retain ESTEC for the Netherlands and connect it to the Dutch space cluster.

* *The Space Law Review*, 3rd ed., Joanne Wheeler (ed.), The Law Reviews, UK, 2021. <https://thelawreviews.co.uk/title/the-space-law-review/netherlands>, Reproduced with permission from Law Business Research Ltd.

1 The current policy dates from 2019. See <https://www.rijksoverheid.nl/documenten/beleidsnota-s/2019/06/19/bijlage-1-nota-ruimtevaartbeleid-2019> (in Dutch).

The Ministry delegated the implementation of the Space Activities Act to its Radiocommunications Agency (*Agentschap Telecom*).² Another Agency of the Ministry that is relevant for setting up space activities from the business perspective is the Netherlands Enterprise Agency (*Rijksdienst voor Ondernemend Nederland, RVO*).³ The Netherlands Space Office (NSO)⁴ provides advice on and implements the space policy of the Netherlands. The NSO reports to a steering group composed of the Ministry of Economic Affairs and Climate Policy, the Ministry of Education, Culture and Science, the Ministry of Infrastructure and Water Management, and the Netherlands Organisation for Scientific Research (NWO). The Minister of Economic Affairs serves as coordinator. The NSO is governed by a Covenant.⁵

The national legal and regulatory framework of the Netherlands consists of the following instruments⁶:

- Rules Concerning Space Activities and the Establishment of a Registry of Space Objects (Space Activities Act 2006, in force since 1 January 2008)
- Decree of 13 November 2007 containing rules with regard to a registry of information concerning space objects (Space Objects Registry Decree)
- Order of the Minister of Economic Affairs of 7 February 2008 containing rules governing licence applications for the performance of space activities and the registration of space objects, as amended in 2010 and 2015 to update the two related forms:
 - Form for registration of space objects
 - Form for application for/amendment of a license
- Decree of 19 January 2015 expanding the scope of the Space Activities Act to include the control of unguided satellites (Unguided Satellites Decree)

2 REGULATION IN PRACTICE

The Netherlands Space Activities Act, hereinafter also referred to as ‘the Act’, in force since 1 January 2008, establishes a flexible licensing system for private space operators, including all necessary requirements such as insurance and regulation of liability issues. The Act contains a series of condi-

2 See for the Ministry, <https://www.government.nl/ministries/ministry-of-economic-affairs-and-climate-policy> and for the Radiocommunications Agency, <https://www.agentschaptelecom.nl/> and <https://www.agentschaptelecom.nl/onderwerpen/ruimtevaart> (in Dutch). The general site of the Radiocommunications Agency is also available in English at <https://www.agentschaptelecom.nl/radiocommunications-agency>.

3 See <https://english.rvo.nl/>, and <https://business.gov.nl/regulation/applying-licence-space-activities/>.

4 See <https://www.spaceoffice.nl/en/>.

5 See <https://zoek.officielebekendmakingen.nl/stcrt-2008-500.html> (in Dutch).

6 Most are available in English at <https://www.unoosa.org/oosa/en/ourwork/spacelaw/nationalspacelaw/index.html>.

tions to be complied with by operators, relating to the safety of persons and property, environmental protection, public order and security, and financial security, as well as compliance with international obligations of the State.

Since its entry into force, licenses have been granted to New Skies Satellites B.V., ISIS B.V., AMSAT NL, TU Delft and Hiber B.V. The license to NSS was granted for the guidance of geostationary communications satellites; the latter four operators were granted a license for the operation of unguided space objects in low Earth orbit. In addition, in 2020 Hiber B.V. was granted a second license for the operation of guided objects in outer space. Regular supervision audits have been carried out for all licensees.

So far, no licensing fees have been charged to applicants. The Explanatory Memorandum to the Act argues that this was decided in view of the small number of license applications that was expected, and because it was difficult to foresee what the cost would be. It was also announced that this decision would be subject to review when the total number of license applications would exceed twenty.⁷

2.1 Scope

The Act defines ‘space activities’ as ‘the launch, the flight operation or the guidance of space objects in outer space’⁸ and applies to space activities that are performed ‘in or from within the Netherlands or else on or from a Dutch ship or Dutch aircraft’.⁹ The law does not apply to activities of Dutch citizens abroad, nor to space activities that are performed under the responsibility of the government. The term ‘launch’ does not require any explanation, and the Netherlands will not be launching space objects anytime soon. The terms ‘guidance’ and ‘flight operation’ are further elaborated in the Act’s Explanatory Memorandum:

“The term “flight operation” is understood to mean the navigation, tracking and control of a space object during the flight phase, i.e. the phase between the launch of the space object and the time at which it takes up a position in outer space. Such activities can be performed from facilities, bases, earth stations or other control centres established on Dutch territory.

This likewise applies with regard to the guidance of space objects in outer space, i.e., outer-space activities in the broad sense. This includes all command and control activities in relation to a space object, usually a satellite, e.g. the execution of major and minor manoeuvres designed to keep a satellite in its position in outer space or to adjust its position/orbit, checking that there is no space debris

7 See <https://zoek.officielebekendmakingen.nl/kst-30609-3.html> (in Dutch), Sec. I.3.2. It seems likely that this number will be reduced in the near future, as by now considerable experience and insight into the actual costs has been gained.

8 Sec. 1.b.

9 Sec. 2.1.

in the vicinity that might cause problems, and monitoring the fuel level of geostationary satellites, etc., so as to ensure that satellites can be decommissioned when they are no longer in use, by placing them into a “decommissioning orbit” around 200 km higher than the geostationary orbit.¹⁰

The Decree of 2015 extended the material scope of the Act to include the control from the Netherlands of unguided space objects in outer space by means of a communications link. Hence, a license is currently required for the following space activities:

- Launching space objects into outer space
- Operating the flight of space objects in outer space
- Guiding space objects in outer space
- Controlling unguided space objects in outer space.

2.2 Procedure and Requirements

To obtain a license, an application must be addressed to the Minister¹¹ and sent to the Radiocommunications Agency.¹² A decision must be issued within six months.¹³ Should this date not be met, then the General Administrative Law Act provides that the applicant must be notified as soon as practicable and that a reasonable time limit be specified within which the decision can be expected. So far, all license applications have been decided within the six-month period.

The licence is issued for the duration of the space activities, which means that an operator who has been granted a license for the operation/guidance of communication satellites in geostationary satellite orbit does not need to apply for a new license for each new communications satellite in GSO.¹⁴ Although new satellites that carry out the same activity and are similar to the ones for which the license was granted do not require a new license, they do need to be notified to the Agency. Licences are not transferable.¹⁵

The Ministerial Order of 2008 sets out the procedure and specifies the information and documents to be furnished by the applicant and the requirements it must fulfil, which, as the Act provides, can relate for instance to knowledge and experience, or proof of frequency rights.¹⁶

The 2015 amendment of the 2008 Order lists the information to be submitted in five categories:

10 Explanatory Memorandum, *supra* n. 7, Sec. I.3.2.

11 Sec. 4.1.

12 Art. 3 of the Order of 2008.

13 Sec. 5.

14 Sec. 3.6

15 Sec. 8.1.

16 Sec. 4.3.

- The fullest possible description of the space activities, including a description of the applicant’s knowledge and experience of conducting space activities
- Relevant technical information about the space activity
- Documentary proof of a liability insurance policy
- Financial documents consisting of:
 - A financial statement for the past financial year, including the audit opinion (if issued)
 - A projected profit and loss account, with explanatory notes
 - A liquidity forecast, with explanatory notes
 - A risk analysis indicating what management measures have been taken to safeguard the continuity of the space activities
- Documentary evidence of the authorisation to use frequency space.

These five categories are further specified in the application form, which can be completed online:¹⁷

a) Plans, knowledge, and experience

Applicants must provide a business plan, project plan or other information that specifically relates to the (planned) space activities. This information must also demonstrate that the applicant has knowledge of and experience in performing the space activities for which a license is being requested. If third parties are engaged by the applicant to perform part of the work for the space activities for which a license is requested, the information must also be provided.

b) Aerospace engineering information

Applicants must provide relevant space technology information about the nature of the mission, the degree of guidance/propulsion, design & development, testing, operations, including information on how communication with the satellite system occurs from the Netherlands, expected lifespan and method of decommissioning, as well as a ‘space debris mitigation plan’, or a summary thereof.

c) Insurance information

Applicants must submit documentary evidence of insurance coverage for liability arising from the launch as well as the subsequent space activity(s), preferably by means of one or more ‘Certificate(s) of Insurance’ which provides:

- Information about the insurance contract of the applicant or, if this insurance is included in the launch contract, about the insurance contract of the launch company (name of insurer(s), cover, amount of cover, period of coverage, etc.)

¹⁷ See <https://www.agentschaptelecom.nl/documenten/formulieren/2017/april/4/aanvraag-wijziging-vergunning-ruimtevaartactiviteiten> (in Dutch).

- Mention of the Dutch government as ‘additional insured’
- Proof that the insurance premium has been paid.

d) *Financial information*

Applicants must provide the following:

- The annual accounts for the past financial year, including the auditor’s report, if available
- A forecast profit & loss account with explanatory notes
- A liquidity forecast with explanatory notes
- A risk analysis indicating which measures (financial, insurance and space technology) have been taken to guarantee the continuity of space activities.

e) *Permission to use frequency space*

Applicants must provide proof of the orbital position and frequency rights allocated to it, relating to one or more space objects or space activities for which the license is requested, including:

- A supporting document (e.g., a print screen) of frequency registrations in the Master International Frequency Register (MIFR) of the ITU
- The ID number and satellite name under which the satellite network or satellite system is known to the ITU
- Proof (e.g., copy) of any radio amateur license used, if the amateur frequency band is used when sending commands to the space object.

Based on these requirements, a detailed ‘Space Activities Information Document’ (SAID) is prepared by the license applicant following a ‘Document Requirements Description’ (DRD) provided by the Agency. The DRD goes into even more details on the various requirements, however these are beyond the scope of this chapter. The content of the DRD is by default confidential, unless otherwise agreed.

The Radiocommunications Agency lists some practical steps on its website which license applicants are advised to follow.¹⁸ They are advised to request a meeting with the Agency well in advance to discuss the purpose of the space activities, frequency rights and orbit positions and to enter into a cooperation agreement (the Agency acts as ‘notifying authority’ for satellite companies and arranges filing rights). Applicants are furthermore advised to submit their application form and accompanying documents at least 6 months before the start of the space activities.

The Agency will then engage experts to review the application by means of an audit, looking at financing, insurance, and technology of the planned space activities, checking whether the activities are safe, and whether the applicant has sufficient knowledge and experience. Based on the audit report, the Agency will decide whether it will grant a license, the

18 See <https://www.agentschaptelecom.nl/onderwerpen/ruimtevaart>.

level of insurance, and how it will check compliance; these regular supervision audits are also carried out with the help of external experts.

Supervision audits take place approximately every three years, taking also into account the availability of the license holder, and are based on an updated SAID. A license can be amended, or a new license can be issued, if the information and circumstances change substantially, e.g., the activity changes significantly, the company is restructured, or major growth occurs.

2.3 Conditions

Conditions regarding the safety of persons and goods, the protection of the environment in outer space, financial security, protection of public order, security of the State, or the fulfilment of the international obligations of the State can be attached to the license.¹⁹

Sufficient insurance coverage is a key requirement for granting a licence. The amount of the required insurance is what the Minister considers to be the maximum possible cover for the liability arising from the space activities for which a licence is requested, taking into account what can reasonably be covered by insurance.²⁰

This leaves room for flexibility and has for instance resulted in the determination of a lower amount for in-orbit third-party liability insurance for unguided satellites, as explained in Section III.

2.3.1 *Safety and Security*

A license can be refused or revoked if the safety of persons and goods, environmental protection in outer space, the maintenance of public order or national security are jeopardized.²¹ In case of safety or environmental risk, necessary measures will be taken and the license holder will be instructed to perform accordingly.²² In case of a safety incident, the license holder must implement all reasonable mitigation and remediation measures to the greatest extent possible and provide all relevant information.²³ So far, no applications have been refused nor has any license been revoked under these provisions.

2.3.2 *Registration*

In terms of registration requirements, licensees must furnish information required for the space objects registry that the Minister maintains.²⁴ The

19 Sec. 3.3.

20 Sec. 3.4.

21 Sec. 6.1.b and 7.1.c.

22 Sec. 7.4.

23 Sec. 10.

24 Sec. 11.

Order of 2008 reiterates the obligation to register and refers to a special form to be used. The Decree of 2007 sets out the details for this process.²⁵ The Netherlands has created a unique format for its national registry in that it consists of a national part and a UN part, flowing from its interpretation of the definition of a launching State. This is further explained in Section III.

2.3.3 *Redress and Liability*

The Act stipulates that the State has the right to recover from private operators any compensation paid by the State for damages caused to third parties.²⁶ The liability of the licence holder is limited to the sum insured.²⁷

2.3.4 *Enforcement and Penalties*

Enforcement and administrative penalties the State can impose are addressed in Chapter 5 of the Act (Sec. 13-26). The provisions set out the procedures and time limits of the various steps involved. The right to impose an administrative penalty ends five years after the infringement is committed, but if an objection is raised or an appeal is brought, the expiry date is deferred until a decision has been made on that objection or appeal.²⁸

2.3.5 *Compliance with space debris mitigation guidelines, such as in relation to end-of-life*

Debris mitigation is not addressed explicitly in the Act or regulations, but in practice, compliance with various international guidelines such as the UNCOPUOS Space Debris Mitigation Guidelines, the IADC Space Debris Mitigation Guidelines, the ITU-R S.1003 Regulations, the ISO Space Debris Mitigation Standards and the EU Code of Conduct for Space Debris is required. The license application form asks for a debris mitigation plan or a summary thereof. The DRD further details the requirements, e.g., regarding measures and methods for debris mitigation and remediation, expected life expectancy of satellites, and plans for decommissioning. Furthermore, it is mandatory to report any anomalies, to calculate collision risks according to existing criteria (e.g., IADC, CSpOC) and adapt missions accordingly when needed.

25 Art. 4, Order of 2008. The current form can be found at <https://www.agentschaptelecom.nl/onderwerpen/ruimtevaart/documenten/formulieren/2017/april/4/aanvraag-registratie-ruimtevoorwerpen>.

26 Sec. 12.1.

27 Sec. 12.2.

28 Sec. 17.

3 DISTINCTIVE CHARACTERISTICS OF THE NATIONAL FRAMEWORK

3.1 Small Satellites

The definitions of 'operation' and 'guidance' in the Dutch Act effectively excluded nanosatellites from its scope of application, as these satellites can usually not be navigated, manoeuvred, or controlled in the sense of orbit correction.

This situation will change, because the technological capabilities of small satellites are developing at a very fast pace, and soon they will be manoeuvrable and thus will be 'guided' and/or 'operated' from the Netherlands. That means they will fall under the definition of space activities and the Netherlands will require them to be licenced to comply with its obligations under Article VI of the Outer Space Treaty and will register them in the national part of the registry.

Still, the government felt the need to pass an administrative measure, clarifying that satellites that are 'unguided' should also fall under the scope of the law and need to apply for a licence. Such an administrative measure was signed by the King on 19 January 2015 and entered into force on 1 July 2015. It made the Space Activities Act applicable also to unguided satellite missions. By a broader definition of the concepts of 'operation' and 'guidance', non-manoevrable small satellites henceforth fall under the scope of application of the Act.

One matter that had to be addressed was the limit of third-party liability insurance that would be required from small satellite operators. The coverage imposed on operators of geostationary satellites in Europe is generally €60 million euros, however this was considered prohibitive for operators of small satellites. The Explanatory Memorandum to the Decree argues that the annual premium for a liability insurance covering up to \$20 million in damage caused during in-orbit operations would be affordable for operators of small satellites.²⁹ This amount has since then been required from small satellite operators, with the understanding that the launch itself would need to be covered separately; launch insurance is usually included with the launch contract, though this would need to be verified during the audit.

3.2 Generic License, so far free of charge

As explained above, a license is granted for an activity, not for a satellite. Regular supervision audits take place and any developments such as deorbiting, new satellites, changes in orbit etc. as well as annual insurance certificates must be communicated to the regulator, but do not require a new license. Until now, licenses are free of charge. This is quite unique, and attractive for operators, especially those who launch and operate multiple satellites.

29 Explanatory Memorandum, Sec. 3. Available in English at <https://www.unoosa.org/oosa/en/ourwork/spacelaw/nationalspacelaw/index.html>.

3.3 Registration practice

The Netherlands has set up its national registry for objects launched into space, as required by the Registration Convention.³⁰ However, it has created two separate parts of this national registry: a national part and a UN part. The UN part only contains space objects for which the Netherlands considers itself the 'launching State'. According to the UN space treaties, registration must be carried out by a launching State.

A launching State is defined in the Registration Convention and the Liability Convention as a State which launches or procures the launching of a space object; or a State from whose territory or facility a space object is launched. There is no definition of 'procuring a launch', but many States accept the qualification of 'launching State' when one of their private entities purchases launch services from a foreign launch provider, and consequently they register the space object with the UN as per the Registration Convention.

A particularity of Dutch State practice is that the Netherlands does not consider itself as launching State for satellites launched abroad for Dutch private entities. Instead, its understanding of the term 'to procure a launch' is that this only applies when the government itself procures a launch for a governmental satellite, as was the case for the Brik II military satellite, launched in 2021.³¹ Therefore, the satellites of private operators licensed under the are not entered into the 'UN part' of the national registry, but in the 'national' part, which contains the space objects for which the Netherlands does not consider itself a launching State but does consider itself as the State responsible under Article VI of the Outer Space Treaty, resulting in an obligation to carry out authorization and supervision.

The Netherlands also does not register those satellites with the UN as per the Registration Convention. Rather, but provides information about objects entered into this national part of the register in accordance with Article XI of the Outer Space Treaty, which does not mention the launching State but refers to States 'conducting activities in outer space'. The use of this legal provision to provide information to the UN about space objects, without formal registration as a launching State is not unique; in the past it was used by the United Kingdom to register satellites on behalf of Inmarsat IGO.

30 See <https://www.agentschaptelecom.nl/documenten/publicaties/2019/10/31/register-ruimtevoorwerpen>.

31 See <https://www.isispace.nl/news/brik-ii-first-signals-received/>. Brik II will soon become the first object registered in the UN part of the Dutch register and will be notified to the UN under the Registration Convention, as a satellite for which the Netherlands is the launching State.

3.4 Application to future activities

The Act is quite unique in that it explicitly provides for the possibility of broadening its scope of application in the future by an Order in Council to include the organization of space activities by natural or juridical persons from within the Netherlands.³² The Explanatory Memorandum mentions 'space tourism' as an example³³, however this might equally apply to other future activities such as space resource utilisation.

4 CURRENT DEVELOPMENTS

As assessment is currently being carried out about the need to adapt the legal and regulatory framework in view of the adoption of the UNCOPUOS Guidelines on the Long-Term Sustainability of Space Activities of 2019, and more generally the robustness of the framework to address the plans of (future) licensees. The result of this assessment will be used as input for a foreseen amendment of the law, to make it more robust and flexible, so that it is more futureproof. Open norms will be strived for, which will be beneficial for operators. Any amendment or new law must go through the parliamentary process and public consultation via the *Staatscourant* (official Gazette). The process will start with informal one-on-one interviews with the current licensees, after which a draft will follow a public consultation process. It will take several years before a new law is adopted.

It is not unlikely that as part of this review, a decision to charge a fee will be taken, in view of changed circumstances in the space sector. However, this would likely be a one-time fee that is relatively low and serves only as a threshold. The expectation is that the concept of a 'license for the activity, not per satellite' will be maintained, and thus a future fee would also be modest and one-off for the activity. Moreover, the same fee would likely be charged for any kind of license under the Act.

Other topics that could be addressed in the future include space traffic management and space situational awareness.

A new national space policy is expected to be adopted before the next ESA Ministerial Council.

5 OUTLOOK AND CONCLUSIONS

The current legal and regulatory framework of the Netherlands framework is perceived positively both nationally and internationally. The framework is transparent, fair and reasonable. There is no undue burden on the

32 Sec. 2.2.b.

33 Sec. II, Art. 2.

industry, and requests are received regularly from companies considering establishing their activity in the Netherlands. The Netherlands is generally open to considering such requests, as long as there is a commitment for societal engagement, including employment and sustainability. Companies value the process and the legitimacy and credibility that a Dutch license provides to their activities nationally and internationally. This is reflected also in companies obtaining considerable investments after having been licensed.

A revision of the law can be expected in the coming years, to make the law more robust to the rapidly changing environment. However, the regulatory framework will undoubtedly remain focused on encouraging innovation in the space industry in a safe and secure environment, taking into account the interests of all stakeholders and the society at large.