

NewSpace: The Star Wars Soldier of the Future?

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Abstract

Space has been used to support terrestrial military activities since the dawn of the space age. Since 1991, satellite navigation, imagery and communications, have taken a central role in terrestrial wars across the globe. However, the 2022 Russo-Ukraine war highlighted a new emerging reality. The space arena has historically been state-driven, now advances in technologies are enabling a wide range of non-state actors entrance into the space sector. The so called NewSpace is quickly gaining in importance, not only in the commercial sector, but by supplying military services and potentially influencing the outcome of inter-state conflicts as well. This article will provide a quick overview of international space law, particularly Article VI of the Outer Space Treaty, and the law of state neutrality, and significantly whether the former influences the latter by prescribing that states carry international responsibility for national activities in outer space.

1. Introduction

The launch of the first artificial satellite, Soviet Sputnik-1, marked the beginning of the space age, dominated, due to the high costs involved, by the two superpowers of the time, the United States of America (hereinafter USA) and the Soviet Union (hereinafter SU). Since then the evolution of technology,¹ significantly decreased production and launch costs, enabling a wider array of actors to join in.² Coupled with the fact that non-state actors (hereinafter NSAs) have begun to rival or even transcend the financial and political capabilities of some states,³ NSAs are pushing humanity into an era of space commercialization where NSAs in space are becoming the norm rather than the exception.⁴

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1 Larsen, Solving the Space Debris Crisis, 83 J. Air L. & Com. 475 (2018), p. 481.

2 See BryceTech Reports.

3 Global governance – the rise of non-state actors, EEA Technical report, No. 4 (2011).

4 Sommariva, The Evolution of Space Economy: The Role of the Private Sector and the Challenges for Europe (2020), at: <https://www.ispionline.it/en/pubblicazione/evolution-space-economy-role-private-sector-and-challenges-europe-28604> (accessed 26.8.2022).

Until 2022 over 13.000 satellites are evaluated to have been launched into Earth's orbits,⁵ with majority today operated by NSAs.⁶ Overall launches are expected to increase tenfold in the short term,⁷ with NSAs becoming essential players with many states already depending on their services.⁸ Following economic sanctions levied against the Russian Federation, following its special military operation in Ukraine, dependability on the private sector is predicted to increase as the Russian space agency ROSCOSMOS terminated launch contracts,⁹ and production of the Ukrainian produced European Vega rockets was halted,¹⁰ making the European majority launcher the French NSA Ariannespace.

Originally the domain of states, space activities were regulated by the United Nations (hereinafter UN) in five treaties focusing on states.¹¹ The fundamental Outer Space Treaty (hereinafter OST), largely considered customary international law (hereinafter CIL),¹² reflects the realities of the Cold War, resulting in a general language that on the one hand permits the OST to regulate even the newest technologies, but on the other hand, being a treaty on principles rather than concrete rules, requires concretization for operational use.¹³ However, in international law under the so-called Lotus principle, when an obligation or a limitation of a state's freedom is formulated vaguely, it must be interpreted in favour of states.¹⁴ Presently relevant will be two aspects of the OST, both formulated broadly and therefore now subject to the Lotus principle,¹⁵ namely that the OST places

5 ESA, Space debris by the numbers, at: https://www.esa.int/Space_Safety/Space_Debris/Space_debris_by_the_numbers (accessed 26.8.2022).

6 SpaceX, OneWeb Satellites, Planet Labs Inc., Spire Globe Inc., Swarm technologies and Iridium Communications Inc., see *ibid*; BryceTech Report, Smallsats by the numbers 2022.

7 Larsen 2018, p. 481.

8 Fogo, A Legal Mirage: State Responsibility for Non-State Actor Interference with Space Systems, 55 *The Canadian Yearbook of International Law* (2018), pp. 185-187; SpaceX Commercial Crew Transportation Capability Contract signed between NASA and SpaceX, at: https://www.nasa.gov/sites/default/files/files/CCtCap_SpaceX_508.pdf (accessed 20.8.2022).

9 ESPI Brief No. 57.

10 UkraineInvest, Ukrainian Yuzhmash is developing engines for the Vega launch vehicle, at: <https://ukraineinvest.gov.ua/news/ukrainian-yuzhmash-is-developing-engines-for-the-vega-launch-vehicle/> (accessed 1.9.2022).

11 Hobe, *Space Law* (2019), pp. 40-51.

12 Lachs, *The Law of Outer Space* (2010), p. 82.

13 Sancin/Grünfeld/Ramuš Cvetkovič, *Contemporary Challenges of International Law-Making for Outer Space*, 138 *Pravnik* 1-2 (2021).

14 S.S. 'Lotus', *France v Turkey*, Judgment, Judgment No 9, PCIJ Series A No 10, 1927.

15 See Hobe 2019.

few constraints on military use of satellites,¹⁶ and that states carry international responsibility for national activities in outer space.¹⁷

Since the start of the space age, states have perfected the use of satellites for terrestrial military activities.¹⁸ Satellite services have become an integral part of warring efforts across the globe.¹⁹ The exact number of military satellites in orbit is unknown, but an evaluation put it at around 430 in 2021,²⁰ a significant increase from the evaluated 170 in 2001.²¹ This has been accompanied by the establishment of numerous space commands within armed forces of space-faring states,²² and an official designation of outer space as the fourth operational domain by NATO.²³ In 2022, however, a new emerging reality was highlighted when in February 2022, the Russian Federation launched a special military operation in Ukraine, beginning a new era of war in Europe, and re-awakening states to the supreme importance of satellites for state security and defense.²⁴ On February 26th Ukrainian vice prime minister Fedorov, fearing Russian cyberattacks would disable Ukrainian internet services, *tweeted* to Musk, CEO of NSA SpaceX, to supply Starlink internet services to Ukraine.²⁵ Musk replied almost

16 Space technology developed with primarily military uses in mind, considered invaluable to terrestrial military operations as *whoever will control outer space, will control the Earth*, see Houston Lay/Taubenfeld, *The law relating to activities of man in space* (1970).

17 Gerhard, Article VI, in: *Cologne Commentary on Space Law*, ed. Hobe/Schmidt-Tedd/Schrogl (2009).

18 See for example use of satellites in the 1991 Gulf War, see Anson/Cummings, *The first space war: The contribution of satellites to the gulf war*, 136 *RUSI Journal* (1991).

19 Military space applications encompass satellite navigation, communication, imagery, etc., see Hobe 2019. Examples include use of LANDSAT reconnaissance satellites, modified Gemini capsules, use of navigational satellites, satellite guidance for artillery systems, satellite imagery and telecommunications for intelligence-sharing during the Gulf War, drone-guidance during the so-called Drone wars in Yemen, Afganistan, Iraq, Tehren, etc. as drones (for example, armed UAVs such as Reaper drones flown by the USA military over Afganistan and Iraq) are operated with the help of satellites, which feed data and video feeds to human operators, various uses during the Turkey v. Syria, Nagorno-Karabakh war between Azerbaijan and Armenia.

20 UCS Satellite Database, at: <https://www.ucsusa.org/resources/satellite-database> (accessed 26.8.2022); Countries By Number Of Military Satellites, at: <https://www.worldatlas.com/articles/countries-by-number-of-military-satellites.html> (accessed 26.8.2022).

21 Pike, *The Military Uses of Outer Space*, SIPRIYb. (2002), p. 613.

22 Examples include France, Germany, UK, Italy, USA, Russian Federation, China, India.

23 NATO, *NATO's Approach to Outer Space* (2022), at: https://www.nato.int/cps/en/natohq/topics_175419.htm (accessed 31.8.2022).

24 See ESPI Brief No. 57.

25 For more see Miller/Scott/Bender, *UkraineX* (2022), at: <https://www.politico.eu/article/elon-musk-ukraine-starlink/> (accessed 31.8.2022).

immediately that the Starlink mega-constellation is now active in Ukraine and dispatched Starlink terminals to Ukraine.²⁶ Then head of ROSCOSMOS, Rogozin, intimated in answer that Starlink might no longer be purely civilian.²⁷ This high-profile intervention by the American NSA Space-X seemed to open floodgates and numerous other NSA, such as Maxar Technologies and ICEYE, have since provided assistance to Ukraine in the ongoing conflict,²⁸ while the Chinese NSA Spacety in 2023 allegedly supplied SAR-images to the Russian NSA Wagner Group.²⁹

The heightened engagement of NSA with the military space sector requires attention for four distinct reasons. Firstly, powerful NSA have been involved in questionable conduct beyond their national state's borders, often eluding responsibility.³⁰ Secondly, NSA were also used by states to achieve foreign policy goals.³¹ Thirdly, under the CIL of war, civilian infrastructure becomes a valid military target if it is used for effective military purposes, and its total or partial destruction would offer a definite military advantage to the opposing side.³² Finally, space services have already been used by NSA for military activity.³³

26 Ibid; see also Twitter.

27 Goines/Biller/Grunert, *The Russia-Ukraine War and the Space Domain* (2022), at: <https://lieber.westpoint.edu/russia-ukraine-war-space-domain/> (accessed 2.9.2022).

28 ICEYE Press Release from August 18, 2022; Maxar News Bureau, at: <https://www.maxar.com/news-bureau> (accessed 30.1.2023).

29 Jones, *U.S. sanctions Chinese satellite firm for allegedly supplying SAR imagery to Russia's Wagner Group* (2023), at: <https://spacenews.com/u-s-sanctions-chinese-satellite-firm-for-allegedly-supplying-sar-imagery-to-russias-wagner-group/#> (accessed 31.1.2023).

30 Zerk, *Corporate liability for gross human rights abuses - A report prepared for the Office of the UN High Commissioner for Human Rights* (2012).

31 See *Military and Paramilitary Activities in and Around Nicaragua (Nicaragua v. USA) ICJ Judgement* (1986); Gohd, *Hundreds gather at SpaceX headquarters to protest Turkish satellite launch* (2020), at: <https://www.space.com/spacex-turksat-5a-armenian-protests> (accessed 29.1.2023); The Institute for Economics & Peace, *Ukraine Russia Crisis: Terrorism Briefing* (2022).

32 ICRC, *Practice relating to Rule 10*, at: https://ihl-databases.icrc.org/customary-ihl/eng/docs/v2_rul_rule10_sectiona (accessed 30.8.2022); ICRC, *Rule 8*, at: https://ihl-databases.icrc.org/customary-ihl/eng/docs/v1_rul_rule8 (accessed 30.8.2022); *Commentary of 1987, Article 52 (Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I) 1977)*.

33 In the 1980s-1990s, belligerent factions utilised INMARSAT satellite transponder (Lyall/Larsen, *Space Law: A Treatise* (2009), pp. 524-525), while in 2007 the Liberation Tigers of Tamil Eelam pirated an Intersat satellite transponder signal to broadcast propaganda transmissions (Fogo, p.182).

2. De iure Analysis

For practical reasons, the article will restrict itself to the question of whether NSA military space activity can impact the law on state neutrality, analyzing first the law of state neutrality and second international space law.

2.1. State Neutrality

Historically states such as Switzerland, Sweden, the Vatican, and the non-aligned (during the Cold War era), have chosen not to take sides in armed conflicts and instead acted as neutral parties able to act as mediators.³⁴ Deemed necessary to localize war and minimize its impact on international commerce,³⁵ relevant CIL has been codified in the 1907 Hague Conferences. Discussed will be the 1907 Hague Convention No. V on respecting the Rights and Duties of Neutral Powers and Persons in Case of War on Land (hereinafter Hague V). Applicability to space activities is assumed following the decision of the International Court of Justice (hereinafter ICJ) that principles of neutrality are “*applicable to all international armed conflict whatever type of weapons might be used.*”³⁶

Pursuant to Hague V a neutral state (hereinafter *neutral*), *i.e. state not taking sides in an international armed conflict*, has both rights and duties, the former being inviolability of its territory and the latter a duty that it must not allow its territory to be used in aid of a belligerent’s, *i.e. states that are parties to an international armed conflict and their nationals*, military activity.³⁷

The first relevant provisions regard *territory and persons*. *Neutral territory* has been interpreted as comprising the *land territory of a neutral, its territorial waters and airspace*, but excluding property under quasi-territorial jurisdiction of a state, like ships and aircraft.³⁸ *Neutral persons* are defined as *nationals³⁹ of neutrals*, who lose neutral status if they enter hostilities on side of a belligerent.⁴⁰ Hague V, Article 6 for example reads, “*The responsibility of a neutral Power is not engaged by the fact of persons*

34 The case for neutrality (2022), at: <https://www.gisreportsonline.com/r/neutrality/> (accessed 18.1.2023).

35 Williams, *Neutrality in Modern Armed Conflicts: A Survey of the Developing Law*, 90 *Mil. L. Rev.* 9 (1980).

36 *Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996*, p. 226, para 89.

37 Hague V, Arts. 1-5.

38 These are subject to 1907 Hague Convention No. XIII concerning the Rights and Duties of Neutral Powers in Naval War and Hague Rules of Aerial Warfare; see also Tucker, *The Law of War and Neutrality at Sea*, pp. 354-55.

39 Generally, counted under nationals are both natural and juridical persons, see Shaw, *International Law* (2021).

40 ICRC, *Neutrality*, at: https://www.icrc.org/en/doc/assets/files/other/law8_final.pdf (accessed 27.1.2023).

crossing the frontier separately to offer their services to one of the belligerents.” This indicates that the Hague V distinguished between acts of a state and its nationals.

Second relevant basket of provisions are those detailing export and telecommunication installations. Regarding export, Article 7 decrees, “A neutral Power is not called upon to prevent the export or transport, on behalf of one or other of the belligerents, of arms, munitions of war, or, in general, of anything which can be of use to an army or a fleet.” Following ICJ jurisprudence on evolution of the law,⁴¹ this could include satellite components and similar items.⁴² Hague V, Article 8 in turn states, “A neutral Power is not called upon to forbid or restrict the use on behalf of the belligerents of telegraph or telephone cables or of wireless telegraphy apparatus belonging to it or to companies or private individuals.” Article 9 adds a duty of non-discrimination, stating: “Every measure of restriction or prohibition taken by a neutral Power in regard to the matters referred to in Articles 7 and 8 must be impartially applied by it to both belligerents.”

This leads to a duty of *belligerents* to not *erect or continue to use telecommunications installations on the territory of a neutral* for military purposes, *a contrario*, permitting the use of existing non-military telecommunications to which they would have access to under normal circumstances, even renting of data communication lines of a military nature and access from such lines to satellite communications.⁴³ However, as the neutral is not required to punish any acts in violation of its neutrality or to dictate the conduct of its nationals,⁴⁴ it seems that Hague V distinguishes between state and NSA conduct, and NSA conduct does not automatically impact neutrality.

2.2. International Space Law

Considering that the law of neutrality requires acts from the territory of state, it is necessary to verify the legal status of satellites. OST Article VIII dictates that the state that registers an object launched into outer space on its national register retains jurisdiction and control over it and any personnel thereof. Jurisdiction, as a central aspect of state sovereignty,⁴⁵ entitles the state of

41 *Dispute regarding Navigational and Related Rights (Costa Rica v. Nicaragua)*, Judgment, I.C.J. Reports 2009.

42 See Jarman, The law of neutrality in outer space, Master Thesis, University of McGill (2008) for detailed analysis.

43 ICRC, Neutrality.

44 Hague V, Arts. 5-9.

45 Schmidt-Tedd/Mick, Article VIII, in: Cologne Commentary on Space Law Volume I, ed. Hobe/Schmidt-Tedd/Schrogl (2009), pp. 156-160.

registry to enact national laws for and on board of a registered object,⁴⁶ determine its function and course,⁴⁷ effectively rendering space objects quasi-territorial in nature, akin to ships and aircraft.⁴⁸ As such they do not for the moment seem to constitute neutral territory, but would rather be treated analogous to ships and aircraft. Any military support from a satellite therefore wouldn't directly violate state neutrality. Additionally, as outer space is deemed a global common, i.e. an area beyond territorial limits,⁴⁹ neither could placement of a satellite by a belligerent violate *neutral territory*. Logically then, considering satellites are self-contained communication systems, that can receive and transmit signals from and to Earth stations,⁵⁰ this would mean that in event that a ground station on the territory of a neutral would be necessary for the functioning of a satellite, neutrality might be compromised, but, in event that a local device on the territory of a belligerent would suffice, it is unlikely that neutrality would be threatened. Assuming that a ground station on neutral territory would not be necessary, OST Article VI will need to be examined before making a determination on whether NSA conduct can impact neutrality.

2.2.1. Scope and effect of Article VI

Article VI of the OST reads:

“States (...) shall bear international responsibility for national activities in outer space, (...), whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space, (...), shall require authorization and continuing supervision by the appropriate State Party to the Treaty.”

Article VI was conceived as a compromise between the SU, who opposed the involvement of NSA in space activities, and the USA who championed it, ultimately permitting involvement of non-governmental actors in outer space as long as these are authorized and supervised by a state.⁵¹ However, it did not elucidate any of terms it employed or how far-reaching its effects are.

46 Hobe, The Legal Framework for a Lunar Base Lex Data and Lex Ferenda, in: Outlook on Space Law over the Next 30 Years, ed. Lafferranderie/Crowther (1997), pp. 135-143.

47 See Lachs 2010, pp. 65-74.

48 See Cheng, Studies in International Space Law (1997).

49 Hobe 2019, pp. 55-65.

50 Britannica, How satellites work, at: <https://www.britannica.com/technology/satellite-communication/How-satellites-work> (accessed 31.1.2023).

51 Gerhard 2009.

Two distinct views consequently emerged, with the first championing the opinion that Article VI only obligates states to a due diligence obligation,⁵² making a state responsible only for its own actions and omissions, meaning it is held internationally responsible only if it fails to authorize and supervise an activity.⁵³ In this case attribution of NSA conduct to states would continue to be governed by CIL principles enshrined in the Articles on State Responsibility (hereinafter ARSIWA) whereby states are held responsible only for NSA conduct under state direction or control, or conduct acknowledged or adopted by a state.⁵⁴ Following this view, actions of NSAs would not impact state neutrality unless directed by states or conduct acknowledged as attributable.

The second view, which enjoys wider support in doctrine,⁵⁵ promulgates the opinion that Article VI establishes special rules on attribution of non-governmental conduct to states.⁵⁶ Following, Article VI would act as *lex specialis* to the more general rules on attribution enshrined in ARSIWA, overriding the latter and making all NSA conduct in outer space automatically attributable to states.⁵⁷ Considering the intention of the drafters, this could be argued as appropriate, since it would intensify scrutiny over private space activities potentially required due to the ultra-hazardous nature of space activities, which could justify stricter rules on attributability.⁵⁸ Following such interpretation, NSA conduct could potentially impact neutrality. However, the effect of Article VI remains controversial.⁵⁹

52 Arangio-Ruiz, *State Responsibility Revisited: The Factual Nature of the Attribution of Conduct to the State* (2017), pp. 126-127; Marchisio, *Il Trattato sullo spazio: passato, presente e futuro* (2018), p. 201.

53 Ramuš Cvetkovič, *Space Law as Lex Specialis to International Law*, Master Thesis University of Ljubljana 2021, p. 115.

54 *Articles on Responsibility of States for Internationally Wrongful Acts (ARSIWA)*, UN Doc. A/RES/56/83(2001); Crawford, *State Responsibility* (2013).

55 Ramuš Cvetkovič 2021, p. 122.

56 Cheng, *Article VI of the 1967 Space Treaty Revisited: 'International Responsibility', 'National Activities' and 'The Appropriate State'* (1998), p. 14; von der Dunk, *The Origins of Authorisation: Article VI of the Outer Space Treaty and International Space Law, Space, Cyber, and Telecommunications Law Program Faculty Publications* 69 (2011), pp. 3-5.

57 Hobe/Pellander, *Space Law: A "Self-Contained Regime"?* (2012), p. 9; Ramuš Cvetkovič 2021, p. 122.

58 Lachs 2010, p. 113; Shelton, *Guide to International Environmental Law* (2007), p. 24.

59 Nasu, *The Eye in Space* (2022), available at: <https://lieber.westpoint.edu/eye-space-iceyes-sar-satellites-law-of-war/> (accessed 31.1.2023).

2.2.2. **National Activities, Authorisation and Continuous Supervision**

Firstly, existing space law treaties provide no definition of national space activity. Following customary interpretational rules, the ordinary meaning of *national* usually refers to something typical of one country or its people.⁶⁰ Nationality of natural persons is usually uncomplicated, owing to place of birth or nationality of parents. In determining nationality of legal persons, especially transnational companies, the ICJ relied on incorporation papers or location of headquarters.⁶¹ Activities of nationals, whether natural or juridical persons incorporated under a certain national law, could then constitute national activities within Article VI.

Secondly, in response to Article VI, majority of space faring states have adopted national space acts, which have become relevant state practice, as the evolution of space law has transitioned from international hard law instruments to international soft law instruments and national space laws.⁶² These usually restrict their scope to activities on its territory, or other areas under its jurisdiction, or to activities by its nationals, natural as well as juridical, inside or outside state territory.⁶³ This would confirm interpretation of national activities as those of nationals, natural and juridical, and expand it to activities on its territory or under its jurisdiction.

Thirdly, Article VI does not specify the scope of authorization and continuous supervision, neither does it define *the appropriate state* that must authorize and supervise. Generally, appropriate state has been viewed to mean the responsible state tying it in with the first sentence of Article VI and national activities.⁶⁴ Consequently, several have been proposed as the responsible state;⁶⁵ 1) the State of Registry, because it has jurisdiction over an object launched pursuant to Article VIII of the OST,⁶⁶ and any supervision presupposes jurisdiction;⁶⁷ 2) the national state as states should be responsible for its nationals following the dictum *responsible for national activities*;⁶⁸ 3) any state involved with a space activity due to the hazardous

60 Cambridge Dictionary, at: <https://dictionary.cambridge.org/dictionary/english/national> (accessed 30.1.2023).

61 *Barcelona Traction, Light and Power Company, Limited (Belgium v. Spain)* ICJ Judgement (1962).

62 See Sancin/Grünfeld/Ramuš Cvetkovič 2021.

63 See for example national space acts of Slovenia, USA, UK, Finland, Australia, Austria, France, Italy, Sweden, South Africa, Russian Federation.

64 Gerhard 2009, p. 117.

65 Von der Dunk, Article VI of the Outer Space Treaty 'in the European Context', Space and Telecommunications Law Program Faculty Publications (2008).

66 Hobe, *Die rechtlichen Rahmenbedingungen der wirtschaftlichen Nutzung des Weltraums* (1992), p. 158.

67 Gerhard 2009, p. 114; Lachs 2010.

68 Böckstiegel, *Handbuch des Weltraumrechts* (1992), p. 286; Gorove, *Liability in space law*, XIX Annals of Air and Space Law 373 (1993), p. 377.

nature of space activities;⁶⁹ 4) or (in majority opinion) the state that has some type of jurisdiction over the NSA or the activity.⁷⁰ The latter has proven true in majority cases; for example, in the case of Starlink, the USA has authorised the launch of Starlink satellites and subsequently registered them, while the Brazilian telecommunications authority authorized the supply of Starlink broadband internet on Brazilian territory.⁷¹ In 2012, IntelSat, a USA/Luxembourg company, contracted with the Australian Defense Forces to deliver communications payload, intended for military communications, aboard an IntelSat satellite into the geostationary orbit, whereby the USA authorized the IntelSat-22 satellite and Australia the payload.⁷²

It therefore seems somewhat unclear which acts need to be authorised and continuously supervised, or by which state. With regards to authorization, states normally address the launch, operation, and return of a space object,⁷³ whereby operation is to do with the navigation of an object,⁷⁴ rather than the services it intends to supply. It is generally concerned with safety of operation,⁷⁵ rather than intended business or customers. The information to be provided for authorization includes, but is not limited to, the owner, orbital parameters, launch details, general function of object.⁷⁶ With regards to supervision, national space acts usually provide for continuous information sharing or inspection of the operator's business, especially if the activity is to be modified or terminated.⁷⁷ However, the term *modification* is usually not explained, making it difficult to conclude anything concrete with regard to the scope *continuous supervision*.

Consequently, if Article VI would be interpreted as special attribution rules equaling NSA activity with state activity, SpaceX and ICEYE conduct in Ukraine could implicate USA and Finland, respectively, but possibly also a variety of other states (at least to some degree).

69 This has been proposed to involve as many states as possible, see Gerhard 2009, p. 113.

70 Ibid, pp. 112-117; von der Dunk (2011).

71 Motoryn, Dear Mr. Musk (2022), at: <https://www.brasildefato.com.br/2022/03/25/bolsonaro-government-interfered-to-authorize-elon-musk-s-company-in-brazil> (accessed 31.1.2023).

72 United States FCC, *Intelsat-22 Grant of Application for Satellite Space Systems Authorization with Attachment to Grant*, IBFS File No. SAT-LOA-20110929-00193 (2012) Attachment, p. 1.

73 See for example national space acts of Australia, Austria, Belgium, Slovenia.

74 See for example the Belgian Space Act.

75 Supra 72.

76 Ibid.

77 Ibid.

3. Hague V vs. Outer Space Treaty

In cases of a conflict of norms, the principle of *lex specialis derogat legi generali*, i.e. a more special rule claims priority over a more general one, applies, evaluated on a case to case basis.⁷⁸ In cases of treaties clashing with CIL, the former normally prevails,⁷⁹ with the latter serving as interpretational guideline.⁸⁰ However, in the event of a treaty clashing with another treaty, it is more complicated. In the present case, Hague V distinguishes between conduct of NSA and states, similar to the ARSIWA, however, while it has been evaluated that OST Article VI might be *lex specialis* to ARSIWA, it is not as clear that it would be *lex specialis* to Hague V as Hague V specially regulates neutrality in an armed conflict. Even in the event that it would be determined that OST Article VI creates automatic attribution of NSA conduct, it might therefore be that Hague V Article 6 negates this effect, creating a similar effect to circumstances precluding wrongfulness from ARSIWA, whereby an action might be a violation of international law, but does not entail international responsibility due to the existence of special circumstances. In this manner the two treaties could coexist harmoniously. This approach might evolve in practice.⁸¹ Should it, however, be that OST Article VI is the more specialized due to a special nature of space activities, and as hypothetically it would be an issue of state responsibility NSA conduct could impact state neutrality and should be addressed by the international community sooner rather than later.⁸²

78 Simma/Pulkowski, *Of Planets and the Universe: Self-contained Regimes in International Law* (2006), p. 487; U.N. GAOR, 61st Sess., Supp. No. 10, Rep of the International Law Commission, para. 251, U.N. Doc. A/61/10 (2006) [Fragmentation Report], para. 40.

79 Gabčíkovo-Nagymaros Project (Hungary/Slovakia), Judgment, 1. C. J. Reports 1997, para. 132.

80 *Military and Paramilitary Activities*, para. 179.

81 See for example the Danish manual on international operations.

82 Nasu 2022.

4. Conclusion: can NSA impact state neutrality?

The answer to the title question remains unresolved. Various studies of the topic have already been done, approaching it from different angles and arriving at different results.⁸³ However, all seem to agree that the law of neutrality is pragmatic in nature, subject to a dynamic and flexible interpretation, and in practice heavily influenced by the power-positions between states.⁸⁴ Contemporary neutrality laws have already been impacted with the adoption of the UN Charter, which outlawed war as a tool of foreign policy, and which takes precedence in all matters regulated by it.⁸⁵ For example, any action mandated by the UN Security Council or under collective security arrangements will influence neutrality,⁸⁶ but would likely not make a neutral a party to a conflict, subject however to the extent of the assistance.⁸⁷ Additionally, the evolution of technology, emergence of hybrid wars, weaponization of economic sanctions and the ascend of so-called non-belligerency⁸⁸ status are quickly changing the neutrality landscape.⁸⁹ Accordingly, existing state practice with regard to neutrality will be of limited use. For example, historical policy of the USA to assume control of all private wireless stations and sending of coded messages,⁹⁰ is not feasible anymore, due to the sheer volume of data transmitted by satellites, and the wide array of recipients whose rights might be violated as a result.⁹¹ Nonetheless, should a satellite registered or authorized by a neutral be targeted, it must be highlighted that in the global commons a duty of due

83 Ibid; Jarman 2008; Brown, Ukraine Symposium – The Risk of Commercial Actors in Outer Space Drawing States into Armed Conflict (2022), at: <https://lieber.westpoint.edu/commercial-actors-outer-space-armed-conflict/> (accessed 31.1.2023); von Heinegg, Neutrality and Outer Space, 93 INT'L. L. STUD. 526 (2017); Verplaetse, The Law of War and Neutrality in Outer Space, Nordic Journal of International Law 1959; Gutzman, State Responsibility for Non-State Actors in Times of War: Article VI of the Outer Space Treaty and the Law of Neutrality, Master Thesis University of McGill (2018).

84 Taubenfeld, International Actions and Neutrality 57 AJIL 377 (1953); Williams 1980, p. 20.

85 UN Charter, Art. 103.

86 Ibid, Chapter VII, Art. 52; ICRC, Neutrality.

87 Annotated Supplement to The Commander's Handbook on the Law of Naval Operations, ed. Thomas/Duncan (1999), pp. 369-370.

88 Non-belligerency, meaning a non-participating state to a conflict provides assistance to a victim state – consequence of UN Charter outlawing war is that contemporary situations necessarily have a victim and an aggressor state – however, the legal validity of this status is unclear, see Jarman 2008.

89 Case for neutrality 2022.

90 Colombos, The International Law of the Sea (1967), p. 579.

91 Jarman 2008, p. 88.

regard exists⁹² and a belligerent contemplating such action must analyse effects on civilian population to determine whether such effects would be excessive in relation to the anticipated military advantage.⁹³ Considering that satellites, positioned in a global commons, are of crucial importance to modern life across the globe,⁹⁴ with numerous states often utilizing a satellite or constellation (examples include Starlink and ICEYE), it might be that rather than an attack, a form of localized signal jamming might evolve as an adapted blockade right of belligerents.⁹⁵

In conclusion, this article provided a brief overview of a topic that will likely present an interesting topic for future discussions. The answer to how OST Article VI impacts state neutrality is a multifaceted one, and will require elucidation as NSA space activity increases. At first glance it may present no issues, but the different approaches adopted in practice, the scarcity of available information and a myriad of doctrinal opinions illustrates that all is perhaps not clear. Ultimately, however, it will be the agreement of states, as still the primary subjects and creators of international law, that will set any future course.

92 Roach, *The Law of Naval Warfare at the Turn of Two Centuries*, 94 A.J.I.L. 64 (2000) 68; see also OST, Article IX.

93 Protocol I to the Geneva Conventions, Arts. 51.5(b), 57.2(a)(iii), 57.2(b); San Remo Manual, para. 102(b); A historical example is the often done, but controversial cutting of submarine cables connecting belligerent's territory to neutral territory, which should only be done in cases of absolute necessity, see Regulations on land warfare (attached to Hague IV), Art. 54; *British-American Claims Arbitration Tribunal* (Award, 9 November 1923), reprinted in 18 A.J.I.L. 835, 842 (1924); Tucker, p. 359.

94 See ESPI Reports; see also Sancin/Grünfeld/Ramuš Cvetkovič.

95 Jarman 2008, pp. 89-112; Nasu 2022.