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The Issue of National Security in the Context of National Space Legislation – Comparing European and Non-European States

F. G. von der Dunk

1. Introduction

The inherent dual-use character of most, if not all space activities cannot fail to exercise a considerable impact also on the involvement of private actors in space. Much technology used for and/or developed by private space activities may potentially be put at the use of those wishing to change a particular political status quo, and likewise the material results of some private space activities may, consciously or inadvertently, come to be used against the national security interests of one state or another. Hence, issues of national security will likely also have an effect on the issue of authorisation of such actors on the national level. In some cases, that has led to quite general comprehensive regimes being developed for all international trade and trade-related activities concerning sensitive dual-use items, alternatively very specific regimes dealing with the security-related aspects of high-resolution remote-sensing operations involving private actors.¹

In addition, however, the increasing implementation of a general approach to the licensing of private space operators with a view to (amongst others) safety and liability-related aspects also raises the issue as to what extent implementation measures address, more or less specifically, the national security- and defence-related aspects of the licensed operations concerned.

Thus, the present contribution will provide a survey of existing national space legislation—defined for the purpose as national statutes addressing in a general and comprehensive fashion private space activities falling within the jurisdiction of the state concerned—as to how reference has been made to such concerns. “Europe” being defined for the moment as the member states of the European Union and/or the European Space Agency

(ESA),² this would mean addressing on the one hand the European states Norway, Sweden, the United Kingdom, Belgium, the Netherlands and France, and—in order to provide some larger comparative perspective—on the other hand the United States, the Russian Federation, South Africa, the Ukraine, Australia, Brazil, South Korea and Canada.³

2. National Space Law in Europe and the National Security Issue

2.1. Norway

Norway, not an EU member yet member state of ESA very much from the beginning, was the first state drafting a national law to deal with the prospect of private parties undertaking space activities, notably launch activities, by means of the Act on launching objects from Norwegian territory into outer space.⁴ Indeed the Norwegian Act provided for a requirement to obtain permission from the Norwegian government for anyone launching an object into outer space from Norwegian territory, ships or aircraft, or “[a]reas that are not subject to the sovereignty of any state, when the launching is undertaken by a Norwegian citizen or person with habitual residence in Norway.”⁵ Launching, of course, is the category of space activities most directly associated with security issues in view of the near-impossibility to distinguish between launch vehicles and missiles.

Predating the entry into force of the Liability Convention⁶ by some three years and with only the Outer Space Treaty⁷ and Rescue Agreement⁸ in force, the Norwegian draftsmen were unable to provide much detail on the requirements to be fulfilled in order to acquire a license, including apparently requirements regarding security: “[c]ertain terms can be set for such permission as described” in the paragraph cited above, and the authorities “can issue regulations on control etc. of activities as described” in that same paragraph.⁹ Whilst such “terms” could obviously include security- and defence-related interests of the Norwegian government, to be inserted in the implementing regulations referred to, the Act itself did not provide any further clue as to the extent that would, or should, actually happen in any given case.

2.2. Sweden

Norwegian’s Scandinavian neighbour Sweden followed suit with national space legislation in 1982.¹⁰ All activities in outer space conducted from Sweden or by Swedish natural or legal persons require a license under the Swedish Act.¹¹ In terms of conditions attached to such a license, the Act is not much more specific than the Norwegian Act was: “A licence may be restricted in the way deemed appropriate with regard to the circumstances. It may also be subject to required conditions with regard to control of the activity or for other reasons.”¹² Disregarding the fundamental requirement to obtain a license in undertaking space activities covered by the Act carries with it a fine or a maximum penalty of imprisonment of one year.¹³ The Act, however, does not use the terms “security” or “defence,” or indeed any other term relevant from the current perspective.

The ensuing Decree, providing the National Board for Space Activities (NBSA) with the licensing authority under the Act on behalf of the Swedish government, offers a little more detail. It calls upon the NBSA to consult with other national ministries or authorities “affected by the application” as necessary for the proper handling of the license request, and

while only the telecommunications administration is mentioned explicitly here, of course it would make sense to consult with the Swedish Ministry of Defence in case a license application raises issues of national security.¹⁴ Again, however, no specific reference to such issues is found.

One should be aware in this context that Sweden for a long time was taking a relatively neutral stance in the political Cold-War division of Europe between the NATO allies and the Soviet Union's satellite states, including a vocal, sometimes almost anti-military stance in international politics. Partly for such reasons, for example accession to the European Union was only politically feasible after the end of the Cold War—and ultimately took place in 1995. Such a background may well be largely responsible for the omission of any specific reference to defence or security in the Swedish case, lest suspicions would arise that Swedish space activities might somehow have a military or security-related aspect, connotation, or even purpose.

In addition, the most immediately relevant space activities to be undertaken from Sweden would be launches from the Esrange facilities in Kiruna. These, however, were generally undertaken in cooperation with (or even simply by) the European Space Agency, which under its Convention was formally required to undertake its space activities “exclusively for peaceful purposes.”¹⁵ This background may well have conspired to cause any explicit reference to security concerns in terms of space activities to remain absent from the Act and Decree.

2.3. The United Kingdom

The United Kingdom promulgated its Outer Space Act in 1986.¹⁶ This Act is the first one in Europe making explicit reference to defence- and security-related aspects in the context of the license for space activities, which is mandatory for citizens of the United Kingdom.¹⁷ Notably, the Secretary of State, the UK Member of Cabinet responsible for licenses (and having delegated that responsibility to the UK Space Agency, UKSA) “shall not grant a licence unless he is satisfied that the activities authorised by the licence (. . .) will not impair the national security of the United Kingdom.”¹⁸

Sections 4 and 5 provide further detailed authority to investigate and monitor a potential licensee to determine whether the licensing requirements would actually be complied with. This comprises amongst others the possibility to include in a license “in particular (. . .) conditions (. . .) requiring the licensee to conduct his operations in such a way as to (. . .) preserve the national security of the United Kingdom.”¹⁹ Licenses granted may also be revoked, varied, or suspended, as necessary, to protect these interests.²⁰ Section 8 in addition provides the authorities with quite far-reaching competences with regard to licensees acting in violation of the license requirements, which include the option to “give such directions as appear to him necessary to secure the cessation of the activity or the disposal of any space object.”²¹ Section 12 finally details the procedures according to which violators would be sanctioned.

In short: the Outer Space Act, though in itself still relatively succinct, provides the UK authorities with sufficient and sufficiently explicit and comprehensive legal instruments to ensure that also the particular security-related interests of the United Kingdom will be duly protected in the course of any private space activities licensed under the Act.

2.4. *Belgium*

After the United Kingdom had enunciated its Act in 1986, it took almost twenty years for the next European country to follow suit: Belgium enacted its national space law as late as 2005.²² It provided for an obligation to obtain an authorisation for anyone undertaking space activities from within Belgian territorial (including quasi-territorial) jurisdiction, as well as in certain cases for Belgian citizens conducting such activities elsewhere.²³ Those activities included all activities coming to mind as being potentially security-sensitive: launching, satellite navigations, and satellite remote sensing.²⁴

In order to be granted such an authorisation, amongst others conditions ensuring due protection of the “strategic (. . .) interests of the Belgian State” could be imposed by the Belgian authorities, but the discretion to do so lies with the authorities—at least under the Law itself.²⁵

Articles 7 through 12 provide for an elaborate set of rules and procedures to provide the licensing authority with the legal instruments to enforce the requirements of the Law and any license granted under it, which include for example the competence, if necessary, to “take action to deorbit or destroy the space object.”²⁶ Though there is no direct reference to security or defence interests, it may be safely assumed that once the decision would indeed be made in a given case to include conditions protecting the aforementioned “strategic interests” of Belgium—these instruments could and would be used as required in this context.

2.5. *The Netherlands*

The next European country of concern is the Netherlands, which has a national space law in place since 2007.²⁷ As with the other national space laws discussed, pride of place belongs to a licensing requirement in regard of private space activities, imposed in this case upon those performing space activities in or from within the Netherlands, Dutch ships, or aircraft; an obligation which can be extended moreover to certain space activities performed by Dutch nationals elsewhere or organised from within the Netherlands, even if actually undertaken outside.²⁸ Again, such private space activities include all activities relevant from a security perspective.²⁹

Amongst the restrictions that can be imposed on licensees by means of additional requirements, those targeted at “protection of the public order” and, even more to the point, protecting the “security of the State” are explicitly mentioned.³⁰ Reference to security issues is further made in the context of potential disasters:

If an incident occurs or has occurred that may jeopardize (. . .) national security (. . .) the licence-holder shall, without delay, take the steps that can reasonably be expected of it in order to prevent the consequences of that event or, where those consequences cannot be prevented, to limit and rectify them as far as possible.³¹

As in the case of Belgium, the ultimate decision to include relevant requirements in a particular regulation or license is to be made by the Dutch authorities; they are not included automatically as such. However, the responsible Minister *has* to refuse the grant of a license if, in his view, “facts or circumstances suggest that (. . .) the maintenance of public order or

national security might be jeopardized by issuing the licence,” which may considerably mitigate the lack of a default requirement to comply with the national security interests of the Netherlands.³²

In line with the general approach to licenses prevailing under national space laws, also the Dutch Law provides the authorities with various procedural instruments to ensure proper application of its licensing obligations with a view to the Dutch national security-related interests, such as the competences to revoke a license after it has been granted, to enforce compliance by means of further administrative orders, and to sanction violations of the terms of the license and/or the Law.³³

To explain background and reasons behind the establishment of the Law, as is required under Dutch law an Explanatory Memorandum had accompanied its promulgation.³⁴ It confirmed the increasing involvement of private actors also in the Dutch context, both present and prospective, as presenting the most important reason behind the establishment of the Law, together with the need to implement the main international space treaties in that respect. In doing so, however, it barely touches upon security- or defence-related issues: the main focus is indeed on implementing the requirements and consequences of Articles VI, VII, and VIII of the Outer Space Treaty, the Liability Convention, and the Registration Convention.³⁵

No specific reference is made therefore by the Explanatory Memorandum to security or defence-related issues, and/or to a role for example of the Dutch Ministry of Defence in being privy to the licensing process executed by the Ministry of Economic Affairs. Not even in the discussion on Section 3, as the Section of the Law where the security of the Netherlands is explicitly included in potential further regulations or the licenses itself, is any specific explanation or elaboration given in this respect.³⁶ The discussion of Section 6, providing for the grounds for refusal of a license, does only confirm that the likelihood that the grant of a license might “jeopardize (. . .) national security” may present such a ground, without going into any further details.³⁷

The framework provisions of the Law have meanwhile been elaborated to some extent by means of an Order Concerning Licence Applications for the Performance of Space Activities and the Registration of Space Objects.³⁸ This Order details the procedure relevant to applications for licenses, including the information to be provided by the prospective licensee, but it focuses almost exclusively on safety-related and financial issues with a view in particular to handle international liability and attendant insurance consequences of the licensee’s future space activities.

Only the requirement to provide “as complete a description as possible of the space activities in question” indirectly allows the authorities to judge to some extent whether those space activities may actually be harmful to Dutch national security interests.³⁹ Of course, if such information does not completely satisfy the authorities, or would not allow them a reasonably solid judgement, more information could be requested on an informal level. Still, whilst normally speaking private actors interested in space activities in the Dutch context might not be expected to involve themselves in such activities as directly presenting a risk of interference with national security interests,⁴⁰ these succinct provisions might not turn out to be sufficient—for example in cases where foreign remote-sensing operators might be looking for a license under the Dutch Law.

2.6. France

In spite of its long-standing involvement in space activities also through the private sector (Arianespace and SpotImage both being French companies) France was the last European country so far to draft a comprehensive national space law, in 2008.⁴¹ There were a number of reasons for this absence of a perceived need for a national law so far, one of them being that both the aforementioned companies had the French governmental space agency CNES as the largest single shareholder, allowing for direct control of all their activities by the French government to the extent it could be held responsible and liable under the international space treaties.⁴² In addition, SpotImage was essentially marketing and selling remote-sensing data from the SPOT system, which was itself directly operated by the French government (with minor participation of some other European states).

With Arianespace, a private company offering launch services on a commercial basis to a global market, the situation was a bit more complex, due to the fundamental involvement of the European Space Agency (ESA) and other ESA member states beside France in the Ariane launcher development programmes.⁴³ Thus, the legal framework within which Arianespace was to operate consisted of a triptych of legal documents, essentially acting *in lieu* of a national authorisation process that might otherwise have been required.

These documents were the Arianespace Declaration of 1980 (regularly renewed since),⁴⁴ the Arianespace Convention concluded between ESA and Arianespace⁴⁵ and the CSG Agreement.⁴⁶ Apart from regulating such issues as liability and insurance,⁴⁷ a few provisions referred to the potential involvement of Arianespace in issues pertinent to *international* peace and security. Thus, for example the Arianespace Declaration required the company to operate (only) for “peaceful purposes,”⁴⁸ further to the obligation resting upon ESA itself to undertake its activities “exclusively for peaceful purposes.”⁴⁹ It should be surmised, given the specific context of the Ariane programme as involving a host of European states, that such a requirement would likely also exclude any activity detrimental to the *national* security interests of France and the other ESA member states involved in the programme and Arianespace’s follow-on activities of building, marketing, and selling the services of Ariane launch vehicles.

As to those national security issues more specifically, however, there was no clause making explicit reference to them. Participating states could of course dissociate themselves from a particular launch, *inter alia* in case they felt their security interests would be at stake.⁵⁰ Yet, control of the company’s activities through the CNES shareholding and the general obligations to operate within the framework set by ESA and the member states, including notably France, were apparently already considered to solve any concerns on such issues.

Once France decided to draft a national space law, as a more fundamental and comprehensive tool to control amongst others Arianespace’s activities, however, also these security- and defence-related issues were back on the table. They were to be dealt with, consequently, as part of the process of authorisation of private space operators under the Law, which pertained to any operator of a space activity, including launching, conducted from French territory as well as any French operator launching space objects from outside France.⁵¹

The French Law is very outspoken concerning national security concerns: “Authorizations cannot be granted when the operations for which they are requested, regarding in particular the systems intended to be implemented, are likely to jeopardise national defence interests.”⁵² Further clauses allow the French authorities to elaborate such obligations in more detail, to control the activities once authorised, and to impose sanctions.⁵³

Transfer of a space object to the command of a third party, after the original activities have been authorised, still requires a separate authorisation—*inter alia* in view of the security risks posed by uncontrolled transfers of space objects to parties that as such may not be subject to French jurisdiction.⁵⁴ Authorisations specifically can be revoked or suspended when, once more, the activities at issue “are likely to jeopardise the national defence interests” — whether in contravention of a specific provision in the authorisation or not.⁵⁵

Finally, specific provisions are included which take care of the potential for remote-sensing operations to jeopardise French national security:

Any primary space-based data operator undertaking in France an activity having certain technical characteristics defined in a decree passed at the Council of State must preliminarily declare it to the competent administrative authority. These technical characteristics are related in particular to the resolution, location accuracy, observation frequency band and quality of the Earth observation data which are received or for which a satellite system is programmed.⁵⁶

Only to the extent the planned operations would not “harm fundamental interests of the Nation, particular defence matters, foreign policy and international commitments of France” might the authorisation be granted.⁵⁷

In any event, “the launching and guiding, for the needs of national defence, of vehicles [of] which [the] trajectory passes through outer space” and the activities of the French Ministry of Defence itself acting as space operator are not subject to the relevant limitations under the Act in this respect; it is considered self-evident that such activities have French national security at heart as their overriding concern in any event.⁵⁸

2.7. Concluding Remarks

Comparing the six member states of ESA and the European Union currently possessing a national space law with a licensing system for handling private participation in space activities, it turns out they offer a wider range of ways of handling the security issues inevitably involved in most space activities, including the private ones, than might have been expected.

The frameworks for authorisation of private space activities in Norway and Sweden make no reference whatsoever to issues of national security or defence. Norway only refers to “certain terms”⁵⁹ which may be included in the authorisation, whereas Sweden along the same lines only requires in a very general sense to take “the circumstances” into consideration and allows the imposition of conditions “for other reasons” than controlling the activity.⁶⁰ The United Kingdom is the first European state explicitly mentioning “the national security” of the state as a key consideration in granting a license, and therefore as a justification for imposing relevant conditions upon the licensee, but whether and what

specific conditions will actually be imposed remains at the discretion of the licensing authority.⁶¹

Whilst the national space laws of Belgium and the Netherlands, promulgated some twenty years later, are considerably lengthier and more detailed, those details largely refer to the procedures ensuring proper implementation and enforcement of licenses, and do not lie in detailing the substantive reasons for imposing conditions in the first place or detailing such conditions. In the Belgian case the reference is to “strategic interests,”⁶² in the Dutch case to “security” respectively “national security”;⁶³ but as with the United Kingdom, ultimately the decision to actually impose relevant conditions rests with the respective authorities (albeit that in the case of the Netherlands, the responsible Minister is forced to take action in case he considers it likely that “the maintenance of public order or national security might be jeopardized by issuing the licence”;⁶⁴ whereas the UK case amounts to a similar construction).

It may also be noted, furthermore, that none of these national acts make reference to involvement in the licensing process of the national military or defence authorities. Sweden actually comes closest in its requirement resting upon the licensing authority, the NBSA, to “consult (. . .) national ministries or authorities affected by the application” for a license.⁶⁵ Of course, neither of the respective licensing authorities themselves are part of the military or security-side of government: they concern a wide variety of civil space boards and Ministries such as of Economic Affairs or Science and Research, but never the Ministry of Defence.

Perhaps, however, not too much value should be attached to the rather open-ended character of those formulations. It still seems rather unlikely that in case a private operator’s planned activities would actually be perceived as presenting potential national security risks, the licensing authorities would not use the options available to them to impose relevant conditions or requirements upon the licensee after all. It is more a matter of relative legal uncertainty at the outset, as to what would be regarded as relevant security interests, than a matter of absence of national legal controls for those purposes.

Clearly the major exception in all these respects is France. France does provide for a straightforward obligation for the licensing authority to only authorise private space activities if they are not “likely to jeopardise national defence interests,” and further key controls are in place in the French Law to this effect, including a specific set of clauses regarding remote sensing.⁶⁶ France also represents the only case where an explicit reference to a Ministry of Defence has occurred in the national space laws of member states of ESA and the European Union.

Likely, it was a combination of specific factors in the French case giving rise to this very upfront and thorough handling of possible national security concerns in the context of private space activities to be licensed. These would range from a general historical militaristic tradition of *grandeur* (in explicit contrast with, for example, Sweden and the Netherlands), to an outspoken desire to remain master of its own destiny by depending on its own military force (as illustrated by such issues as the French refusal to agree to a European Defence Community in the 1950s, the development of its own nuclear force and its independent behaviour within the Western alliance), to the administrative centralist make-up of the state forcefully asserting its presence also in the space arena. Surely, the history of Ariane

and Arianespace (following the French urge to develop an originally French, then independent European launch vehicle under French leadership) as well as that of SPOT and SpotImage has moreover provided specifically France with a realisation from up close of the potential of such activities to threaten national security interests.

Whatever the origins, however, France stands out as the Single ESA and EU member state having so far addressed the national security concerns that might arise as a consequence of licensed private space activities in a thorough and upfront manner.⁶⁷ Since, moreover, the possibility to obtain a license under the French Law is open to any operator undertaking launch activities from French territory, with enjoyment of the third-party liability reimbursement cap offered by the French authorities available to anyone operating from within the European Union or another member state of the European Economic Area, this may have interesting consequences for private space activities and their licensing beyond the strict scope of French jurisdiction.⁶⁸

3. Non-European National Space Laws and the Security Issue

3.1. Introductory Remarks

In the previous chapter six cases of member states of ESA and/or the European Union have been discussed from the vantage point of security and defence issues: to what extent would potential licensees be, or be likely to be, confronted with conditions and requirements in the course of the licensing process which try to preserve the relevant national security interests of the states concerned.

This still leaves the majority of states in the ESA and EU realm without national space laws, some of which belong to the main space powers in this part of the world: Germany (although, as seen, Germany has at least taken care of the security concerns in the specific context of private involvement in remote sensing), Italy and Spain. In the absence of any clear guidance on the international level as to the details of any such national space legislation, of any competence so far of ESA or even the Union to dictate such details or impose a measure of harmonisation upon them,⁶⁹ and finally and particularly, of much *de facto* coherence of those six laws on the issue of national security: once the decision to establish a national space law has been taken these states may well look for guidance on handling those issues also to the handful of non-European space laws that are in force dealing with licensing of private space activities.

Thus, the present paragraph will deal from this perspective with the relevant national space acts of the United States, Russia, South Africa, the Ukraine, Australia, Brazil and South Korea.

3.2. The United States

The United States actually has, so far, three different national regimes for licensing private space operators in place for the three space sectors where private participation was developing or at least at the time expected to shortly start developing: launching, satellite communications, and satellite remote sensing. In each of the three cases certain national security concerns have found their way into the legislation, and will hence be inserted into

the licensing of individual operators. The following paragraph will deal with each of these three in turn from that vantage point.

3.2.1. *US Licensing of Launch Service Providers*

The Commercial Space Launch Act of 1984⁷⁰ opened up an era in the United States when private companies could obtain formalised permission to offer launch services on the arising global market, although it was not until a fundamental amendment four years later took away key concerns regarding unlimited liability that companies actually started to apply for launch licenses.⁷¹ The 1988 version of the Act provided the Office of Commercial Space Transportation (OCST), part of the Department of Transport's Federal Aviation Administration (FAA), with the competences as delegated by the Secretary of Transport to grant licenses under the Act, for any operator wishing to undertake launches or re-entry operations or operate a spaceport from/to/on US territory as well as any US operators wishing to undertake such activities elsewhere.⁷²

The licensing obligations are spelled out in Section 70105 of the Act. Grant of a license should be "[c]onsistent with (. . .) national security and foreign policy interests" of the United States, and the licensing authority may amongst others prescribe "additional requirement[s] necessary to protect" those.⁷³ On the other side, specific licensing requirements or even the requirement to obtain a license *per se* may be waived in case US national security and foreign policy interests would not be jeopardised by such a waiver.⁷⁴

Two full Sections further deal with the requirement for the licensing authority to consult and liaise with other departments, agencies, and even international partners in applicable cases. Most notably for the current issue, "[t]he Secretary of Transportation shall consult with the Secretary of Defense on a matter under this chapter affecting national security. The Secretary of Defense shall identify and notify the Secretary of Transportation of a national security interest relevant to an activity under this chapter."⁷⁵

The Commercial Space Launch Act as now codified also provides for an extensive set of rules to allow for comprehensive monitoring and sanctioning, such as suspending or revoking the license, in case the above requirements are not being met.⁷⁶ Section 70110 provides for the procedure applicable to administrative hearings and judicial review, whereas enforcement and penalties are regulated by Section 70115, providing *inter alia* for a maximum civil penalty of US\$100,000.⁷⁷

In short: the United States provides for a rather comprehensive and thorough regime to ensure that the granting of licenses and the operations of licensees in the area of launch activities do not impinge upon national security concerns—whilst at the same time not being overly regulatory in this respect. Even in the US case, consequently, many of the details will be left to the licensing process and individual licenses, which makes sense in view of the large diversity of possible activities to be licensed under the Act considering the broad range of launch and related activities which the private sector in the United States is involved in.

3.2.2. *US Licensing of Satellite Communication Operators*

The area of satellite communications on the one hand was the space sector earliest subject to commercialisation and privatisation but on the other hand does not raise security issues

in the context of licensing to the same extent as launching, very high-resolution satellite remote sensing, or satellite-based precision navigation. The US licensing system for private satellite operators carries with it some clauses relating to these issues nevertheless.

Interestingly, these clauses go back to the 30s, since that is when the Communications Act was promulgated, which in 1970 was then formally confirmed to apply to satellite communications as well, in terms of *inter alia* licensing private operators in the field.⁷⁸ The regime established by the Act required from any person that wished to “use or operate any apparatus for the transmission of energy or communications or signals by radio,” basically from within the United States, or a US-registered ship or aircraft, to obtain a license from the US Federal Communications Commission (FCC).⁷⁹

The competencies of the FCC to this end are spelled out in quite some detail already in Section 303—where no specific reference to security issues is made, however. Section 307, dealing amongst others with the terms of licensees, calls upon the FCC to grant a license “if public (. . .) interest (. . .) will be served thereby,” which presumably includes public interests of a national security nature.⁸⁰ Also, the FCC is granted the power to refuse construction permits or station licenses, for example “during a national emergency proclaimed by the President or declared by the Congress and during the continuance of any war in which the United States is engaged and when such action is necessary for the national defense or security or otherwise in furtherance of the war effort.”⁸¹ If the license to be granted is aimed at communications between the United States and foreign countries, the FCC is specifically empowered to impose *any* terms or conditions, which obviously focuses *inter alia* on the risks to US national security, which such communications might entail.⁸²

A final interesting clause concerns Section 606, entitled “War powers of the President,” whereby the President is entitled in the context of an ongoing war, “if he finds it necessary for the national defense and security” of the United States, “to direct that such communications as in his judgment may be essential to the national defense and security shall have preference or priority with any carrier” licensed under the Act.⁸³ Furthermore, it is “unlawful for any person during any war in which the United States is engaged to knowingly or willfully, by physical force or intimidation by threats of physical force, obstruct or retard or aid in obstructing or retarding interstate or foreign communication by radio or wire,” and in case of a violation of this prohibition, the President may even “employ the armed forces of the United States to prevent any such obstruction or retardation of communication”⁸⁴

Likewise, the President may “if he deems it necessary in the interest of national security or defense (. . .) suspend or amend” any rules or regulations otherwise applicable to communications activities within the United States—subject to a formal proclamation that “there exists war or a threat of war, or a state of public peril or disaster or other national emergency.”⁸⁵ Penalties for violations under this Section are scaled: under the 1934 Act a maximum of US\$1,000 or one year imprisonment would apply to a person who violates or substantially contributes to such a violation, a maximum of US\$5,000 if it concerns a legal entity so acting, and, in deviation of the foregoing, a maximum of US 20,000 or twenty years imprisonment, in case it concerns “an offense with intent to injure the United States, or with intent to secure an advantage to any foreign nation.”⁸⁶

The provisions of the Communications Act thus focus largely on the national security risks involved in international communications being used for spying activities, respectively of communications in the context of national defence being interrupted or obstructed, and proceeds to provide for appropriate legal instruments to counter those threats. Whilst the Communications Act has been repeatedly amended, most fundamentally by the 1996 Telecommunications Act,⁸⁷ the above conclusions would still hold true.

3.2.3. *US Licensing of Satellite Remote-Sensing Operators*

For those interested in operating remote-sensing satellite systems and/or marketing and selling the data generated by such systems, the National Oceanographic and Atmospheric Administration (NOAA), a subdivision of the US Department of Commerce, acts as the licensing authority. While the original act, the 1984 Land Remote Sensing Commercialization Act,⁸⁸ setting NOAA up with this authority, was repealed by the 1992 Land Remote Sensing Policy Act,⁸⁹ the essential characteristics of the licensing system remained intact.

Thus, any “person who is subject to the jurisdiction or control of the United States may, directly or through any subsidiary or affiliate, operate any private remote sensing space system” only if granted a license by NOAA.⁹⁰ The phrase “jurisdiction or control” is generally taken to comprise any relevant activities undertaken from US territory and/or by US nationals, as well as activities with substantial connections to the United States allowing the latter to exercise its jurisdiction. NOAA itself in this respect uses the terminology “any other private space system operator having substantial connections with the United States or deriving substantial benefits from US law that support its international remote-sensing operations”;⁹¹ examples thereof would be the use of US launchers (requiring in itself a license under the US Commercial Launch Act), the critical involvement of a US ground station or marketing activities within the United States.⁹²

The most prominent requirement to be complied with in order to be granted a license is to “operate the system in such manner as to preserve the national security of the United States”; another requirement relevant in the present context is to “notify the Secretary of any significant or substantial agreement the licensee intends to enter with a foreign nation, entity, or consortium involving foreign nations or entities.”⁹³ The Secretary of Commerce, as appropriate having delegated this to NOAA, may exercise a range of investigative, administrative, and regulatory competencies to ensure compliance with the Act and the license.⁹⁴ Noncompliance with the requirements of the license or attendant regulations may carry a maximum civil penalty of US\$10,000 for each day of ongoing violation (!), whilst not excluding the possibility to bring criminal charges in addition or instead.⁹⁵

A good illustration of how the competences of the Secretary of Commerce may be used in order to protect national security interests—even if, in this case, they did not concern US national security—concerned the implementation in a very specific case of so-called “shutter control” inserted into the Act by an amendment in 1998.⁹⁶ The legal provision so included provided in full:

- (a) Collection and Dissemination.—A department or agency of the United States may issue a license for the collection or dissemination by a non-Federal entity

of satellite imagery with respect to Israel only if such imagery is no more detailed or precise than satellite imagery of Israel that is available from commercial sources.

- (b) Declassification and Release.—A department or agency of the United States may declassify or otherwise release satellite imagery with respect to Israel only if such imagery is no more detailed or precise than satellite imagery of Israel that is available from commercial sources.⁹⁷

Thus, also in the context of private satellite remote-sensing activities, the US authorities can avail themselves of a broad and comprehensive legal toolbox to preclude any national security interests from being put at risk by such activities, at least to the extent that the United States can exercise jurisdiction over them.

3.3. *The Russian Federation*

Russia developed its own national space law in 1993,⁹⁸ shortly after the dissolution of the Soviet Union and the collapse of communism required a transition also of the space sector, previously totally controlled by government, to an era when it would largely have to fend for itself through becoming appropriately commercialised and privatised⁹⁹—whilst national security interests of, now, the Russian Federation should obviously continue to be preserved in that new context. Interestingly, enunciation of the Law was perceived as desirable mainly in reaction to the fact that all space activities in the Soviet era had been conducted in a manner intricately linked to military activities.¹⁰⁰

The scope of the Law and its licensing obligation *ratione personae* is defined very broadly, with reference to all “space activities under the jurisdiction of the Russian Federation.”¹⁰¹ This jurisdiction must be read to include both territorial and national jurisdiction, as becomes clear when reference is made to other provisions of the Russian Law, and is even expressly extended to include Russian-registered space objects.¹⁰²

The demise of the Soviet Union, communism and the secret veil behind which all space activities were essentially carried out by the Russian military of course did not spell the end of the involvement of the latter in the former, and the Russian Law is therefore also rife with references to, *inter alia*, national security. One of the main goals of the Russian space endeavour, as organised by means of the Law, is to ensure the security of the Russian Federation.¹⁰³ More precisely, one of “[t]he main tasks of space activities under the jurisdiction of the Russian Federation shall be (. . .) ensuring defense capabilities of the Russian Federation.”¹⁰⁴ A list of specific prohibitions “to ensure strategic (. . .) security” is added.¹⁰⁵ Further references to Russian national security can be found in Articles 4(3) and 6(2); all such clauses of course will be duly taken into account when any grant of a license is considered under Article 9.¹⁰⁶ The 2002 Order on licensing confirmed this approach, making reference *inter alia* to “ensuring the protection of data deemed state secret” and observing requirements designed to protect them (specifically referring to “foreign technical intelligences” (!)).¹⁰⁷

In addition to those substantive references to the national security of the Russian Federation, the latter is also taken care of in an institutional manner, through the central role

of the Ministry of Defense provided for by the Law.¹⁰⁸ Most particularly, Article 7 of the Law relegates space activities for the purpose of defence and security of the Russian Federation to the domain of the Ministry of Defense.¹⁰⁹ The 2002 Order on licensing, however, does not make any specific reference to the Ministry of Defense anymore in this specific context. On the other hand, as pointed out elsewhere, Russia drafted a specific law with reference to military issues, relevant also for military space activities: Government Regulation No. 889 of 20 November 2008 On Licensing Activities in the Field of Arming and Military Engineering.¹¹⁰

In sum, the Russian Federation has taken extensive care that its national security interests would not be harmed or interfered with by any private space operations licensed under the Law, both in a substantive sense—allowing licenses to be granted only if compliant with those interests—and in an institutional sense—allowing the Ministry of Defense a major role in interpreting whether those conditions are actually met, and hence whether a license will be granted at all.

3.4. South Africa

As Russia was shedding the shackles on its space programme resulting from its previous political era in 1993, that same year South Africa essentially was doing the same: with *apartheid* out of the door, the need to keep space technology safely locked behind the doors of the military establishment gave way to an interest in allowing that technology to be put at the disposal of the peoples and society of the country, including private entrepreneurs. Hence, on 6 September 1993 the Space Affairs Act of the Republic of South Africa entered into force¹¹¹ largely as a response to the growing interest of South African industrial and service sectors in space.¹¹²

The Act, consequently, prominently included a licensing system for private actors interested in undertaking space activities, whereby launching itself and—presumably—operating a launch facility requires a license both when conducted from South African territory and when conducted by South African nationals elsewhere, whereas all other space activities require a license (only) if conducted by South African nationals.¹¹³ The licensing Section already makes reference to the need to obtain such a license in every instance where the activities to be licensed “may affect national interests.”¹¹⁴ Also, specific conditions may be imposed in the license to protect those interests.¹¹⁵

In terms of general security aspects, the Space Affairs Act focuses on weapons of mass destruction and their possible proliferation.¹¹⁶ In consequence, the Minister of Trade and Industry shall take the prevention of such proliferation, at least to the extent required by international obligations, into due account when determining the general space policy of South Africa.¹¹⁷

No clear reference can be found specifically to the national security of South Africa, however, although the Minister of Trade and Industry, the competent authority under the Act, can issue regulations concerning the disclosure, transfer, and marketing of any technology or product outside South Africa.¹¹⁸ What remains to be noted is the general competence of the Minister of Defense *vis-à-vis* his confrere of Trade and Industry to preserve the national interests when it comes to this type of security.¹¹⁹

3.5. *The Ukraine*

The Ukraine, the second largest heir of the space legacy of the Soviet Union, also was the second former Soviet state to draft a national law, for largely the same reasons and largely along the same lines as Russia, in 1996.¹²⁰ Relative to Russia (and also Kazakhstan), the only category of space capabilities the Ukraine did *not* inherit was a launch site; the manufacturing of launch vehicles however *was* a major stronghold of the country's industry.

The Law on Space Activity of Ukraine provides for a licensing system applicable to space activities "in [read: undertaken from] the Ukraine or, under jurisdiction of the Ukraine, abroad," the latter phrase obviously referring to Ukrainian nationals.¹²¹ In addition, in view of the extended and precise formulation of the obligation to register relevant space objects with the Ukrainian authorities in Article 13, the same phrase would also refer to space objects so registered.¹²²

In terms of the attention paid to national security issues, allowable purposes for, respectively main principles of space activities under the Law include "national (. . .) defensibility" and "safety of the state."¹²³ Consequently, the National Space Agency of the Ukraine, the authority charged with the granting and monitoring of licenses under Articles 6 and 10 of the Law, is to ensure *inter alia* proper protection of "military (. . .) secrets" in the process,¹²⁴ whereas Article 9 imposes a number of restrictions on licensed space activities, such as involving weapons therein or using the moon and other celestial bodies for military purposes.

A major reason for establishing the Ukrainian act was the intention of the country to become a trustworthy and interesting player in the context of international cooperation, contributing its space heritage whilst in turn profiting from the expertise of others in a competitive global environment. Thus, Section V of the Law addresses the main principles applicable to such international cooperation, which notably includes the "strengthening of the national sovereignty."¹²⁵

Another section, Section VI, addresses "[s]pace activity in the area of defence and security of the Ukraine." It provides amongst others for the central responsibility of the Ministry of Defence to conduct all space activities in the area of defence and national security, including "construction and use of the military and double assignment space engineering," and for the further definition of its relationship with the National Space Agency of the Ukraine by a Rule to be defined.¹²⁶

Though generally speaking defined in less detail, the Ukrainian Law thus follows in its overall approach very much the Law of the Russian Federation on Space Activities in allotting a large and explicit role to the Ministry of Defence wherever the national security of the state would directly impinged upon by space activities, in equal measure limiting the civil licensing authority in that respect.

3.6. *Australia*

Australia has, with its 1998 Act,¹²⁷ called into existence an elaborate licensing system actually establishing four types of licenses: the launch permit, the overseas launch certificate, the authorisation (of the return to Australia of a space object launched outside the country), and the space license (to operate a launch facility on Australian territory).¹²⁸ In addition, in some cases exemption certificates can be issued.¹²⁹

Protecting the interests in Australian national security is not explicitly mentioned amongst the objects of the Act.¹³⁰ Nevertheless, in the actual requirements for obtaining one or the other license the security issues are taken into consideration. Thus, a launch permit can be granted only if “the Minister does not consider that, for reasons relevant to Australia’s national security, foreign policy or international obligations, the launch permit should not be granted.”¹³¹ An identical provision pertains to the overseas launch certificate, the authorisation, and the space license.¹³² Other provisions prohibit the licensee to become involved with weapons of mass destruction as part of his licensed activities.¹³³

Further to these requirements, the Act then provides for standard instruments to enforce compliance with them such as revocation, transfer, or suspension of a license.¹³⁴ In some cases, specific penalties are provided for, such as a maximum fine of 600 penalty units or imprisonment of ten years in case of violation of a launch permit condition,¹³⁵ with additional provisions on civil penalties provided for more generally.¹³⁶ Also, as important from a security perspective, transfer of a space license, launch permit or overseas launch certificate requires a specific agreement from the responsible Minister.¹³⁷

On the other hand, there is no explicit reference to the Department of Defence—except in an indirect manner: a “member of the Defence Force” is not covered by the provisions on the requirements for launch permits, overseas launch certificates, authorisations, space licenses, or exemption certificates under Sections 11 through 15 of the Act (as is the Commonwealth itself).¹³⁸ Australian military space activities, in other words, do not require any of these types of authorisations.

3.7. *Brazil*

Brazil represents an interesting case of a state issuing a national space law—an Administrative Edict of 2001 encompassing the Regulation of licenses properly speaking¹³⁹—most notably because it is the first developing country to clearly do so, wishing to maximise the benefits from, in particular, its Alcantara launch site very close to the equator.¹⁴⁰ Consequently, many of its provisions deal with the possibility of foreign operators interested in using Alcantara, and balancing their commercial interests with the interests of Brazil itself in benefiting from such high-key technology operations beyond simple licensing and access fees.¹⁴¹

The Administrative Edict and the Regulation focus exclusively on launching, providing an obligation to obtain a license if somebody wishes to launch from Alcantara (or the other Brazilian launch basis, Barreira do Inferno).¹⁴² The Regulation provides for an extended list of documents to be provided by the license applicant, some of which clearly serve to address possible security concerns of the Brazilian government. These range from the basic requirement for licensees to have headquarters or be formally represented in Brazil (allowing the authorities to effectively enforce any relevant conditions),¹⁴³ to a statement of acquaintance with “the Security Regulations and Procedures established by AEB [the Brazilian Space Agency, which wields the licensing competence under the Administrative Edict]”¹⁴⁴ and a commitment to abide by the technology safeguard controls imposed by Brazil¹⁴⁵ *inter alia* meant to refer to Brazilian commitments on non-proliferation of missile technology under the MTCR agreement.¹⁴⁶

Furthermore, the Brazilian Space Agency AEB is entitled to consult, prior to the grant of a license, with other organs or bodies of the Brazilian government “as to the existence of conflict with the interests of security and foreign policy concerning the space launching activities proposed by applicant.”¹⁴⁷ With respect to foreign license applicants, in addition statements are required confirming their authorisation to operate the activities concerned under the laws of their home countries, as well as to the existence of appropriate safeguard agreements on sensitive technology between Brazil and their respective home countries.¹⁴⁸

3.8. *South Korea*

Further to its ambitions to become a major space-faring power, South Korea promulgated its Space Development Promotion Act in 2005.¹⁴⁹ As the Act states, one of its main purposes “is to facilitate the peaceful use and scientific exploration of outer space and to contribute to national security.”¹⁵⁰ South Korea technically speaking is still at war with North Korea, and ever since its initiation as a separate state feels very much threatened by the close-by presence not only of North Korea but also of communist China, and until the collapse of the Soviet Union, that other communist superpower as well—which well explains why national security issues are so prominently included even in a civil space act designed also to develop “the national economy and improvement of the people’s living.”¹⁵¹

The obligation to obtain a license to launch (the Act does not as such deal with other space activities, such as remote sensing), which applies to launches undertaken from South Korean territory or facilities as much as to launches undertaken with Korean-owned launch vehicles elsewhere,¹⁵² is taking this special national-security context into consideration. In granting a license, the Minister of Science and Technology “may attach necessary conditions” including “the appropriateness of the purpose of using a launch vehicle,”¹⁵³ which in light of the aforementioned key purpose of the Act at least in theory should exclude any possibility for such a launch activity to negatively impact South Korea’s national security. Also, Article 4 of the Act clearly reserves the possibility for other acts and statutes to exclude certain types of activities, including of course security-related ones, from the scope of the Act and the possibility to obtain a license under it.¹⁵⁴

Further means of control of the national security interests are offered through the Basic Plan on Space Development Promotion under Article 5 to be formulated by the government. In a centralised country like South Korea such a plan determines the main possibilities also for the private space industry to become realistically involved in space activities themselves—through R&D support, tax privileges, and suchlike.¹⁵⁵ The Minister has to formulate the implementing plan every year after consulting with the “heads of central administrative authorities concerned including the Director General of the National Intelligence Service,” whereas “matters related to national security need not be publicized.”¹⁵⁶ A National Space Committee is installed to deliberate detailed matters regarding the Basic Plan and the implementing plans, but may be restrained from discussing launch licenses “if the omission [of such discussions] is necessary for reasons such as national security.”¹⁵⁷

The Ministry of National Defense may not be mentioned anywhere in these particular clauses; the direct control exercised by the President over the National Space Committee and the Special Agency for Space Development¹⁵⁸ (and by the government as a whole over

the Basic Plan) would already guarantee that no activities to be licensed under the Act would present a substantial risk to national security.

Also post-grant, the authorities can exercise substantial control for national security purposes. In addition to more general causes for revocation of a license (such as pertaining to general lack of compliance with imposed conditions), “[w]here a head of central administrative authorities concerned requests for the revocation of a license due to an anticipated serious threat to national security,” that license will indeed be revoked.¹⁵⁹ More broadly still, the Minister of National Defense may request “the suspension of space development being carried out by a national of the Republic of Korea on account of a military operation in case of war, disturbance or similar kind of emergency,” in which case the Minister of Science and Technology shall indeed order the national to suspend relevant activities.¹⁶⁰

Finally, “[w]hen the Minister of Science and Technology pushes forward a space development project related to national security, the Minister shall consult heads of central administrative authorities concerned in advance,” whereas “[n]ecessary matters relating to the establishment and implementation of security measures in relation to the space development project of paragraph 1 shall be prescribed by Presidential Decree.”¹⁶¹

4. Concluding Remarks: A European Issue?

Generally speaking, non-European national space laws and licensing regimes turn out to be just as diverse in their handling of national security and defence issues in the context of licensing private space enterprise. They make use of the same generic mechanisms, allowing the licensing authorities to insert conditions and requirements in licenses designed to protect national security, providing them with competences to enforce such conditions and requirements even after the fact of granting a license. They may also refer to more institutionalised ways of controlling national security interests, such as by allowing the respective Ministry of Defence a voice in the licensing process and carving out any security-sensitive space activities *ipso facto* from the licensing process, relegating it to the exclusive domain of the military or defence authorities.

From that perspective, as also following from the particular shape and form the security paradigms take on for each particular country (compare, for example, the specific historical situations of South Korea, Russia, the Ukraine, and South Africa), these non-European examples of national space laws dealing with national security concerns may not present much of a harmonised and coherent set of laws either, from the perspective of any European state seeking to implement a national space law still. Rather, it presents a sample sheet of individualised options to assert appropriate sovereign concerns in this area also in the context of licensing private space operators. If anything, it may be noted that, generally speaking, the non-European space laws are more forceful and explicit in taking care of such national security-related issues in this context.

This brings us finally to the question of whether, absent much of such specificity, transparency and explicitness (with the exception of France, as argued), there might perhaps be a role for overarching European institutions in this area. This is not the proper place to go deep into those issues,¹⁶² but obviously the only institutions reasonably representing candidates for such a role are the European Union and ESA.

As for ESA, as starting point for any discussion it should be noted that the possibility of the organisation to become involved in handling military and security issues within the European space endeavour at various levels depends on the interest of individual ESA member states, as a consequence *inter alia* of the structure of ESA programmes, in particular the optional ones.¹⁶³ In particular, the major investors in ESA and ESA programs—France, Germany, Italy, the United Kingdom, and Spain—need to possess the political will and wherewithal in having ESA become so involved.

Originally, furthermore, the Agency was supposed only to undertake activities for “exclusively peaceful purposes.”¹⁶⁴ However, firstly also ESA could not escape the inevitable close relationship between space activities and security issues, for example in the context of the Ariane launcher programme. Secondly, its participation in the first decade of the present century in the two European flagship programmes, Galileo and GMES (Global Monitoring for the Environment and Security), once more inevitably giving rise to some security issues, was accepted without much political upheaval, testifying to a growing realisation that also in the (broader) security area, strong European cooperation in space was becoming, if perhaps not yet unavoidable altogether, at least more and more beneficial—as well as, simply put, a fact of life.

In the context of Galileo, in spite of the civil governance structure developed firstly the possibility of potential adversary use of its Signals will have to be faced¹⁶⁵ and secondly the envisaged Public-Regulated Service (PRS), while painstakingly avoiding any reference to military or defence, was modelled in many respects on the GPS Precise Positioning Signal—which is being used by the US military and its allies. Whilst the PRS is officially to be made accessible to all governmental services, the debate on whether this should not also include the use by the military of respective member states is gradually but clearly moving into the direction of acceptance of the latter.

In the context of GMES, the concept of “Security” as part of its official label gradually came to be interpreted beyond the concept of “civil security” so as to encompass more “traditional” military and defence issues of security.¹⁶⁶ As GMES is tasked specifically to provide Europe with its own independent and comprehensive satellite earth observation infrastructure for generation of data and information on a comprehensive range of subjects, it will bring the inclusion of defence, security, and military matters even more explicitly into the broader civil European governance structures to be developed in this context.

The major partner of ESA in both the Galileo and the GMES contexts is, of course, the European Union. Also the Union has developed from an entity officially barred from substantially dealing with military and defence issues until the Treaty on European Union¹⁶⁷ to an actor with increasing juridically enshrined possibilities to make its views heard.

The Treaty on European Union introduced the pillar of the Common Foreign and Security Policy (CFSP) into the institutional construct of the Union,¹⁶⁸ although as such this pillar remained intergovernmental in character for the time being. From this starting point, however, the Union’s role in the security arena developed along two lines.

Firstly, the CFSP gradually developed into a more integral part of the Union’s institutional structure, by now absorbing the Western European Union.¹⁶⁹ With the Treaty of Lisbon,¹⁷⁰ the CFSP is even formally integrated into the Union as part of the Treaty on the

Functioning of the European Union,¹⁷¹ although that does not really take away its essentially intergovernmental character: the individual member states still retain a large and sovereign measure of control over the way they wish to handle national security issues.¹⁷²

Secondly, however, in a much narrower area the Community, then Union, did commence to exercise proper legislative competences: that of trade in security-sensitive items and know-how, further to the MTCR and the Wassenaar Arrangement.¹⁷³ Thus, Regulation 1334/2000 provided a baseline framework for implementing in a binding European context the international obligations resulting from the formally nonbinding MTCR and Wassenaar regimes, while working towards a harmonization of the ways and means by which individual member states would implement and apply those international obligations and guidelines.¹⁷⁴ This Regulation has been updated ever since on average almost once a year, the latest version being Resolution 428/2009.¹⁷⁵ The regime *inter alia* provides for a Community General Export Authorisation (CGEA) which is to replace national export authorisations of security-sensitive items and know-how in a limited set of circumstances as well as for certain obligations of transparency and loose conformity with respect to national export authorisations wherever these are still applicable.¹⁷⁶

Apart from this specific (and still limited, though growing) measure of competence of the Union in matters pertinent to security issues, however, it should—*a contrario*—be concluded that for the time being there is little to be expected in terms of an EU lead in the development of harmonised clauses relating to the licensing of private space operators in the field of security and military issues. It should also be pointed out here that following the Treaty of Lisbon's entry into force, the Treaty on the Functioning of the European Union specifically excludes the competence to harmonise national laws and regulations of the member states from the so-called space competence now inserted.¹⁷⁷

Since also the European Space Agency has no competences in the area of licensing of space activities—even apart from the specific aspects of licensing space activities relevant from the perspective of concerns with national and international security—it seems that, for the time being, those European states that have not yet developed comprehensive national space legislation dealing with the licensing of private space enterprise almost completely remain at liberty to handle in that process their particular security considerations and concerns. That may be an almost self-evident consequence of the importance attached by all sovereign states to their national security; obviously that in itself does not suffice to deny the benefits for Europe of arriving at least at a certain measure of coordination—if only, to prevent the existing extent of the freedoms to trade and move goods within the European Union from giving rise within Europe to certain “flags of convenience” for all the wrong purposes.

Notes

1. See, in particular, *supra*, M. Gerhard & M. Creydt, Safeguarding National Security and Foreign Policy Interests—Aspects of Export Control of Space Material and Technology and Remote Sensing Activities in Outer Space, discussing as to the first, *inter alia* the US ITAR and the EU Dual-Use Regulation (Council Regulation setting up a Community regime for the control of exports, transfer, brokering, and transit of dual-use items, No. 428/2009/EC, of 5 May 2009; OJ L 134/1

- (2009)), and as to the second, in particular the German Act on Satellite Data Security (Act Protecting Against the Endangerment of German Security Through the Proliferation of High Resolution Aerial Imagery of the Earth; *Satellitendatensicherheitsgesetz*; 23 November 2007, effective 1 December 2007; Federal Gazette (BGBl.) Year 2007 Part I No. 58, of 28 November 2007).
2. Cf. e.g. S. Hobe *et al.*, Ten Years of Cooperation between ESA and EU: Current Issues, 58 *Zeitschrift für Luft-und Weltraumrecht* (2009), 49–73.
 3. Geographically speaking, the Russian Federation and the Ukraine would also qualify as European states. Yet, in spite of the absence so far of any regulatory competences of ESA and of more than a first general competence in the case of the European Union (see further on this the contribution *infra* by B. Schmidt-Tedd, Authorisation of Space Activities after the Entry into Force of the EU Reform Treaty), it is considered opportune to take the membership of these two organisations as point of departure for defining “Europe,” in view of their long-standing joint history in space. See also the contribution *infra* by L. J. Smith, EU Competition Law and Issues of National Authorisation of Private Space Activities.
 4. Act on launching objects from Norwegian territory into outer space (hereafter Norwegian Act on Launching), No. 38, 13 June 1969; *National Space Legislation of the World*, Vol. I (2001), at 286.
 5. Sec. 1(c), Norwegian Act on Launching.
 6. Convention on International Liability for Damage Caused by Space Objects (hereafter Liability Convention), London/Moscow/Washington, done 29 March 1972, entered into force 1 September 1972; 961 UNTS 187; TIAS 7762; 24 UST 2389; UKTS 1974 No. 16; Cmnd. 5068; ATS 1975 No. 5; 10 ILM 965 (1971).
 7. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (hereafter Outer Space Treaty), London/Moscow/Washington, done 27 January 1967, entered into force 10 October 1967; 610 UNTS 205; TIAS 6347; 18 UST 2410; UKTS 1968 No. 10; Cmnd. 3198; ATS 1967 No. 24; 6 ILM 386 (1967).
 8. Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, London/Moscow/Washington, done 22 April 1968, entered into force 3 December 1968; 672 UNTS 119; TIAS 6599; 19 UST 7570; UKTS 1969 No. 56; Cmnd. 3786; ATS 1986 No. 8; 7 ILM 151 (1968).
 9. Secc. 1, resp. 2, Norwegian Act on Launching.
 10. Act on Space Activities (hereafter Swedish Act on Space Activities), 1982: 963, 18 November 1982; *National Space Legislation of the World*, Vol. I (2001), at 398; *Space Law—Basic Legal Documents*, E.II.1; 36 *Zeitschrift für Luft-und Weltraumrecht* (1987), at 11; resp. Decree on Space Activities (hereafter Swedish Decree on Space Activities), 1982: 1069; *National Space Legislation of the World*, Vol. I (2001), at 399; *Space Law—Basic Legal Documents*, E.II.2; 36 *Zeitschrift für Luft-und Weltraumrecht* (1987), at 11.
 11. See Secc. 1, 2, Swedish Act on Space Activities.
 12. Sec. 3, Swedish Act on Space Activities. Sec. 4 then provides for the possibility of withdrawal of the license, in case the conditions of the license are not complied with. See also N. Hedman, Swedish Legislation on Space Activities, in C. Brünner & E. Walter (Eds.), *Nationales Weltraumrecht/National Space Law* (2008), 74–76.
 13. See Sec. 5, Swedish Act on Space Activities.
 14. Sec. 1, Swedish Decree on Space Activities.
 15. Art. II, Convention for the Establishment of a European Space Agency (hereafter ESA Convention), Paris, done 30 May 1975, entered into force 30 October 1980; 14 ILM 864 (1975); *Space Law—Basic Legal Documents*, c.u.

16. Outer Space Act (hereafter UK Outer Space Act), 18 July 1986, 1986 Chapter 38; *National Space Legislation of the World*, Vol. I (2001), at 293; *Space Law—Basic Legal Documents*, E.I.; 36 *Zeitschrift für Luft-und Weltraumrecht* (1987), at 12.
17. See Secc. 1, 2(1), 3, UK Outer Space Act.
18. Sec. 4(2.c), UK Outer Space Act.
19. Sec. 5(2.e) sub (iv), UK Outer Space Act.
20. Cf. Sec. 6(2), UK Outer Space Act.
21. Sec. 8(2), UK Outer Space Act.
22. Law on the activities of launching, flight operations or guidance of space objects (hereafter Belgian Space Law), 17 September 2005, adopted 28 June 2005; *Nationales Weltraumrecht/National Space Law* (2008), at 183.
23. See Artt. 2, 4(1), Belgian Space Law.
24. Cf. Art. 2(1), Belgian Space Law.
25. Art. 5(1), Belgian Space Law.
26. Art. 11(5), Belgian Space Law.
27. Law Incorporating Rules Concerning Space Activities and the Establishment of a Registry of Space Objects (hereafter Dutch Space Law), 24 January 2007; 80 *Staatsblad* (2007), at 1; *Nationales Weltraumrecht/National Space Law* (2008), at 201.
28. See Secc. 2, 3(1), Dutch Space Law.
29. Cf. Sec. 1(b), Dutch Space Law.
30. Sec. 3(3), sub (d) resp. (e), Dutch Space Law.
31. Sec. 10(1), Dutch Space Law.
32. Sec. 6(1.b), Dutch Space Law.
33. See, resp., Sec. 7, Sec. 14, and Secc. 15-23, Dutch Space Law. E.g., Sec. 15(1) provides for a maximum administrative penalty of €450,000 or 10% of the relevant annual sales of the licensee concerned in the Netherlands, whichever is greater.
34. Explanatory Memorandum, Space Activities Act (13 June 2006). The Dutch version thereof can be found in *Tweede Kamer der Staten-Generaal, Vergaderjaar 2005–2006*, 30 609, nr. 3. For the unofficial English translation of the explanatory memorandum, reference may be had to http://www.agentschap-telecom.nl/ep/space_activities_act_explanatory_note.pdf.
35. Convention on Registration of Objects Launched into Outer Space (hereafter Registration Convention), New York, done 14 January 1975, entered into force 15 September 1976; 1023 UNTS 15; TIAS 8480; 28 UST 695; UKTS 1978 No. 70; Cmnd. 6256; ATS 1986 No. 5; 14 ILM 43 (1975).
36. Cf. Ch. II, para. on Sec. 3, Explanatory Memorandum.
37. Ch. II, para. on Sec. 6, Explanatory Memorandum.
38. Order Concerning Licence Applications for the Performance of Space Activities and the Registration of Space Objects (*Regeling aanvraag vergunning ruimtevaartactiviteiten en registratie*) (hereafter Dutch Licensing Order), Ministry of Economic Affairs, no. WJZ 7119929, of 7 February 2008, which entered into force 22 February 2008.
39. Art. 2(2.a), Dutch Licensing Order.
40. It may be noted that the Explanatory Memorandum specifically expects that launch activities, the most directly security-related category of space activities, would not be conducted anytime soon from Dutch territory; whereas from the other end it clarifies that the main expected type

- of space operators prospectively applying for licenses—further to the one company already currently requiring a license under the Law, New Skies Satellites—would be in the satellite communications field, perhaps the least security-sensitive area of space activities.
41. Law on space operations (*Loi relative aux opérations spatiales*) (hereafter French Law on Space Operations; Loi n° 2008-518 du 3 juin 2008; 34 *Journal of Space Law* (2008), at 453; unofficial translation 34 *Journal of Space Law* (2008), at 453.
 42. See also *supra*, A. Kerrest de Rozavel & F. G. von der Dunk, Liability and Insurance in the Context of National Authorisation, sections 6, 7.
 43. See on this e.g. F. G. von der Dunk, *Private Enterprise and Public Interest in the European 'Spacescape'* (1998), 155–60, 167–70, 232–39.
 44. Declaration by Certain European Governments Relating to the Ariane Launcher Production Phase (hereafter Arianespace Declaration), done 14 January 1980, entered into force 15 October 1981; 6 *Annals of Air and Space Law* (1981), at 723.
 45. Convention between the European Space Agency and Arianespace (hereafter Arianespace Convention), signed 24 September 1992.
 46. Agreement between the French government and the European Space Agency with respect to the Centre Spatial Guyanais (CSG). Effectively, this was a series of renewed regularly protocols between France and ESA concerning the use of the Centre Spatial Guyanais (CSG).
 47. See further *supra*, A. Kerrest de Rozavel & F. G. von der Dunk, Liability and Insurance in the Context of National Authorisation, section 6.
 48. Artt. 1.2(a), 3.1, Arianespace Declaration.
 49. Art. II, ESA Convention; see further *infra*, section 4. Cf. also Art. III, Outer Space Treaty.
 50. See Art. 1.6(b), Arianespace Declaration. Cf. also para. (c).
 51. See Art. 2, French Law on Space Operations.
 52. Art. 4, 2nd para., French Law on Space Operations.
 53. See e.g. Artt. 4, 7, 11, French Law on Space Operations. The latter makes reference to penalties of up to €200,000.
 54. See Art. 3, French Law on Space Operations.
 55. Art. 9, French Law on Space Operations.
 56. Art. 23, French Law on Space Operations.
 57. Art. 24, French Law on Space Operations.
 58. Art. 26, French Law on Space Operations.
 59. Sec. 1, Norwegian Act on Launching.
 60. Sec. 3, Swedish Act on Space Activities.
 61. Sec. 5(2.e), sub (iv), UK Outer Space Act.
 62. Art. 5(1), Belgian Space Law.
 63. Secc. 3, 6(b), Dutch Space Law.
 64. Sec. 6(1.b), Dutch Space Law.
 65. Sec. 1, Swedish Decree on Space Activities.
 66. Art. 4, 2nd para., French Law on Space Operations; see further e.g. Artt. 23–24.
 67. Only the German case, with the 2008 Act on Satellite Data Security, might be referred to in this context as another example of such a national act. Actually, this Act is very much exclusively focused on the security aspects—interestingly, however, the development of the Act was to a large extent driven by the need to satisfy US security concerns; on the other hand, the Act does

- only deal with remote-sensing activities, and then even those of a very high-resolution character only. See further *supra*, M. Gerhard & M. Creydt, Safeguarding National Security and Foreign Policy Interests—Aspects of Export Control of Space Material and Technology and Remote Sensing Activities in Outer Space, section 3.
68. Cf. Artt. 2(1), 15, French Law on Space Operations.
 69. See further *infra*, para. 4.
 70. Commercial Space Launch Act, Public Law 98-575, 98th Congress, H.R. 3942, 30 October 1984; 98 Stat. 3055; *Space Law—Basic Legal Documents*, E.III.3.
 71. See Commercial Space Launch Act Amendments, Public Law 100-657, 100th Congress, H.R. 4399, 15 November 1988; 49 U.S.C. App. 2615; 102 Stat. 3900; *Space Law—Basic Legal Documents*, E.III.3, 13 ff. The original Act provided both for unlimited liability on the national level, and for an unlimited reimbursement of the US government in case the latter had to answer claims under the Liability Convention once the United States would qualify as a launching state for those purposes; the 1988 amendments in both cases imposed flexible and reasonable caps. See further *supra*, contribution by A. Kerrest de Rozavel & F. G. von der Dunk, Liability and Insurance in the Context of National Authorisation, section 5.
 72. See Sec. 70104, Commercial Space Transportation—Commercial Space Launch Activities, 49 U.S.C. 70101 (1994); cf. also Sec. 70119.
 73. Sec. 70105(a)(1), resp. (b)(2)(B), Commercial Space Transportation—Commercial Space Launch Activities, 49 U.S.C. 70101 (1994).
 74. See Sec. 70105(b)(2)(C), (c), Commercial Space Transportation—Commercial Space Launch Activities, 49 U.S.C. 70101 (1994).
 75. Sec. 70116(a), Commercial Space Transportation—Commercial Space Launch Activities, 49 U.S.C. 70101 (1994).
 76. See Secs. 70106, 70107, Commercial Space Transportation—Commercial Space Launch Activities, 49 U.S.C. 70101 (1994).
 77. See Sec. 70115(c)(1), Commercial Space Transportation—Commercial Space Launch Activities, 49 U.S.C. 70101 (1994).
 78. Communications Act, 19 June 1934; 47 U.S.C. 151 (1988); 48 Stat. 1064; the application of the licensing regime to private satellite operators was confirmed by Communications Satellite Facilities, *First Report and Order*, 22 FCC 2d 86 (1970), Appendix C, p. 1.
 79. Sec. 301, Communications Act.
 80. Sec. 307(a), Communications Act. The same terminology is also used by para. (c)(1).
 81. Sec. 308(a), sub (2), Communications Act. Of course, at the time when the Act was drafted “war” was still a key concept of international law covering most of national security issues that could arise for a state.
 82. See Sec. 308(c), Communications Act.
 83. Sec. 606(a), Communications Act.
 84. Sec. 606(b), Communications Act.
 85. Sec. 606(c), (d), Communications Act. See also *supra*, n. 81.
 86. Sec. 606(h), Communications Act. Note the amounts; as confirmed in particular by the twenty years of imprisonment in the last case, in current terms these amounts would not seem very “proportional” to the imprisonment penalties. Yet, as far as could be traced, they have never been updated post-1934.

87. Telecommunications Act, Public Law 104-104, 104th Congress, 3 January 1996, signed into law 8 February 1996; 110 Stat. 56.
88. Land Remote Sensing Commercialization Act, Public Law 98-365, 98th Congress, H.R. 5155, 17 July 1984; 98 Stat. 451; *Space Law—Basic Legal Documents*, E.III.4.
89. Land Remote Sensing Policy Act, Public Law 102-555, 102nd Congress, H.R. 6133, 28 October 1992; 15 U.S.C. 5601; 106 Stat. 4163.
90. Sec. 5622(a), Land Remote Sensing Policy Act.
91. As per <http://www.licensing.noaa.gov/faq.html> (most recently accessed 20 February 2010).
92. See J. F. Keeley & R. N. Huebert, *Commercial satellite imagery, and United Nations peacekeeping: a view from above* (2004), 18.
93. Sec. 5622(b)(1) resp. (6), Land Remote Sensing Policy Act. Further explicit references to the need to protect US national security interests can be found in Sec. 5621(b)(1), 5623(a)(2), as well as Sec. 5601(9), (10), on the findings underlying the establishment of the Act. See also Sec. 5622(11), where “noncommercial purposes” is defined with reference *inter alia* to potentially adverse affects on US national security.
94. See Sec. 5623-24, Land Remote Sensing Policy Act.
95. Sec. 5623(a)(3), Land Remote Sensing Policy Act.
96. See Public Law 105-503, Amendments 1998—Subsec. (b).
97. Public Law 104-201, div. A, title X, Sec. 1064, 23 September 1996; 110 Stat. 2653. See further e.g. Keeley & Huebert, 17–19.
98. Law on Space Activity (hereafter Russian Law on Space Activity), No. 5663-1, 20 August 1993, effective 6 October 1993; *National Space Legislation of the World*, Vol. I (2001), at 101.
99. Cf. Preamble, 3rd para., Russian Law on Space Activity: the Law was “intended to provide legal regulation for space activities and stimulate (. . .) the application of the potential of space science and industry for solving socio-economic, scientific, technical and defense tasks.”
100. See e.g. N. Malysheva, *Space Activity and Space Law in the Post-Soviet Area*, 54 *Zeitschrift für Luft-und Weltraumrecht* (2005), 571 ff.; cf. also already V. S. Vereshchetin & G. V. Silvestrov, *Space Commercialization in the Soviet Union: Facts, Policy and Legal Issues*, in K. Tatsuzawa (Ed.), *Legal Aspects of Space Commercialization* (1992), 33.
101. Art. 9(2), Russian Law on Space Activity.
102. See Art. 3(1), 4(1) & (2), 5(1), 9(2), 18(4), esp. 2nd sent., 27(1); also Art. 17(2), Russian Law on Space Activity.
103. See Art. 3(1), Russian Law on Space Activity.
104. Art. 3(2), Russian Law on Space Activity.
105. Art. 4(2), Russian Law on Space Activity. The activities specifically mentioned concern the deployment and testing of weapons of mass destruction, the use of space objects and other space technology as a means of influence upon the environment for military and other hostile purposes, the use of the moon and other celestial bodies for military purposes, the creation of deliberate immediate threats to the safety of space activities, and the causation of harmful contamination of outer space which leads to unfavourable changes of the environment, including deliberate elimination of space objects in outer space.
106. See further also the Statute on Licensing Space Operations of 2 February 1996, e.g. paras. 2, 5(i), 24(d).

107. E.g. Art. 4(a), Order of the Government of the Russian Federation On Approval of the Regulation on Licensing of Space Activity, of 14 June 2002; *National Space Legislation of the World*, Vol. II (2002), at 302.
108. Cf. e.g. Artt. 6(2), 8(1), Russian Law on Space Activity, on the role of the Ministry of Defense in elaborating the Russian federal space programme and involving industry in governmental space activities. Also Artt. 20(1), 22(1).
109. See esp. Art. 7(1), (2), Russian Law on Space Activity, providing for extensive competences of the Ministry of Defense. Also Artt. 7(3), 18(1).
110. See *supra*, contribution by I. Marboe & F. Hafner, Brief Overview over National Authorization Mechanisms in Implementation of the UN International Space Treaties, section 3.2.2.
111. Space Affairs Act (hereafter South African Space Affairs Act), 6 September 1993, assented to on 23 June 1993, No. 84 of 1993; Statutes of the Republic of South Africa—Trade and Industry, Issue No. 27, 21–44; *National Space Legislation of the World*, Vol. I (2001), at 413.
112. See I. de Villiers Lessing, South Africa: Recent Development in Space Law, 1 *Telecommunications & Space Journal* (1994), 139–42. Thus, for example, the South African Council for Space Affairs had to include “two persons from the space industry”; Sec. 6(1)(b), South African Space Affairs Act.
113. See Sec. 11(1), South African Space Affairs Act.
114. Sec. 11(1)(d)(i), South African Space Affairs Act.
115. See Sec. 11(2)(b), South African Space Affairs Act.
116. So already e.g. in Sec. 1, 6th def., South African Space Affairs Act, where “dual-purpose technologies” are defined as any technologies contributing to such “proliferation of weapons of mass destruction.”
117. See Sec. 2(1)(b), South African Space Affairs Act.
118. See Sec. 22(1)(i), South African Space Affairs Act.
119. Cf. Sec. 3, South African Space Affairs Act.
120. Law on Space Activity of Ukraine, No. 502/96-VR, 15 November 1996; *National Space Legislation of the World*, Vol. I (2001), at 36. See further F. G. von der Dunk & S. A. Negoda, Ukrainian national space law from an international perspective, 18 *Space Policy* (2002), 17.
121. Art. 10, Law on Space Activity of Ukraine. See also the Preamble.
122. See also Art. VIII, Outer Space Treaty.
123. Art. 3, 6th bullet, resp. Art. 4, 3rd bullet, Law on Space Activity of Ukraine. See also Art. 5, 2nd bullet.
124. Art. 8, Law on Space Activity of Ukraine.
125. Art. 18, 1st bullet, Law on Space Activity of Ukraine.
126. Art. 26, Law on Space Activity of Ukraine; see also Artt. 27, 28, as well as Art. 7. “Double assignment” is the term used here for “dual use,” i.e. wherever both civil and military application or use are directly possible.
127. An act about space activities, and for related purposes (hereafter Australian Space Activities Act), No. 123 of 1998, assented to 21 December 1998; *National Space Legislation of the World*, Vol. I (2001), at 197. The Act was amended a few times, the most recent version being as amended by amending legislation up to Act No. 8 of 2010; see http://www.austlii.edu.au/au/legis/cth/consol_act/saa1998167/notes.html.

128. See, resp., Secc. 11, 12, 14, & 15, Australian Space Activities Act. Further e.g. S. Freeland, *The Australian Regulatory Regime for Space Launching Activities: Out to Launch?* In *Proceedings of the Forty-Seventh Colloquium on the Law of Outer Space* (2005), 58–60.
129. See e.g. Secc. 11, 13, Australian Space Activities Act.
130. Cf. Sec. 3, Australian Space Activities Act.
131. Sec. 26(3)(g), Australian Space Activities Act.
132. See, resp., Secc. 35(2)(c), 43(3)(e), & 18(e), Australian Space Activities Act.
133. See Secc. 26(3)(f), 29(b), Australian Space Activities Act. Sec. 29(c) in addition requires, for the involvement of fissionable materials in the licensed operations under a launch permit, specific prior written approval by the Minister. See further Secc. 43(3)(d), 44(1)(b) & (c) for similar provisions with respect to authorisations of return of overseas-launched space objects.
134. See e.g. for the space license Secc. 22, 24, 25, Australian Space Activities Act.
135. See Sec. 30(2)(d), Australian Space Activities Act.
136. See Secc. 80, 81, Australian Space Activities Act.
137. See, resp., Secc. 22, 31, 38, Australian Space Activities Act.
138. Sec. 16 sub (b), Australian Space Activities Act.
139. Administrative Edict No. 27, 20 June 2001; *National Space Legislation of the World*, Vol. II (2002), at 377.
140. See further e.g. J. Monserrat, *Brazilian Launch Licensing and Authorizing Regimes*, in *Proceedings United Nations I International Institute of Air and Space Law Workshop on Capacity Building in Space Law* (2003), 97 ff.
141. Cf. e.g. Artt. 3, 6, 7(IV) & (V), 8(V), 14, Regulation on Procedures and on Definition of Necessary Requirements for the Request, Evaluation, Issuance, Follow-Up and Supervision of Licenses for Carrying out Launching Space Activities on Brazilian Territory (hereafter Brazilian Launch Regulation), part of Administrative Edict No. 27.
142. See Art. 6, Brazilian Launch Regulation, part of Administrative Edict No. 27.
143. See last sentence Art. 6, Brazilian Launch Regulation, part of Administrative Edict No. 27; cf. also Art. 7(V).
144. Art. 8(IV), Brazilian Launch Regulation, part of Administrative Edict No. 27.
145. See Art. 8(V), Brazilian Launch Regulation, part of Administrative Edict No. 27.
146. Agreement on Guidelines for the Transfer of Equipment and Technology Related to Missiles, done 16 April 1987; 26 ILM 599 (1987).
147. Art. 12, Brazilian Launch Regulation, part of Administrative Edict No. 27.
148. See Art. 14, Brazilian Launch Regulation, part of Administrative Edict No. 27.
149. Space Development Promotion Act (hereafter Korean Space Development Promotion Act), promulgated 31 May 2005, entered into force 1 December 2005; unofficial translation 33 *Journal of Space Law* (2007), at 175. See further Y. Lee, *A Review of the Space Development Promotion Act of the Republic of Korea*, 33 *Journal of Space Law* (2007), 123–74; D. H. Kim, *Space Law in Korea: Existing Regulations and Future Tasks*, 57 *Zeitschrift für Luft-und Weltraumrecht* (2008), 575–79.
150. Art. 1, Korean Space Development Promotion Act.
151. Art. 1, Korean Space Development Promotion Act.
152. See Art. 11(1), Korean Space Development Promotion Act.

153. Art. 11(4), resp. (3)(a), Korean Space Development Promotion Act. Cf. also Art. 8, on registration, e.g. paras. 3(i), 4.
154. Art. 4, Korean Space Development Promotion Act, provides: "This Act is applicable to matters relating to the promotion of space development and the use and management of space objects unless there are special provisions in other laws."
155. Cf. also Art. 18(1), Korean Space Development Promotion Act.
156. Art. 5(3), Korean Space Development Promotion Act.
157. Art. 6(2), Korean Space Development Promotion Act.
158. See Art. 7, Korean Space Development Promotion Act.
159. Art. 13(1)(c), Korean Space Development Promotion Act.
160. Art. 19(1), Korean Space Development Promotion Act. Art. 19(2) provides for a similar competence for authorities at a lower level than the Ministry, although in that case the Minister has the option to "rectify" the space development or not require such "rectification."
161. Art. 29(1), resp. (2), Korean Space Development Promotion Act.
162. For those interested in the author's views, reference may be had to F. G. von der Dunk, *Europe and Security Issues in Space: The Institutional Setting*, 4 *Space and Defense* (2010), 71–99.
163. Cf. Artt. V(1), XI(5.c), ESA Convention.
164. Art. II, ESA Convention.
165. This was essentially taken care of by involving a "Galileo security center" in the overall governance scheme for the Galileo system, as well as specific security-related regulations; see Preamble, 16th para.; Artt. 7, 13, 14, and 16, Regulation of the European Parliament and of the Council on the further implementation of the European satellite navigation programmes (EGNOS and Galileo), No. 683/2008/EC, of 9 July 2008; OJ L 196/1 (2008); also see Council Joint Action on aspects of the operation of the European satellite radio-navigation system affecting the security of the European Union, 2004/552/CFSP, of 12 July 2004; OJ L 246/30 (2004).
166. See further on this F. G. von der Dunk, *A European "Equivalent" to United States Export Controls: European Law on the Control of International Trade in Dual-Use Space Technologies*, 7 *Astropolitics* (2009), 101–34.
167. Treaty on European Union, Maastricht, done 7 February 1992, entered into force 1 November 1993; 31 ILM 247 (1992); OJ C 191/1 (1992).
168. See Artt. 10A-28, Treaty on European Union.
169. The WEU was established as the (previous) main focus of intergovernmental security cooperation in Europe by the Paris Agreements amending the Brussels Treaty, Paris, done 23 October 1954; 211 UNTS 342; UKTS 39 (1955) Cmd. 9498.
170. Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community (hereafter Treaty of Lisbon), Lisbon, done 13 December 2007, entered into force 1 December 2009; OJ C 306/1 (2007).
171. Treaty establishing the European Community as amended by the Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community (hereafter Treaty on the Functioning of the European Union), Lisbon, done 13 December 2007, entered into force 1 December 2009; OJ C 115/47 (2009). See e.g. Art. 2(4), Treaty on the Functioning of the European Union.
172. See further the analysis in *Europe and Security Issues in Space: The Institutional Setting*.

173. Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies, Wassenaar, done 19 December 1995, effective 12 July 1996; <http://www.wassenaar.org/>.
174. Council Regulation setting up a Community regime for the control of exports of dual use items and technology, No. 1334/2000/EC, of 22 June 2000; OJ L 159/1 (2000).
175. Council Regulation setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items, No. 428/2009/EC, of 5 May 2009; OJ L 134/1 (2009).
176. See in detail A European "Equivalent" to United States Export Controls: European Law on the Control of International Trade in Dual-Use Space Technologies, 110–24.
177. See Art. 189(2), Treaty on the Functioning of the European Union. Also *infra*, the analysis by B. Schmidt-Tedd, Authorisation of Space Activities after the Entry into Force of the EU Reform Treaty, section 2.