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## **Article VI of the Outer Space Treaty ‘in the European Context’**

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### **1. Introduction**

The theme of the 3<sup>rd</sup> Eilene M. Galloway Symposium on Critical Issues in Space Law clearly was a very appropriate one in view of the extraordinary career of Dr. Galloway. One of the key features of Article VI of the Outer Space Treaty<sup>1</sup> being the requirement of authorisation and continuing supervision of non-governmental entities’ “national activities in outer space”, Article VI represents a major aspect of the obligations of mankind, in particular the leading space-faring nations, to use outer space responsibly that have always been defended so staunchly by Dr. Galloway. It states that “activities of non-governmental entities shall require authorization and continuing supervision by the appropriate State Party to the Treaty”, and thus recognizes their proper place as part of the overarching paradigm of the responsible usage of outer space, to be guaranteed by one state or another. The present paper tries to analyse how this issue has been tackled in the specific European context, and whether perhaps something akin to a ‘European approach’ can be discerned here.

### **2. A ‘European context’ for Article VI?**

When reference is made to ‘the’, or even ‘a’, ‘European context’, the preliminary question always is: “*which* ‘Europe’”? For even if merely confining ourselves to outer space and activities of private entities in that sense, there would be a number of ‘Europes’ that could likely be at issue.

First amongst these would be the European Space Agency (ESA)<sup>2</sup>, as the general standard-bearer for European-wide space activities. Activities of ESA, itself an intergovernmental organisation, have amongst many other things given rise to the establishment of two further intergovernmental space organisations: EUTELSAT<sup>3</sup> for satellite communications – which has meanwhile been privatised<sup>4</sup> – and EUMETSAT<sup>5</sup>

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<sup>1</sup>. 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).

<sup>2</sup>. ESA was established by the 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.I.1; currently, it has 18 member states.

<sup>3</sup>. EUTELSAT was established by the Convention Establishing the European Telecommunications Satellite Organization (EUTELSAT), Paris, done 15 July 1982, entered into force 1 September 1985; Cmnd. 9069; Space Law – Basic Legal Documents, C.II.1; and the Operating Agreement Relating to the European Telecommunications Satellite Organization (EUTELSAT), Paris, done 15 July 1982, entered into force 1 September 1985; Cmnd. 9154; Space Law – Basic Legal Documents, C.II.2. During its heydays, shortly before privatisation, it had more than 45 member states.

<sup>4</sup>. See Convention Establishing the European Telecommunications Satellite Organization (EUTELSAT), done 15 July 1982, entered into force 1 September 1985, as amended 20 May 1999, amended version not yet entered into force but applied provisionally 2 July 2001; Space Law – Basic Legal Documents, C.II.1.

<sup>5</sup>. EUMETSAT was established by the Convention for the Establishment of a European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), Geneva, done 24 May 1983, entered into force 19 June 1986; as amended 14 July 1994, entered into force 27 July 1994; Cmnd. 9483; Space Law – Basic Legal Documents, C.III.1; 44 ZLW 68 (1995); currently it has 21 member states.

for satellite meteorology. For the sake of brevity, however, these two entities will be left out of the analysis at this point.

A second 'Europe' that, though coming from a quite different angle, also meets the eye as a potential flag-bearer for Europe in the present context is the European Community (EC), since 1992 part of the overarching European Union.<sup>6</sup> The Community essentially developed as an intergovernmental organisation *sui generis*, with certain competences that could be qualified as 'supranational' and the overriding aim to establish a liberalised economic level playing field by means of a common market.

Thirdly, from a yet different perspective 'Europe' simply means the geographical concept, a continent running from the Arctic waters in the north to the Mediterranean Sea in the south and from the Atlantic Ocean in the west to the Ural mountains in the East. From this point of view, however, Europe really still consists of a number of sovereign individual states, where then – with a view to the theme of the present Symposium – the focus would logically be on those states that have, somehow, developed a system for "authorization and continuing supervision" as is required by Article VI of the Outer Space Treaty, as opposed to those who are as of yet without such a system.

### **3. The 'Europe' of ESA**

The role and modes of operation of ESA, as an intergovernmental organisation essentially pooling the scientific, technical and financial resources of its member states, have been dealt with *in extenso* by many other books, contributions to books and articles, and will not be reiterated here.

Article VI of the Outer Space Treaty, in conjunction with Article XIII, provides for a somehow secondary legal status of intergovernmental organisations active in outer space such as ESA. Whilst such organisations under the former share international responsibility for such activities with their member states<sup>7</sup>, the latter makes clear that ultimately international organisations merely present a "framework" for these individual member states to conduct their activities within<sup>8</sup>.

For the present purpose, it is noteworthy firstly that ESA has declared its willingness, as a major player in space, to be bound by the rights and obligations of those follow-up treaties to the Outer Space Treaty where that option was offered: the Rescue Agreement<sup>9</sup>, the Liability Convention<sup>10</sup> and the Registration Convention<sup>11</sup>. The Moon

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<sup>6</sup>. The European Community was originally based on, especially, the Treaty of Rome, or Treaty establishing the European Economic Community (hereafter EC Treaty, where reference should be had to its currently ruling version), Rome, done 25 March 1957, entered into force 1 January 1958; 298 UNTS 11; after a number of important revisions most fundamentally changed by the Treaty on European Union, Maastricht, done 7 February 1992, entered into force 1 November 1993; 31 ILM 247 (1992); OJ C 191/1 (1992); its present legal status however is determined as per the Treaty of Nice amending the Treaty on European Union, the Treaties establishing the European Communities and certain related acts, Nice, done 26 February 2001, entered into force 1 February 2003; OJ C 80/1 (2001). The EC currently comprises 27 member states.

<sup>7</sup>. Art. VI, Outer Space Treaty, provides in relevant part: "When activities are carried on in outer space, including the Moon and other celestial bodies, by an international organization, responsibility for compliance with this Treaty shall be borne both by the international organization and by the States Parties to the Treaty participating in such organization."

<sup>8</sup>. Art. XIII, Outer Space Treaty, makes reference to "the activities of States (...) including cases where they are carried on within the framework of international intergovernmental organizations".

<sup>9</sup>. See Art. 6, 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

Agreement, though also offering such an opportunity, did not enjoy such treatment as only a few ESA member states are parties to that treaty themselves.<sup>12</sup>

Secondly, however, whilst the formulation of Articles VI and XIII of the Outer Space Treaty and the acceptance by ESA of rights and obligations under three other space treaties might leave open possibilities for ESA to be substantially involved in authorisation of private space activities, it should be realised that ESA is mainly an instrument for organising joint space programmes of the member states and for trying to provide some overall direction to the various individual and joint space programmes abounding in Europe.

The key concept of the ESA structure with a view to such space programmes, including any involvement of private actors, is the two-pronged approach of mandatory *versus* optional activities. Mandatory activities are those in which all member states participate, such as basic activities, science programmes potentially giving rise to actual space programmes, and information collection and dissemination tasks, to the financing of which all member states have to contribute as per a predetermined scale.<sup>13</sup> Optional activities, comprising *inter alia* all space operations themselves, by contrast allow for opt-out by individual member states as well as individual determination of their respective contribution for those who decide not to opt out.<sup>14</sup>

In either case, private industry only contributes as subcontracted developers and builders of software and hardware, and possibly integrators thereof. As soon as such soft- and/or hardware has to go into outer space, however, this is either taken care of by ESA itself or contracted out to other (launch service) providers. Whilst it is true that such launches are often contracted out to Arianespace, which is a European private company (often furthermore using technology developed by ESA and cooperating with ESA in many other ways); the relationship in a formal sense is still a purely contractual one, not that between a licensor and a licensee.<sup>15</sup>

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December 1968; 672 UNTS 119; TIAS 6599; 19 UST 7570; UKTS 1969 No. 56; Cmnd. 3786; ATS 1986 No. 8; 7 ILM 151 (1968); Declaration of 31 December 1975.

<sup>10</sup>. See Art. XXII, 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); Declaration of 23 September 1976; Space Law – Basic Legal Documents, A.III.2, p.1.

<sup>11</sup>. See Art. VII, 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); Declaration of 2 January 1979; Space Law – Basic Legal Documents, A.IV.4.2, p.2.

<sup>12</sup>. Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, New York, done 18 December 1979, entered into force 11 July 1984; 1363 UNTS 3; ATS 1986 No. 14; 18 ILM 1434 (1979); see Art. 16. Amongst the current 18 member states, only Austria, Belgium and the Netherlands are parties to the Moon Agreement; France in addition has signed but not ratified the Agreement.

<sup>13</sup>. See Artt. V(1) sub (a), XIII(1), ESA Convention.

<sup>14</sup>. See Artt. V(1) sub (b), XIII(2), ESA Convention.

<sup>15</sup>. Interestingly, in some measure the relationship between ESA and Arianespace in terms of substance does deal with issues typically included in licenses and other authorisations, such as liability and reimbursement thereof, but it is illustrative of the fundamental lack of competence of ESA in these respects that that relationship also involves the individual member states of ESA and in particular France, the state of nationality of Arianespace as well as the holder of sovereignty over the territory from which Arianespace operates; cf. e.g. the author's *Private Enterprise and Public Interest in the European 'Spacescape' – Towards Harmonized National Space Legislation for Private Space Activities in Europe* (1998), 155-61, 167-70, for an analysis of this construction.

Thus, no issue arises of a national activity in outer space conducted by a non-governmental entity, with reference to the phrasing of Article VI, requiring authorisation and/or continuing supervision by ESA – which in addition, as an organisation focused on scientific, technical, operational and financial cooperation, has no competences under the ESA Convention to license or otherwise exercise state-like authorising or supervising powers *vis-à-vis* private operators in any event.

#### **4. The ‘Europe’ of the European Community and the European Union**

Whilst ESA was not at all about pooling regulatory resources and competences at an international level, the European Community, also as later subsumed within the European Union, certainly was. From the beginning the founding treaties were not only meant to provide substantive rules and guidelines for individual member states and other actors in terms of market regulation and behaviour, but also to provide for the mechanisms to continuously enlarge and update such substantive regimes through the set-up of an elaborate institutional structure.

Thus, a Commission, a Council of Ministers and a European Parliament were created by the treaties, which in a complicated interplay were able to draft Regulations, Directives and Decisions overriding as relevant any national member state legislation and regulation on the point.<sup>16</sup> Furthermore, the European Court of Justice was created to adjudicate cases where EC-law rules were, presumably, violated by any relevant actor – including, as appropriate, individual member states.<sup>17</sup>

Whilst such regulatory power over economic activities – which, in principle, encompasses economic activities involving outer space – could have included establishment of an EC-level licensing process, and the possibility to thus deal with the authorisation and supervision of private activities in the terminology of Article VI of the Outer Space Treaty including such activities in outer space, that has remained largely theoretical even outside the domain of outer space.

The only area where space activities have obtained a clear-cut commercial character, being satellite communications, has indeed seen a half-hearted effort at the EC level to ensure that the licensing process of such activities – still exclusively a domestic matter – would not result in major distortions in the level playing field which was to result from the establishment of an Internal Market.

The process took off with a first Green Paper in 1987, calling for liberalisation of the environment for telecommunications,<sup>18</sup> as of yet excluding satellite communications in view of the special character of that sector; an omission which was quickly repaired when a second Green Paper three years later addressed satellite communications specifically along the same lines<sup>19</sup>. It took another four years, however, before the

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<sup>16</sup>. The role and competences of each of these main institutions are outlined in the EC Treaty; Artt. 211-219 for the Commission, Artt. 202-210 for the Council and Artt. 189-201 for the Parliament. The two main law-making mechanisms involving all three institutions are provided for in Art. 251 and Art. 252; the concepts of Regulations, Directives and Decisions in Art. 249.

<sup>17</sup>. See for the role and competences of the ECJ Artt. 220-245, EC Treaty, where Artt. 226, 227, 230, 232 & 234 essentially determine the scope of its jurisdiction.

<sup>18</sup>. Towards a Dynamic European Economy – Green Paper on the Development of the Common Market for Telecommunications Services and Equipment, Communication from the Commission, COM(87) 290 final, of 30 June 1987; OJ C 257/1(1987); as per Council Resolution on the development of the common market for telecommunications services and equipment up to 1992, of 30 June 1988, OJ C 257/1 (1988).

<sup>19</sup>. Towards Europe-wide systems and services – Green Paper on a common approach in the field of satellite communications in the European Community, Communication from the Commission, COM(90) 490 final, of 20 November 1990.

general economic principles asserted by that Green Paper led to a first piece of proper EC legislation, the 1994 Satellite Directive<sup>20</sup>, applying as its full title indicated some older Directives on the introduction of certain competition rules to the satellite communication sector.

Soon, the Commission in particular, driving this process of liberalising the European satellite communication markets, started to call for a harmonisation of the national processes of licensing the operators. This was considered an important prerequisite for realising an Internal Market for satellite communications without regulatory distortions following from the rather divergent conditions and fees imposed by the various relevant national licensing authorities. For a number of reasons, however, it did not manage to move beyond a half-way effort to harmonise national licensing processes; its original aim of an EC-wide licensing process principally conducted at the EC level rapidly disappeared behind the horizon.<sup>21</sup>

As a consequence, so far the increasing interest of the European Community in outer space and the benefits it could bring to economic activities on earth beyond the aforementioned applicability and application of competition law to satellite communications has mainly manifested itself through the lead which the Commission took in two major European space projects.

The first of these is Galileo, a joint programme to develop Europe's own, second-generation satellite navigation system together with ESA.<sup>22</sup> The cooperation with ESA in this context was institutionalised through the creation first of the Galileo Joint Undertaking<sup>23</sup>, then of the European GNSS Supervisory Authority<sup>24</sup>, and also gave rise to several international agreements with non-European states on cooperation in its context<sup>25</sup>.

However, interestingly enough the original aim to establish a concession allowing a private consortium to operate the Galileo satellite system and market its services – which would have been somewhat akin to a license, and would certainly have come to encompass authorisation and supervision mechanisms, including arrangements on

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<sup>20</sup>. Commission Directive amending Directive 88/301/EEC and Directive 90/388/EEC in particular with regard to satellite communications, 94/46/EC, of 13 October 1994; OJ L 268/15 (1994).

<sup>21</sup>. Cf. e.g. Commission Directive amending Directive 90/387/EEC with regard to personal and mobile communications, 96/2/EC, of 16 January 1996; OJ L 20/59 (1996); Decision of the European Parliament and of the Council on a coordinated authorization approach in the field of satellite personal communications systems in the Community, No. 710/97/EC, of 24 March 1997; OJ L 105/4 (1997); Directive of the European Parliament and of the Council on a common framework for general authorizations and individual licenses in the field of telecommunications services, 97/13/EC, of 10 April 1997; OJ L 117/15 (1997); Decision of the European Parliament and of the Council on the selection and authorisation of systems providing mobile satellite services (MSS); No. 626/2008/EC, of 30 June 2008; OJ L 172/15 (2008).

<sup>22</sup>. See e.g. Council Resolution on the European Contribution to the Development of a Global Navigation Satellite System (GNSS), of 19 December 1994; OJ C 379/2 (1994); and Green Paper on Satellite Navigation Applications, COM(2006) 769 final, of 8 December 2006.

<sup>23</sup>. See Council Regulation setting up the Galileo Joint Undertaking, No. 876/2002/EC, of 21 May 2002; OJ L 138/1 (2002).

<sup>24</sup>. See Council Regulation on the establishment of structures for the management of the European satellite radio-navigation programmes, No. 1321/2004/EC, of 12 July 2004; OJ L 246/1 (2004).

<sup>25</sup>. Such as the People's Republic of China (Cooperation Agreement on a Civil Global Navigation Satellite System (GNSS) – Galileo between the European Community and its Member States and the People's Republic of China, of 30 October 2003; Doc. Council of the European Union, 13324/03) and Israel (Cooperation Agreement on a Civil Global Navigation Satellite System (GNSS) between the European Community and its Member States and the State of Israel, of 2 June 2005; Doc. Council of the European Union, 9482/04).

liability, with the European GNSS Supervisory Authority in the supervisory role – had to be shelved as the commercial possibilities for operating a satellite infrastructure were insufficient for the time being to attract a concessionaire.<sup>26</sup>

The second major European space project driven by the Commission with the technical and operational support of ESA was the development of GMES (Global Monitoring for Environment and Security), which was recently re-christened Kopernikus and is also to result ultimately in a series of satellites to be launched, this time primarily for remote sensing purposes in the service of European policies on the environment and civil protection of various kinds.<sup>27</sup>

Finally, it should be noted that neither the European Community nor the European Union has ever declared its acceptance of rights and obligations under any space treaty, nor has it – as far as can be judged – ever seriously contemplated doing so.

### **5. The geographical Europe: a number of individual states**

That last conclusion, therefore, brings us to the geographical Europe and those states part of it that on an individual level have decided to implement in some comprehensive manner the obligation to authorise and continuously supervise space activities by non-governmental entities.

This is not the place to undertake an extensive and comprehensive analysis of the way in which the various states concerned have sought to implement the obligations arising under Article VI of the Outer Space Treaty *vis-à-vis* private enterprise by means of a national law, act or set or regulations; the present effort will confine itself to comparison on a select number of key issues which in a sense may serve as a yardstick with reference to such implementation.

These issues are basically fivefold: (1) the scope of the national law and the licensing obligation established by it in terms of (space) activities, which refers back to Article VI's applicability to "activities *in outer space*"; (2) the scope thereof in terms of persons and entities requiring a license under the national law, which refers back to the concept of "*national activities*" as propounded by Article VI; (3) how the specific issue of dealing with international third party liability and the related one of insurance thereof is dealt with, as the most tangible and directly *valuable* subjects to be addressed by authorisation and supervision; (4) the national entity responsible for the licensing process, hence for proper authorisation and supervision, which includes – from an international law perspective – registration of space objects involved; and (5) to the extent possible, the actual practice of application. Each of seven states geographically part of Europe (all being parties to the Outer Space Treaty moreover) will thus – summarily – pass scrutiny.

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<sup>26</sup>. Cf. Communication from the Commission to the European Parliament and the Council – Galileo at a Cross-Road: The Implementation of the European GNSS Programmes, COM(2007) 261 final, of 16 May 2007; Council Resolution on GALILEO, 2805<sup>th</sup> Transport, Telecommunications and Energy Council Meeting, Luxembourg, 6-8 June 2007; and Amended proposal for a Regulation of the European Parliament and of the Council on the further implementation of the European satellite radionavigation programmes (EGNOS and Galileo), Brussels, 4 April 2008; Interinstitutional File: 2004/0156 (COD), 8046/08.

<sup>27</sup>. Cf. Council Resolution on the launch of the initial period of global monitoring for environment and security (GMES), of 13 November 2001; OJ C 350/4 (2001); Communication from the Commission to the European Parliament and the Council – Global Monitoring for Environment and Security (GMES): Establishing a GMES capacity by 2008, COM(2004) 65 final, of 3 February 2004; and Communication from the Commission to the Council and the European Parliament – Global Monitoring for Environment and Security (GMES): From Concept to Reality, COM(2005) 565 final, of 10 November 2005.

## **6. Norway**

Norway, a state member of ESA but not of the European Union (having twice in the past voted not to accede), was the first European state to enact a national act on space, the Act on launching objects from Norwegian territory into outer space in 1969.<sup>28</sup> As the title already discloses, the scope of the Act *ratione materiae* is limited to launching activities; *ratione personae* the license obligation resulting from it applies to such activities conducted from Norwegian territory, vessels and aircraft, as well as conducted by nationals if operating from global commons.<sup>29</sup>

On arrangements for reimbursing the Norwegian state for liability claims resulting from authorised activities under the international liability regime, the Norwegian Act is silent, but that should not be surprising in view of the fact that the Act was enunciated before the 1972 Liability Convention offered any further detail on how the general principles on liability provided by Article VII of the 1967 Outer Space Treaty were to be applied. Presumably, experience with application of the Act has remained limited to the case of the *Norsk Romsentr*, being authorised to launch from the Andøya rocket launch facilities. Both are, however, more or less government-owned and -controlled entities, so that one might actually question whether such an authorisation was really necessary for the Norwegian government to fulfil its obligations under Article VI of the Outer Space Treaty.

## **7. Sweden**

Sweden, as the second European country historically speaking developing its national regime for authorising and supervising private space activities, was the first state both member of ESA and (now) the European Union<sup>30</sup> to do so: in 1982, both an Act on Space Activities and a Decree on Space Activities saw the light of day.<sup>31</sup>

In terms of the Act's scope *ratione materiae*, most noteworthy was the exclusion of the launch of sounding rockets of the otherwise comprehensive set of space activities requiring a license,<sup>32</sup> which were apparently not considered either to be likely undertaken with private involvement, or to present much of an international risk in liability terms. The license obligation was applied rather comprehensively also *ratione personae*, in being imposed both upon those undertaking any of the relevant activities from Swedish soil and upon those with the Swedish nationality.<sup>33</sup>

As to the issue of liability, the Swedish Act and Decree being enunciated a full ten years after the Liability Convention, in principle the Swedish government is entitled to full reimbursement of any international liability claim, although no obligatory insurance is provided for<sup>34</sup> – and hence in an actual case the Swedish government may end up

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<sup>28</sup>. Act on launching objects from Norwegian territory into outer space, No. 38, 13 June 1969; National Space Legislation of the World, Vol. I (2001), at 286.

<sup>29</sup>. See Sec. 1, Act on launching objects from Norwegian territory into outer space.

<sup>30</sup>. Sweden became a member of the EU in 1995 only, that is 13 years after it drafted its national legislation on space activities.

<sup>31</sup>. 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; and 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.

<sup>32</sup>. See Sec. 1, Act on Space Activities.

<sup>33</sup>. See Sec. 2, Act on Space Activities.

<sup>34</sup>. Cf. Sec. 6, Act on Space Activities.

with less than full reimbursement, simply because the licensee has run out of funds to compensate from.

The licensing regime is detailed to some degree by the Decree, which *inter alia* provides the National Board for Space Activities (NBSA) with the authority to monitor licenses granted by the Swedish government, as well as the obligation to run the national register of space objects.<sup>35</sup> The most important thing to note about implementation of the Swedish Act and Decree, however, is a matter for the future: Virgin Galactic's business-deal to start launching space tourists from the Kiruna launch facilities in 2012 will present the major test for the actual application of the Act, as it still leaves considerable leeway in its throughout concise formulation to determine the terms of an individual license.

## **8. The United Kingdom**

In 1986, the United Kingdom, another state member of both ESA and the European Union, enacted its Outer Space Act.<sup>36</sup> In terms of its application to a range of relevant activities, most notable was the explicit reference to "procuring the launch of a space object" as being included.<sup>37</sup> Also, the broad definition of "any activity in outer space" where a person is considered to conduct such an activity as soon as he "causes it to occur or is responsible for its continuing" leads to a rather sweeping scope of application – at least *ratione materiae*.<sup>38</sup> *Ratione personae*, namely, the scope is considerably less comprehensive, as the license obligation only extends to nationals undertaking the relevant activities, not for example to foreigners conducting them from British territory.<sup>39</sup>

As for relevant liability arrangements with a view to the international treaties, in principle full indemnification of the UK government is called for, and this time, contrary to the Swedish case, the licensing authority is expressly authorised to require insurance to cover such liability.<sup>40</sup> That licensing authority, in fact, is the British National Space Centre (BNSC), which also keeps the national register further to the relevant provisions of the Act under a mandate from the Secretary of State.<sup>41</sup>

The opportunity to obtain a license under the Outer Space Act has been made good use of, as since 1989 more than twenty licenses have been issued by the BNSC, in addition to at least ten more by the Governors of UK Overseas Territories.<sup>42</sup> Was the fee requested for licensing originally £ 1,000, in the following years it rose to £ 6,500, showing – if anything – a realisation that the process of licensing turned out to be more expensive than originally envisaged, or was getting more complicated as time moved on and more specific requirements were added.

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<sup>35</sup>. See Sec. 3, Act on Space Activities & Sec. 2, Decree on Space Activities; resp. Sec. 4, Decree on Space Activities.

<sup>36</sup>. 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.

<sup>37</sup>. Sec. 1(a), Outer Space Act. It may be noted that Art. I(c), sub (i), Liability Convention, refers to "A State which (...) procures the launching of a space object" as part of the definition of the "launching State".

<sup>38</sup>. Secc. 1(c), resp. 13(2), Outer Space Act.

<sup>39</sup>. See Secc.1, 2 & 3(1), Outer Space Act; see for the definition of 'UK national' Sec. 2.

<sup>40</sup>. See Sec, 10(1), resp. 5(2) sub (f), Outer Space Act.

<sup>41</sup>. Cf. Secc. 3, resp. 7(1), Outer Space Act.

<sup>42</sup>. Cf. Secc. 2(2) sub (a), 13(1) sub (a), (b), Outer Space Act.

As for the insurance issue, the general policy developed by the UK authorities was to oblige the licensee to take out an insurance policy covering reimbursement of the UK government up to £ 100,000,000 – noting again that under the Liability Convention liability is essentially unlimited. Noting furthermore that for example in the case of US launch licenses the maximum insurance requirement could be capped to the extent third-party liability coverage would be available at reasonable rates,<sup>43</sup> the UK government at the time noted that such coverage was available up to some US\$ 250,000,000 for the launch phase and some US\$ 400,000,000 for in-orbit operations.

## **9. The Russian Federation**

Russia is neither a member state of ESA nor of the European Union, so it is one of the two European states considered here that are only part of geographic Europe. In 1993 it enunciated the Law of the Russian Federation on Space Activities,<sup>44</sup> providing the basic framework for dealing with the newly introduced principles of privatisation and market economy as they were also impacting the space industrial complex.

The Russian Law is characterised by its general and broad scope, as well as by certain ambiguities. For example, the definition of “space activities” as constituting the substantive scope of the Law, encompasses amongst others all “kinds of activities performed with the aid of space technologies” and the “creation (including development, manufacture and test) of, as well as using and transferring space technics, space technologies, other products and services necessary for carrying out space activities”.<sup>45</sup> Similarly, the license obligation extends to all such activities “under the jurisdiction of the Russian Federation”, further detailed as “the space activities of organizations and citizens of the Russian Federation or the space activities of foreign organizations and citizens under the jurisdiction of the Russian Federation, if such activities include tests, manufacture, storage, preparation for launching and launching of space objects, as well as control over space flights”.<sup>46</sup> In addition, it should be noted, jurisdiction is expressly extended to space objects duly carried on the Russian registry.<sup>47</sup>

The precise arrangements on handling liability and reimbursement issues are yet to be clarified, but as far as the Law itself is concerned, the indemnification of the Russian government is in principle unlimited, coupled to compulsory insurance coverage up to a level to be decided – so far, presumably, on a case-by-case basis.<sup>48</sup> It is the Russian Space Agency *Roskosmos* which is charged with running the licensing process, as well as the national register of space objects.<sup>49</sup>

A few words finally on Russian practice. While not many details are readily available, already a number of years ago a major insurance company, Megaruss, could report on having been involved in over 60 contracts in the decade or so following 1992, having worked with a rough schedule for the limits to *de facto* reimbursement of liability

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<sup>43</sup>. See Sec. 70112(a)(3)(B), Commercial Space Transportation – Commercial Space Launch Activities, 49 U.S.C. 70101 (1994).

<sup>44</sup>. Law of the Russian Federation on Space Activities, No. 5663-1, 20 August 1993, effective 6 October 1993; National Space Legislation of the World, Vol. I (2001), at 101.

<sup>45</sup>. Art. 2(1) & (2), Law of the Russian Federation on Space Activities.

<sup>46</sup>. Artt. 1(1), 9(2), Law of the Russian Federation on Space Activities.

<sup>47</sup>. See Art. 17(2), Law of the Russian Federation on Space Activities.

<sup>48</sup>. Cf. Art. 30(2) & (4), Law of the Russian Federation on Space Activities.

<sup>49</sup>. See Artt. 6(2), 17(1), Law of the Russian Federation on Space Activities.

claims which in terms of US\$ ran between 80,000,000 for a Start launch vehicle and 300,000,000 for a Proton (the heaviest launch vehicle in the Russian market).

## **10. The Ukraine**

For essentially the same reasons as Russia – because the Ukraine after Russia was the largest heir of assets and know-how of the previous Soviet space complex – the Ukraine drafted its national Law of the Ukraine on Space Activity<sup>50</sup> in 1996. Also the result was very much in line with the Russian Law which had been announced three years earlier: the definition of “space activity” was similarly broad<sup>51</sup>, the license obligation equally pertained to activities undertaken “in the Ukraine or, under jurisdiction of the Ukraine, abroad”<sup>52</sup>, and liability reimbursement of the government in case of an international claim is unlimited in principle, coupled to a compulsory insurance subject to a limit<sup>53</sup> – all more or less like in the case of Russia, though generally speaking formulated in a more straightforward fashion.

In this case, it is the National Space Agency of the Ukraine (NSAU) which grants, monitors and if necessary suspends and cancels licenses,<sup>54</sup> thus implementing the obligations resting upon the Ukraine under Article VI of the Outer Space Treaty. It may be said, quite comprehensively so; again like Russia, as following from the scope discussed above, the phrase “national activities” for example is apparently taken to refer to all activities falling within Ukrainian jurisdiction, hence those subject to legal and factual possibilities of control and supervision.

A final point where the Ukraine does largely follow the Russian approach concerns the registration: the obligation to register is expressly subject to exceptions where another state already takes care of registration as relevant.<sup>55</sup> The reason behind this is the involvement of Ukrainian space industry partners in the international launch consortium Sea Launch, led by the US company Boeing, which was being developed at the time – just as Sea Launch also comprised Russian partners.

## **11. Belgium**

The next state in geographical Europe, member of ESA as well as of the European Union, creating its national system of authorisation and continuing supervision of private space activities was Belgium, with its Law on the activities of launching, flight operations or guidance of space objects in 2005.<sup>56</sup>

The license obligation established by the Law as the major instrument for control extends principally to activities conducted from Belgian territory; in addition it applies to activities conducted by Belgian nationals outside of Belgium if such is provided for by special agreement – presumably with the state from whose territory such activities

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<sup>50</sup>. Law of the Ukraine on Space Activities, No. 502/96-VR, 15 November 1996: National Space Legislation of the World, Vol. I (2001), at 36.

<sup>51</sup>. Cf. Art. 1, 1<sup>st</sup> bullet, Law of the Ukraine on Space Activities.

<sup>52</sup>. Art. 10, Law of the Ukraine on Space Activities.

<sup>53</sup>. See Artt. 24, 25, Law of the Ukraine on Space Activities.

<sup>54</sup>. See Art. 10, also Art. 20, Law of the Ukraine on Space Activities.

<sup>55</sup>. Cf. Artt. 13, 14, Law of the Ukraine on Space Activities. It may be noted here that the Registration Convention does not allow for double registration; cf. Art. II(2). In the case of Russia, a more ambiguous provision referred to the possibility to deal with such an issue under an international agreement; see Art. 17(4), Law of the Russian Federation on Space Activities.

<sup>56</sup>. Law on the activities of launching, flight operations or guidance of space objects, 17 September 2005, adopted 28 June 2005.

would take place.<sup>57</sup> *Ratione materiae*, the obligation covers “the activities of launching, flight operations and guidance of space objects”, where “‘flight operation’ and ‘guidance’ mean any operation relating to the flying conditions, navigation or evolution in outer space of the space object, such as the control and correction of its orbit or its trajectory”.<sup>58</sup>

Regarding reimbursement by the licensee of the government in case of international liability claims addressed towards the latter, as the Law is the first European one making explicit reference here both to Article VII of the Outer Space Treaty and to the Liability Convention, it is in principle unlimited.<sup>59</sup> As far as the Law itself is concerned, there is no obligation to take out insurance, but the appropriate Minister may, in granting a license, “create an obligation for insurance to be taken out in favour of third parties to cover the damage that may result from the activities authorised by him”.<sup>60</sup> That Minister is the Minister “with responsibility for space research and its applications in the framework of international cooperation”, holding the general authority to grant authorisations, suspend and/or cancel them, as well as to take care of the “National Register of Space Objects”.<sup>61</sup>

## **12. The Netherlands**

Where Belgium has preceded, its Northern neighbour the Netherlands, ESA and EU member as well, can not stay far behind, and in 2007 its national Law Incorporating Rules Concerning Space Activities and the Establishment of a Registry of Space Objects entered into force.<sup>62</sup> In terms of its scope *ratione materiae*, it is noteworthy that it may come to include the “organization” of space activities as such<sup>63</sup> – which especially refers to the plans to conduct space tourism flights from the ‘Dutch’ Caribbean, organised from the European part of the Netherlands.<sup>64</sup> *Ratione personae*, the licensing obligation pertains to those conducting such activities from Dutch territory, which includes for this purpose ships and aircraft registered in the

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<sup>57</sup>. See Art. 2(1), resp. (2), Law on the activities of launching, flight operations or guidance of space objects.

<sup>58</sup>. Art. 2(1), resp. Art. 3(5), Law on the activities of launching, flight operations or guidance of space objects.

<sup>59</sup>. See Art. 15(1), Law on the activities of launching, flight operations or guidance of space objects. Art. 15(3) allows the state to cap such reimbursement liability, although § 4 requires the licensee “to comply with the conditions attached to his authorization” in order to be able to enjoy the benefits of such a cap.

<sup>60</sup>. Art. 5(2), Law on the activities of launching, flight operations or guidance of space objects.

<sup>61</sup>. Art. 3(6), resp. Art. 14(1), Law on the activities of launching, flight operations or guidance of space objects. Art. 14(2) & (3) spell out further details of the registration, *inter alia* faithfully copying the exact terms of Art. IV(1), Registration Convention, but then going well beyond those to take care of many potential scenarios regarding private involvement in space objects thus registered.

<sup>62</sup>. Law Incorporating Rules Concerning Space Activities and the Establishment of a Registry of Space Objects, 24 January 2007; 80 *Staatsblad* (2007), at 1.

<sup>63</sup>. See Sec. 2(2.b), Law Incorporating Rules Concerning Space Activities and the Establishment of a Registry of Space Objects. Space activities themselves are defined as “the launch, the flight operation or the guidance of space objects in outer space”, Sec. 1(b).

<sup>64</sup>. It should be noted here that the Kingdom of the Netherlands, which ratified the five space treaties, also includes a few small remnants of its colonial empire in the Caribbean region that internally hold a special status, including some measure of autonomy on a number of issues. Whilst externally the Netherlands is the state for example responsible and liable also for activities conducted from those Caribbean islands, internally it is not automatically entitled to impose domestic legislation regarding space activities to that extent.

Netherlands.<sup>65</sup> Furthermore, that obligation *can* be made applicable to Dutch nationals if active in the territory of states not parties to the Outer Space Treaty<sup>66</sup> – in other words, where no other state may be an obvious “appropriate State” to undertake the authorisation and continuing supervision required by Article VI of the Outer Space Treaty.

As for the applicable liability arrangement, the licensee is required to offer redress to the Dutch government up to the value of the sum insured,<sup>67</sup> whereas in this respect “the prospective holder shall have and maintain what Our Minister considers to be the maximum possible cover for the liability arising from the space activities for which a licence is requested. Account is taken here of what can reasonably be covered by insurance.”<sup>68</sup>

Finally, it is the Radiocommunications Agency, part of the Dutch Ministry of Economic Affairs, which serves as the entity taking care of the licensing applications and procedures, as well of registration of space objects involved as appropriate with a view to the Registration Convention.<sup>69</sup>

### **13. Concluding remarks**

Whilst the above analysis has addressed seven European states having taken fundamental steps to implement relevant obligations under the space treaties, as a matter of fact there is an eighth: France, first amongst a few equals in terms of space activities at least amongst the ESA and EU member states, which has even more recently than the Netherlands enunciated a comprehensive national law dealing with these issues *vis-à-vis* private entities. Since the new French law however is covered in much more detail by the paper of Mr. Philippe Clerc presented to the Symposium, it will not be addressed here.

Without discussing the French law as such therefore, there is nevertheless one point for discussion which the French case gives rise to that is of interest for the present analysis. The seven states referred to above, and since recently also France, have all implemented the obligations stemming from Article VI of the Outer Space Treaty by means of a comprehensive and – at least at the highest level transparent – law. At the same time it may be noted there is a principled alternative to such approach to exercising authorisation and continuing supervision: that of *de facto* control – and this was the road France has taken until recently. Arianespace and SPOTImage so far are the two main private entities with French nationality and operating from French territory conducting space activities – and both had CNES, the French national space agency, as their largest single shareholder. The almost day-to-day control which CNES could consequently exercise over these companies’ activities took care of implementation of the international obligations at issue satisfactorily (at least until recently).

Whilst France has now, finally, taken the step towards a comprehensive national space law, such step is still missing in the three other major space-faring nations in Western

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<sup>65</sup>. See Sec. 2(1), Law Incorporating Rules Concerning Space Activities and the Establishment of a Registry of Space Objects.

<sup>66</sup>. See Sec. 2(2.a), Law Incorporating Rules Concerning Space Activities and the Establishment of a Registry of Space Objects.

<sup>67</sup>. See Sec. 12(2) & (3), Law Incorporating Rules Concerning Space Activities and the Establishment of a Registry of Space Objects; following § 1 which provides for the generic reimbursement obligation.

<sup>68</sup>. Sec. 3(4), Law Incorporating Rules Concerning Space Activities and the Establishment of a Registry of Space Objects.

<sup>69</sup>. Cf. Sec. 1(a), 3(1), 4-8, resp. Sec. 11, Law Incorporating Rules Concerning Space Activities and the Establishment of a Registry of Space Objects.

Europe: Germany, Italy and Spain. Where Germany at least has created a national act focusing on important security aspects of one space activity, that of remote sensing<sup>70</sup>, Italy and Spain currently have not moved beyond the realm of academic discussion in this area. One can really wonder, whether any 'European' approach to application and implementation of Article VI of the Outer Space Treaty without those major space-faring states would be a sensible concept.

Such a European approach would not likely result either from ESA policies, or even from developments in the context of the European Union which does not seem ready yet to 'implement' that Article in practice.<sup>71</sup> Consequently, the European context for application and implementation of Article VI will remain a mixed landscape for the time being, driven predominantly by national concerns and competences, where, as briefly analysed, a number of considerable divergences exist even between those states that have, at least, established a national space law.

Such divergences are clearest and most pronounced in such areas as the scope of the licensing obligation, both *ratione materiae* and *ratione personae*, and the handling of insurance – whether an obligation to take out insurance is imposed on the licensee or not; whereas in areas such as liability reimbursement (which is usually unlimited, at least in principle) and the creation of a dedicated entity for licensing and registration purposes there, apparently, seems to be a larger measure of harmonisation. Perhaps the ultimate irony is that precisely those two states *only* part of geographical Europe, and not of the integrative 'platforms' of ESA and the European Union, show the largest measure of commonality: the Russian Federation and the Ukraine – for obvious historic reasons.

In any event, it will take considerable more time and effort before anything like a substantive and detailed European *approach* to dealing with Article VI's obligations will arise, as beyond the general high-level understanding that issues like liability, insurance, licensing procedures and registration requirements should be dealt with in a sensible fashion. The European *context*, consequently, is precisely that: a haphazard, fractured and almost organic process whereby many forces of a more traditional sovereign nature are sometimes in agreement, sometimes not, on the need for more European coherence, sometimes out of necessity or by default, sometimes also stemming from some higher ideals. That conclusion, however, for better or worse is not confined to matters of outer space, space activities and the Outer Space Treaty alone.

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<sup>70</sup>. Act Protecting Against the Endangerment of German Security Through the Proliferation of High Resolution Aerial Imagery of the Earth, 23 November 2007, effective 1 December 2007; Federal Gazette (BGBl.) Year 2007 Part I No. 58, of 28 November 2007.

<sup>71</sup>. Whilst the newest treaty trying to further develop the legal basis for the European Union, the Lisbon Treaty, does contain some clauses on EU competence in matters of space, those are far too vague to expect them to give rise rapidly to a competence at the EU level to 'authorise' and 'continuously supervise' private space activities. Furthermore, the fate of the Lisbon Treaty itself as of this writing is still uncertain as a consequence of the recent Irish 'no'.