2006

Towards Monitoring Galileo: The European GNSS Supervisory Authority *in statu nascendi* = Zur künftigen Überwachungsagentur des Galileo Systems, Vers une autorité de surveillance du système Galileo

Frans G. von der Dunk
University of Nebraska - Lincoln, fvonderdunk2@unl.edu

Published in *Zeitschrift für Luft- und Weltraumrecht* (2006) 55: 100-117.

Towards Monitoring Galileo: The European GNSS Supervisory Authority in statu nascendi = Zur künftigen Überwachungsagentur des Galileo Systems, Vers une autorité de surveillance du système Galileo

by Dr. Frans G. von der Dunk, Leiden*

1. Introduction

There is little doubt that one of the most interesting and revolutionary, but also complicated and challenging space projects of today is Galileo, Europe's own full-fledged second-generation navigation satellite system. Developed jointly by the European Union through the Commission and the European Space Agency, Galileo should by the end of the decade have thirty operational satellites in middle-earth-orbits providing timing, positioning and navigation signals across the globe.[1]

From the very beginning Galileo was envisaged in particular by the Commission as a public-private-partnership (PPP). On the one hand, a private concessionaire should operate the system as of full operational capability (originally scheduled for 2008, but more likely to occur not until a few years thereafter) and provide, market and sell its services – the Open Service (OS), the Commercial Service (CS), the Safety-of-Life Service (SOL), the Public Regulated Service (PRS) and a contribution to existing Search-and-Rescue services (SAR).[2] On the other hand, a public body should monitor all such activities and the evident public interests in them – keeping them safe, secure and in mankind's interest in general.

Such a public side to the PPP-equation was given its first embodiment with the creation of the Galileo Interim Support Structure (GISS) in 2001. The GISS was essentially a number of ESA officials being seconded under Commission funding (and control) to supervise and guide the various projects under the EU's Fifth Framework Programme supporting the definition and development phase of Galileo.

---

*Director Space Law Research, International Institute of Air and Space Law, Leiden University. This Article forms part of the Leiden Faculty of Law research programme "Securing the rule of law in a world of multilevel jurisdiction: coherence, institutional principles and fundamental rights."

[1] See for a general overview of the Galileo project and its status e.g. the website of the Commission's DG TREN, at http://europa.eu.int/comm/dgs/energy_transport/galileo/index_en.htm.

[2] See for a summary description of the key features of each of these five services e.g. the present author's Quis vadit cum vobis, Galileo? – Institutional Aspects of Europe's Own Satellite Navigation System, in *Proceedings of the Forty-Sixth Colloquium on the Law of Outer Space* (2004), 361-2.

The major task of the GISS ended up to be dealing with the intricacies of what had become the GALILEI Study, a cluster of originally separate projects dealing with key Galileo issues.

A next level of institutionalisation was achieved with the establishment of the Galileo Joint Undertaking (GJU), a unique daughter entity of ESA and the European Commission as the two principal international entities behind Galileo.[3] The GJU kick-started the next phase of Galileo by, most fundamentally, initiating and supervising the tendering process for the private Galileo operator, which was to lead to the signing of a concession contract by the end of 2005 or shortly thereafter. In addition, the GJU should prepare the introduction of Galileo more generally speaking, which included responsibility for the guidance of a number of Galileo-related research projects under the EU's Sixth Framework Programme.[4]

Currently, the third stage of institutionalisation has been given effect by means of the creation – at least on paper – of the European GNSS Supervisory Authority (EGSA) in 2004.[5] With the proper start of operations of EGSA, expected by mid-2006 or shortly thereafter, the GJU will be dissolved. Contrary to EGSA, the GJU was from the beginning envisaged to be a temporary entity.[6]

The current article tries to provide a first, rather preliminary and provisional evaluation of what EGSA will be able to do, by way of supervision of the private operation of the Galileo system – and hence also what it will likely not be able to do.

2. The Recommendations Coming from the GALILEI Study Cluster

Following up on the general intention of the European Commission to establish a public supervisor of the Galileo system, the GALILEI Study cluster studied the various issues involved in some detail. Where precisely would such a public supervisor – dubbed 'Galileo Supervisory Authority (GSA)' at the time – have to play its role, what should be its competencies, and how should its legal/institutional relationship to the private operator be structured?

The Legal/Institutional Task within the Study cluster in its final deliverable came up with a number of quite specific recommendations in this respect,[7] addressed to the Commission as the main political power behind Galileo and under the EC Treaty

---

[3] See Council Regulation setting up the Galileo Joint Undertaking (hereafter GJU Regulation), No. 876/2002/EC, of 21 May 2002; OJ L 138/1 (2002).

[4] Cf. e.g. Art. 2(3), (4), GJU Regulation.

[5] See Council Regulation on the establishment of structures for the management of the European satellite radio-navigation programmes, (hereafter EGSA Regulation) No. 1321/2004/EC, of 12 July 2004; OJ L 246/1 (2004).

[6] See also Art. 20, GJU Regulation.

[7] Recommendations and Conclusions arising from Task I, Legal and Institutional Issues, of the GALILEI Study Cluster (hereafter Recommendations and Conclusions), DD-120, v. 2.1, of 24 July 2003.

under the EC Treaty endowed moreover with extensive relevant, and to some extent autonomous legislative competencies. According to the Recommendations, the role of the envisaged GSA "would have to focus on:

1. providing the political clout at the international level necessary to enhance, wherever necessary through international legal agreements, the business opportunities for the GOC [the future concessionaire], especially with regard to OS [the Open Service] and CS [the Commercial Service];
2. ensuring the specific European public interests in GALILEO are duly respected by the GOC's operations and activities, especially when it comes to SOL [the Safety-of-Life Service], PRS [the Public Regulated Service] and the contribution to SAR [the Search-and-Rescue Service];
3. ensuring a proper and generous liability regime, preferably including a Compensation Fund and monitoring such a Fund itself, alternatively directly ensuring compensation, for relevant types of damage occurring in the course of GALILEO activities and operations;
4. ensuring a proper certification scheme as a specific mean to enhance the overall trust of service providers, users, consumers and the public at large in GALILEO; and
5. ensuring any bankruptcy or other market failure of the GOC would not unduly prejudice the overall interests of the GALILEO core states in GALILEO, preferably through ownership of the system."[8]

Further, the GSA "should:

6. be granted clear and substantial international legal personality, in order to act as grantor of the concession (and related legal instruments), which in turn requires a sound legal basis, in the long run preferably of a GALILEO Convention, in the short, run probably by way of extension of the JU [the Galileo Joint Undertaking], of EC law;
7. not come to be subsumed under, viz develop out of the EU institutional structure for reasons of independence and separation of functions vis-à-vis the GALILEO Regulator [the Recommendations and Conclusions referred to a need for a Galileo Regulator in addition to a Supervisory Authority], but (preferably) be based upon a GALILEO Convention;
8. be provided with a set of competencies similar to those of the GNSS Entity under the Eurocontrol Framework Agreement, for monitoring the GOC to consequently ensure the implementation of the recommended GALILEO liability contractual agreement copying and adapting the Eurocontrol Framework Agreement for the much wider context of GALILEO service provision;
9. serve as an instrument for states participating in GALILEO to bear liability in excess of that borne by the GOC or liabilities under insurance policy exclusions, and for dealing with further options such as a dedicated compensation amount funded by parties other than the participating states through a Compensation Fund; Recommendations and Conclusions, 234-5.

10. with a view to possible liability claims for negligence arising on its part, establish contractual relations [with] non-GALILEO core states in order to deal with such liabilities, with appropriate competencies provided for by the GALILEO Convention;
11. in view of the likelihood of claims against GALILEO being class actions, requiring substantial amounts to repair the alleged damages, try to include a specific portion on punitive damages in the United States in any consideration of applying a possible public compensation mechanism;
12. fulfil the role of guarantor of the service under any service guarantees to be offered by the GOC, the relevant details thereof to be laid down in the Concession Agreement and to be referred to by the GALILEO Convention; and
13. be provided with certain competencies regarding IPR protection, enforcement and third-party claims, either diplomatically/politically or juridically, using its public international status for the benefit of the GOC."[9]

It is these thirteen recommendations which can serve as a crude yardstick for the present paper to evaluate the actual version of the GSA which has been created: the European GNSS Supervisory Authority, EGSA for short.

3. The European GNSS Supervisory Authority: an Overview

On 12 July 2004, a Council Regulation on the establishment of structures for the management of the European satellite radio-navigation programmes effectively established the EGSA.[10]

EGSA should take care of the evident public interests in Europe involved in building and maintaining the Galileo system in the first place (e.g. security11, safety and general economic progress), as well as of the international aspects, generally speaking by exercising some form of control over the concessionaire.12 Indeed, EGSA will conclude the final concession contract and thus license the concessionaire.13 In this respect, it may be deemed to comply rather well, generally speaking, with Recommendation # 2, calling for the relevant public interests to be sufficiently taken into consideration by the private operator's activities and his conduct of

---

[9] Recommendations and Conclusions, 235. The numbering of the Recommendations has been changed as compared with the original so as to allow for easier reference throughout the current paper.

[10] See in particular Art. 1, EGSA Regulation.

[11] Art. 7, GJU Regulation, provides for the establishment of a Galileo System Security Board composed of one representative from each EU member state plus a representative from the Commission, which has authority over GJU activities "for all questions relating to the security of the system"; see Art. 18, Statutes of the Galileo Joint Undertaking, Annex to the GJU Regulation (hereafter GJU Statutes).

[12] See in general e.g. EGSA Regulation, Art. 1, 2(1)(j), also recital 5; Communication from the Commission to the European Parliament and the Council – Progress report on the GALILEO research programme as at the beginning of 2004, COM(2004) 112 final, of 18 February 2004, 18.

[13] See Art. 2(1)(a), EGSA Regulation.

business. Still, any in-depth analysis on this point would have to wait until the concession has been finalised and the relevant details thereof would be made available for scrutiny from this perspective.

In addition, when taking over from the GJU EGSA will become the owner of the Galileo satellite system itself.[14] This will ensure that any eventual commercial failure of the concessionaire would not jeopardise at least the provision of those Galileo services that are indispensable from a safety and security perspective; the system itself would never become subjected to any legal consequences normally following from such a failure like an attachment to satisfy creditors. This clause takes care in a rather comprehensive manner of Recommendation # 5, focusing precisely on such bankruptcy and market failure risks. In addition, this seems to heed Recommendation # 2 as well, as a commercial failure would represent one of the most important risks inherent in the private operation of Galileo from the public perspective.

A further central element of the public monitoring role of EGSA vis-à-vis the concessionaire concerns the issue of certification for safety and security purposes. Recommendation # 4 in this respect called for "a proper certification scheme as a specific mean to enhance the overall trust of service providers, users, consumers and the public at large" in the Galileo system, the institutional structure running it and the services to be provided by it. Here, the EGSA Regulation does provide for a relevant task of EGSA, namely to "ensure that the components of the system are duly certified; it shall empower the appropriate authorised certification bodies for issuing the relevant certificates and monitoring the respect of related standards and technical specifications."[15] Furthermore, with a view specifically to security issues, EGSA shall also define security specifications and cryptography conditions, and act as "the European GNSS security accreditation authority."[16] Finally, the justification of EGSA as a public oversight body would be found in the possibility to offer unlimited or at least very generous liability acceptance in the last resort to value-added service providers and end-users (depending upon the outcome inter alia of the concession negotiations), and to enhance trust by the public at large in the system (with respect to such issues as certification and safety licenses). The liability issue is further dealt with infra;[17] at this point it should be noted that also for the extent in which Recommendation # 3 is taken into account, further analysis would have to wait for the details of the concession. The foundations for a "proper and generous liability regime" are to be laid down in the concession reflecting the respective acceptance by the public and private sides to the PPP of their due share of such a liability, which could then to the extent necessary be reflected in contracts and/or EU legislative measures. The concession at least offers the

---

[14] See Art. 3(1), EGSA Regulation.

[15] Art. 2(1), sub (h), EGSA Regulation.

[16] Art. 2(1), sub (j), (ii), (iii), and (v), EGSA Regulation.

[17] See para. 6.

instrument to achieve that, as part of the interests on the public side in such a regime.

4. The Legal Basis for the European GNSS Supervisory Authority

The next point for analysis is the legal basis for EGSA, that is the EGSA Regulation. Its enunciation directly touches upon Recommendation # 7, which expressed a preference for a Galileo Convention as an independent international legal instrument over a Regulation which, ipso facto, would make EGSA part of the institutional structure of the European Union.[18]

This would not necessarily preclude a certain measure of independence from the main EU organs, as will be seen infra when the next issue, of EGSA's legal personality, will be touched upon – although it might make a role for EGSA as an independent guarantor of Galileo services, following Recommendation # 12, much more difficult to realise. Also, the original idea of establishing a distinct Galileo Regulator as included in Recommendation # 7 has been transformed, in that most of its intended regulatory functions are actually to be taken care of by EGSA.[19] Since EGSA will not itself become involved in the operations of the Galileo system directly, let alone the marketing and sales of its services and all it entails, to that extent the incorporation of EGSA into the general EU structure may not be that problematic anymore. Finally, even the GALILEI Study acknowledged that a full-fledged convention would take much time, so that an EU Regulation would at least present a viable interim solution.

Nevertheless, the absence of an underlying convention in the end may lead to serious complications. A convention from a theoretical vantage point would at the outset create a much more coherent and transparent legal structure, with the added bonus of being more flexible and straightforward in cases where third states may wish to become involved at this level. This is an issue in the case of Galileo, in view of Galileo's fundamental objective to provide services world-wide and the large measure of interest on the part of third states consequently to become involved.

In the case of the GJU, this has already led to the accession of the People's Republic of China and Israel.[20] The relevant agreements on membership of sion and ESA jointly as the two 'parent organisations' and controlling shareholders of the GJU,

---

[18] See also e.g. Art. 1, EGSA Regulation, speaking of a "Community agency"; Art. 4(1), referring to EGSA as "a body of the Community"; Art. 13, applying relevant EU financial rules to EGSA; and Art. 15, making the Protocol on Privileges and Immunities of the European Communities applicable.

[19] Cf. e.g. Art. 2(1), sub (a), (c), (h) and (j), EGSA Regulation.

[20] See, resp., 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 (hereafter EC-PRC Cooperation Agreement), of 30 October 2003; Doc. Council of the European Union, 13324/03; Cooperation Agreement on a Civil Global Navigation Satellite System (GNSS) between the European Community and its Member States

the GJU however were concluded neither by the GJU itself, nor by the Commisbut by the Commission alone.[21] The EGSA Regulation offers the same possibility of accession by third states,[22] but such a construction in the case of the GJU has immediately brought some major problems to the fore – noticeably in two areas.

The accession of any third state most fundamentally would engender substantial discussion at the highest political levels, between the EU and ESA member states as well as vis-à-vis the United States, in view of the geo-political and military/strategic dimensions of Galileo. For the European authorities in addition the question of intellectual property rights is crucial: if private partners are to come on board, in particular patent rights would be a key feature of the commercial potential such private partners are looking for.

As regards security concerns, in the case of Chinese membership of the GJU a middle course was steered by denying the PRC access to the Public Regulated Service (PRS), the encrypted governmental service the use of which was at the heart of the relevant concerns voiced.[23] The Galileo Security Board moreover will keep a close watch over the GJU's activities to ensure that such concerns are taken care of in practice: any exports by China to third countries of "sensitive items related to the GALILEO programme" can only take place after prior authorisation by the Board.[24] Likely, such a construction will also result vis-à-vis EGSA.

As to intellectual property rights, the solution achieved by the EC-PRC Cooperation Agreement was to apply "appropriate protection of intellectual property rights," and to do so "in accordance with the relevant international standards."[25] Finally, it has to be noted that the activities of the GJU remained firmly under control of the Commission (on behalf of the European Union) and ESA. Both were statutorily guaranteed to have at least 40% of the total votes in the Administrative

---

and the State of Israel, of 2 June 2005, Doc. Council of the European Union, 9482/04. At the time of writing, similar agreements are being agreed upon or prepared with such states as South Korea, Ukraine, India, and a number of others.

[21] According to the Communication from the Commission to the European Parliament and the Council – State of Progress of the Galileo programme, COM(2002) 518 final, of 24 September 2002; OJ 248/2 (2002), 16-7, the founding members of the GJU are to assess the way to handle third states' interests in membership of the GJU, but the Communication itself then proceeds with referring to a proposal by the Commission for a mandate by the EU Council without further qualifications as to, for example, ESA involvement.

[22] See Art. 21(1), referring to the prior condition of having "entered into agreements with the European Community to this effect."

[23] Cf. Art. 4(2), EC-PRC Cooperation Agreement, which calls for a separate agreement in case the cooperation should extend to "GALILEO Public Regulated Service, system security features (…) and critical control features of the GALILEO global segment as well as exchange of classified information."

[24] Art. 8(4), EC-PRC Cooperation Agreement.

[25] Artt. 3(e), 8(3), EC-PRC Cooperation Agreement.

Board of the GJU each, the highest body within the organisation.[26]

While it is thus clear that the fundamental – and justified – security and IPR-related interests of Europe would require it to maintain ultimate control over the Galileo system in some fashion and in a number of key respects, it is submitted that a convention would allow for a more coherent and solid legal basis. Establishment of a constitutive convention of itself of course would not preclude a solution whereby the member states of the European Union (and ESA) would maintain such ultimate control as is desired – it is just not dependent upon individual 'bilateral' arrangements raising issues of transparency, complexity and perhaps discrimination, and certainly of uncertainties which might not bode well for the commercial interests involved in the Galileo PPP. In the end this also touches upon the main thrust of Recommendation # 1, calling for establishment of a solid legal basis for EGSA as possible to generate maximum political clout. Such clout will obviously be missing at least for the time being, or more precisely, will (have to) be substituted by the more general political clout of the European Union and the Commission. 5. The Legal Personality of the European GNSS Supervisory Authority The next major issue concerning EGSA is represented by the extent of the (international) legal personality given to it. The EGSA Regulation establishes EGSA as "a Community agency" respectively "a body of the Community,"[27] which is then further elaborated to the extent that EGSA shall enjoy in each of the EU member states "the most extensive legal capacity acceded to legal persons under their law."[28] This, however, clearly refers to legal personality at a national level, almost as a private legal entity (with the primary exception that EGSA is granted some rights as an international body under the Protocol on Privileges and Immunities of the European Communities[29]), as it is further specified by Article 4(2) that such personality should allow them inter alia to "acquire or dispose of movable and immovable property and be a party to legal proceedings."

With a view to Recommendation # 10, pointing at the desirability of concluding agreements on liability claims in the course of contractual relations, such a private legal personality may well suffice in principle.[30] It certainly would allow the private operator to explicitly accept certain liabilities, whether related to third-party claims or to service guarantees under the contracts themselves, although the extent in which the private operator may be interested or willing to do that naturally depends upon the terms of the concession – to what extent will the concession *force* the private operator to accept certain liabilities, respectively to what extent does it provide him with the *means and incentives* (e.g. by rights of derogation to EGSA or member states of the European Union and/or ESA) to accept them?

---

[26] See Art. 8(1), GJU Statutes; also (2), (3).
[27] Art. 1, resp. Art. 4(1), EGSA Regulation.
[28] Art. 4(2), EGSA Regulation.
[29] See Art. 15, EGSA Regulation.
[30] See further, as to liability, infra para. 6.

If one looks at the measure of *international* legal personality, however, things are quite different. Of course any 'external' international legal personality to a large extent depends upon the acceptance thereof by third states, not being members of the European Union and hence – perhaps – preferring to deal with the individual sovereign states behind any entity like EGSA rather than with that entity as such. But any future recognition and acceptance of international legal personality would be made considerably easier if 'internally' the necessary competencies would be provided for. The ultimate acceptance of the European Union's independent measure of international legal personality by third states in the context of the World Trade Organisation (WTO)[31] and EUROCONTROL[32], intergovernmental organisations to which the Union has now acceded almost on a par with sovereign states, was to a large extent the consequence of the internal transfer of relevant competencies in the areas of international trade and air transport respectively from the individual member states to the EU-level under applicable EC law.[33]

In this respect, the competencies allocated to EGSA under the Regulation for the time being might be considered rather limited. EGSA is not so much a new, independent intergovernmental entity as a Community agency.[34] Though such an agency might well be delegated with the authority within the EC law framework for dealing with third parties, as stemming from the Commission's general authority to do so on behalf of the Union,[35] so far, it has not been given such a mandate. There is no competence provided in the EGSA Regulation for EGSA to deal directly with third states at the level of public international agreements; it remains for the Commission to do that.

Also the exercise of any political clout of EGSA, following Recommendation # 1, to negotiate and solidify market access arrangements for Galileo's services – a major factor in Galileo's envisaged commercial success! – is conspicuously absent; at each and every turn the Commission should be made to undertake the necessary

---

[31] Established by the Agreement Establishing the World Trade Organization, Marrakesh, done 15 April 1994, entered into force 1 January 1995; 1867 UNTS; UKTS 1996 No. 57; ATS 1995 No. 8; 33 ILM 1125, 1144 (1994).

[32] Originally established by the Convention Relating to Co-operation for the Safety of Air Navigation, Brussels, done 13 December 1960, entered into force 1 March 1963; 523 UNTS 117; Cmnd. 2114.

[33] See e.g. Art. 80(2), 131-135, Treaty of Amsterdam Amending the Treaty on European Union, the Treaties Establishing the European Communities and Certain Related Acts (hereafter Treaty of Amsterdam), Amsterdam, done 2 October 1997, entered into force 1 May 1999; OJ C 340/73 (1997), and respective implementing Directives, Regulations and Decisions.

[34] See again Art. 4(2), EGSA Regulation.

[35] Cf. Art. 300, 301, Treaty of Amsterdam. However, the Commission requires specific mandates for negotiating international agreements on GNSS and Galileo issues; see further Council of the European Union, 2589th Council Meeting, Transport, Telecommunications and Energy, Luxembourg, 10-11 June 2004, 9865/04 (Presse 176), 19.

steps and execute the necessary policies. Along the same lines, participation of third states in EGSA requires agreements with the European Community, subject to approval by the Council.[36]

Similarly, with respect to security issues the role of EGSA is clearly a subordinate one: wherever "the operation of the system affects the security of the Union or of its Member States, the responsibilities and competence of the European Union (…) are set out in Joint Action 2004/552/CFSP."[37] It may be noted here that EGSA at least will be entitled to "enforce and verify compliance by the concession holder with international rules and agreements", explicitly referring to the Wassenaar Arrangement which is a lynchpin in international efforts to control the risks inherent in dual-use technology.[38] Also, EGSA will control the security aspects of industrial contracts concluded by the concessionaire, define relevant security specifications and standards, as well as the cryptography requiring governmental approval.[39] EGSA finally will "initiate and monitor the implementation of security procedures and perform system security audits", all however under the sway of the Commission and the EU member states through the Centre for Security and Safety.[40] Whilst EGSA should perhaps be given the mandate to defend Galileo's interests directly, in the context of both the Wassenaar Arrangement and Regulation No. 1334/2000 (which largely translates the non-binding arrangements under the Wassenaar Arrangement into binding obligations for the EU member states)[41]; neither do these regimes allow for any such role yet, nor does the EGSA Regulation provide any substantive mandate in this respect.

A last key point in any analysis of the extent of EGSA's international legal personality refers to its potential roles in the context of (other) intergovernmental organ-

---

[36] See Art. 21(1), (3), EGSA Regulation.

[37] Art. 22, EGSA Regulation.

[38] Art. 2(1)(j) sub (vii), EGSA Regulation. The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies, Wassenaar, done 19 December 1995, effective 12 July 1996, superseded the old common export control policy regime, and was established in order to contribute to regional and international security and stability by promoting transparency and greater responsibility in transfers of conventional arms, dual-use goods and dual-use technologies. Of the current twenty-five EU members, only Cyprus, Estonia, Latvia, Lithuania and Malta are not 'parties' to the Wassenaar Arrangement. It may be noted furthermore, with a view to Israeli participation in Galileo, that Israel is a 'party' to the Wassenaar Arrangement.

[39] See Art. 2(1)(j) sub (i), (ii) and (iii), respectively, EGSA Regulation.

[40] Art. 2(1)(j) sub (v), EGSA Regulation; for the Centre for Security and Safety, see Communication from the Commission to the European Parliament and the Council – Progress report on the GALILEO research programme as at the beginning of 2004, COM(2004) 112 final, of 18 February 2004, 18-9. Cf. also Art. 2(1)(j) sub (vi) as far as the Galileo Public Regulated Service (PRS) is concerned.

isations, notably with the International Telecommunication Union (ITU)[42] in view of the need of Galileo to be able to use certain frequencies with a minimum of interference. Here as well, the institutional state of affairs is not very articulate yet. The EGSA Regulation establishes EGSA as "the concession holder's sole interlocutor on the matter of frequencies", presumably meaning inter alia that the concessionaire should not itself seek a member state to take up its interests within the ITU framework.[43]

Further to this, those member states already having "lodged files" with the ITU for Galileo's sake "should also allow the Authority [EGSA] to assign the right to

---

[41] Council Regulation setting up a Community regime for the control of exports of dual-use items and technology, No. 1334/2000/EC (hereafter Regulation 1334/2000), of 22 June 2000; OJ L 159/1 (2000). The Regulation has been amended and updated by Council Regulation amending Regulation (EC) No. 1334/2000 with regard to intra-Community transfers and exports of dual-use items and technology, No. 2889/2000/EC, of 22 December 2000; OJ L 336/14 (2000); Council Regulation amending Regulation (EC) No. 1334/2000 with regard to the list of controlled dual-use items and technology when exported, No. 458/2001/EC, of 6 March 2001; OJ L 65/19 (2001); and Council Regulation amending and updating Regulation (EC) No. 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology, No. 2432/2001/EC, of 20 November 2001; OJ L 338/1 (2001). The last Regulation updates and replaces the Annexes to Regulation No. 1334/2000 in order to take account of, inter alia, changes adopted by the Wassenaar Arrangement plenary session in December 2000.

[42] The ITU in its most recent incarnation is principally based upon two founding treaties: the Constitution of the International Telecommunication Union (hereafter ITU Constitution), Geneva, done 22 December 1992, entered into force 1 July 1994; 1825 UNTS 1; UKTS 1996 No. 24; Cm. 2539; ATS 1994 No. 28; Final Acts of the Additional Plenipotentiary Conference, Geneva, 1992 (1993), at 1; as amended in 1994 by the Instrument amending the Constitution of the International Telecommunication Union (Geneva, 1992), Kyoto, done 14 October 1994, entered into force 1 January 1996; Cm. 3447; ATS 1996 No. 10; Final Acts of the Plenipotentiary Conference, Kyoto, 1994 (1995), at 1, and in 1998 by the Instrument amending the Constitution of the International Telecommunication Union of 22 December 1992, as amended 14 October 1994, Minneapolis, done, 6 November 1998, entered into force 1 January 2000; ATS 2000 No. 8; and the Convention of the International Telecommunication Union, Geneva, done 22 December 1992, entered into force 1 July 1994; 1825 UNTS 1; UKTS 1996 No. 24; Cm. 2539; ATS 1994 No. 28; Final Acts of the Additional Plenipotentiary Conference, Geneva, 1992 (1993), at 71; as amended in 1994 by the Instrument amending the Convention of the International Telecommunication Union (Geneva, 1992), Kyoto, done 14 October 1994, entered into force 1 January 1996; Cm. 3447; ATS 1996 No. 10; Final Acts of the Plenipotentiary Conference, Kyoto, 1994 (1995), at 23; and in 1998 by the Instrument amending the Convention of the International Telecommunication Union of 22 December 1992, as amended 14 October 1994, Minneapolis, done, 6 November 1998, entered into force 1 January 2000; ATS 2000 No. 8.

[43] Recital 8, EGSA Regulation.

use" the frequencies concerned to the concessionaire.[44] This 'assignment' cannot be equated with an 'assignment' necessary under ITU regulations vis-à-vis a private operator, since that is a prerogative of an ITU member state.[45] So it should be read as only referring to an internal, 'intra-Galileo' arrangement. It thus leaves unsettled the question of who is going to arrange for future Galileo needs in terms of frequencies and orbits, or even to protect Galileo's interests within the ITU context and framework in a general sense.

The EGSA Regulation indicates that EGSA should assist the Commission in all relevant matters, "particularly in cases where legislative and regulatory measures prove necessary."[46] One would imagine this would include ITU regulations pertinent for the coordination of Galileo frequencies and orbits. This, however, does not solve the issue either, since also the Commission is not empowered under current ITU rules and practices to perform itself the necessary roles.

The operative (and binding) part of the EGSA Regulation does at least provide some help. EGSA shall "coordinate Member States' actions in respect of the frequencies necessary to ensure the operation of the system; it shall hold the right to use all these frequencies wherever the system is located", and "it shall deal directly with the concession holder on matters relating to the use of these frequencies".[47] The last phrase is obvious and meaningful, but the first two raise some further issues.

EGSA can of course be given the competence under EC law to "coordinate Member States' actions" – but should it not have been given the competence to actually supervise and direct them? Does the coordination competence provide sufficient leverage to ensure that individual member states will not desist from activities on behalf of Galileo in the ITU framework when EGSA (or the Commission) would like them to do that – or on the contrary that they will take up the Galileo concessionaire's case if EGSA would like them to do so? We can only hope that this will remain a rather theoretical concern, ignoring practical and pragmatic approaches which would allow EGSA to play a key role in this regard. Yet, it has to be kept in mind that such coordination competencies in any case remain an internal matter: certainly for the time being non-Galileo states within the ITU framework can

---

[44] Recital 9, EGSA Regulation.

[45] 'Assignment' is defined in the ITU context as the "authorization given by an Administration for a radio station to use a radio frequency or by an Administration for a radio station to use a radio frequency or radio frequency channel under specified conditions", Section 1.18, Radio Regulations; whereas 'Administration' in turn is defined as "Any governmental department or service responsible for discharging the obligations undertaken in the Constitution of the International Telecommunication Union, in the Convention of the International Telecommunication Union and in the Administrative Regulations", Annex to the ITU Constitution, first bullet.

[46] Recital 11, EGSA Regulation.

[47] Art. 2(1)(d), EGSA Regulation.

legally speaking ignore any EGSA role if this would suit their purposes.

This applies even more when it comes to holding "the right to use all these frequencies wherever the system is located": intra-Galileo, this makes sense, within the ITU framework however such a right can only be qualified as following from a proper assignment by an ITU member state following the process within ITU regarding allocation, coordination and allotment of frequencies.[48] Thus, major question marks for the concessionaire remain when it comes to the issue of who can and will under what circumstances take up Galileo's case in the ITU context, and what the role for EGSA in this respect would actually turn out to be.

Comparing the current outcome of the establishment of EGSA as analysed in terms of legal personality with Recommendation # 6, it must be concluded therefore that the measure of *international* legal personality accorded to EGSA seems to fall way below the mark of a "clear and substantial" one as recommended. As a consequence, also the options for EGSA to comply with Recommendation # 13 – to exercise the necessary controls over intellectual property rights protection and enforcement, and to deal with relevant third-party claims – or Recommendation # 1 – generating sufficient political clout to defend Galileo's commercial interests – seem likely to end up being fairly limited, in view of the absence of any clear indications to the contrary.

6. The European GNSS Supervisory Authority and Liability

The GALILEI Study also came up with a set of Recommendations specifically relating to liability. The most general and important one, Recommendation # 3, as indicated before calls for a "proper and generous liability regime" to be devised for Galileo, with a key role in this regard for EGSA. In addition, Recommendations # 8, 9, 10 and 11 dealt with more specific sub-issues: the options respectively to implement a contractual liability chain as currently developed in the context of EUROCONTROL, to offer a second-tier funding system for liability claims, to deal appropriately with claims arising out of negligence, and to deal with the issue of punitive damages as they could be awarded under the US jurisdiction. All such sub-issues tie in with the larger picture of establishing a proper and generous liability regime.

The EGSA Regulation however deals with the liability issue in summary fashion only, in spite of its crucial importance both from the point of view of the general public interests in safe Galileo operations and from the perspective of the private

---

[48] 'Allocation' is defined in the ITU context as destining a frequency band "for the purpose of its use by one or more terrestrial or space radiocommunication services or the radio astronomy service under specified conditions," Section 1.16, Radio Regulations; whereas 'allotment' is defined in that same context as the "entry of a designated frequency channel in an agreed plan, (...) for use by one or more Administrations for a terrestrial or space communication service in one or more (...) countries or (...) areas," Section 1.17, Radio Regulations.

operator interested in knowing its liabilities as precisely as possible in order to be able to take the relevant measures. With respect to contractual liability, the Regulation simply provides that it "shall be governed by the law applicable to the contract in question".[49] The European Court of Justice furthermore would be entitled to exercise jurisdiction if a relevant clause on arbitration contained in a contract concluded by EGSA provides for that.[50] As for non-contractual liability, a rather general duty is provided for "in accordance with the general principles common to the laws of the Member States", to "make good any damage caused by its departments or by its servants in the performance of their duties."[51] Whilst no doubt constituting a relevant clause of the EGSA Regulation, Article 17 does seem to pass by the real liability issues in the Galileo context by a wide margin.

Any comprehensive analysis of liability issues in the context of Galileo should start at the source – the satellite operations in outer space. As far as direct physical damage caused by space activities in general, including of course Galileo, is concerned, this is ruled by Article VII of the Outer Space Treaty[52] as further elaborated by the 1972 Liability Convention.[53] This regime provides for liability for damage caused by a space object resting upon the "launching State(s)" of that space object; the concept of "launching State" being defined in a fourfold fashion.[54] Such state liability would apply regardless of whether the actual operation causing the damage – such as Galileo might come to represent – was privately conducted or even if the whole satellite venture would be a private one.

In particular the criterion of "procuring" a launch is subject to uncertainties from this perspective. Arguably the hosting of a ground station for Galileo, the activity of which causes a satellite to become involved in a major accident causing damage, could be seen as making the host state a liable state under space law for such damage. At the international level, it has not been possible so far to arrive at any generally agreed interpretation or definition of the term "procurement"; in the absence thereof it becomes of interest to see how individual states in their national

---

[49] Art. 17(1), EGSA Regulation.

[50] See Art. 17(1), EGSA Regulation.

[51] Art. 17(2), EGSA Regulation.

[52] 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).

[53] 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).

[54] Art. I(c), Liability Convention, reads: "The term 'launching State' means: (i) a state which launches or procures the launching of a space object; (ii) a State from whose territory or facility a space object is launched."

efforts to establish relevant legislation have tried to deal with this issue.

Some national space laws explicitly or implicitly require a license also for ground station operations including arrangements on liability, reimbursement of state liability, and the need to provide insurance for that. For example, in the United States a license is required to "use or operate any apparatus for the transmission of energy or communications or signals by radio" from anywhere in the United States.[55] The attendant liability has to be dealt with in that context as well.[56] Clearly, operations of a ground station using radio signals to control navigation satellites would fall under these requirements.

Similar conclusions might be drawn in respect of some of the other states with an operative national space law. In the case of Sweden, member state of both ESA and the European Union and hence of importance for any 'European' interpretation and definition of "procurement", a license is required for "all measures to manoeuvre or in any other way affect objects launched into outer space", if conducted from Swedish soil and/or by a Swedish national or national company, and licensees "shall reimburse the State what has been disbursed on account of the above-mentioned undertakings, unless special reasons tell against this".[57] The United Kingdom, the other ESA and EU member state, since a number of years having a full-fledged national framework law in place on activities in outer space, whilst limiting its licensing obligation ratione personae to UK nationals and national companies does also explicitly include in the scope of its licensing regime anything causing a space activity "to occur" or being "responsible for its continuing."[58]

For comparison's sake furthermore, one could refer to the applicable Russian space law, which includes in its scope "the use of navigation (...) systems" and "other kinds of activities performed with the aid of space technologies" by anyone falling under Russian jurisdiction, and calls in principle for reimbursement of the Russian government of liability claims paid by the latter under international space law.59 A final example concerns South Africa, where "space activities" as leading to a license requirement under the relevant act are defined as "activities directly contributing to the launching of spacecraft and

---

[55] Sec. 301, Communications Act, 19 June 1934; 47 U.S.C. 151 (1988); 48 Stat. 106.

[56] See Sec. 206, Communications Act.

[57] Secc. 1, 2, 6, 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.

[58] Sec. 13(2), cf. further Secc. 1, 2, 3, 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.

[59] Art. 2(1), see further Artt. 1, 25, 30, 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.

the operation of such craft in outer space", and such activities all require a license if conducted from South African territory.[60]

Whatever the level of national detail in implementing the relevant international and national obligations pertaining to liability, it will be obvious that in any arrangements allowing Galileo ground stations to operate on their respective territories the intended host states would want to shift the burden of any such liability onto the shoulders of Galileo, that is EGSA and/or the private concessionaire.

However, this is not even the whole story when it comes to liability for Galileo operations. The abovementioned international space law regime for liability and its national ramifications and implementations are, in view of the scope of that international regime, only relevant for damages caused by a Galileo satellite physically harming another space object or causing terrestrial damage – arguably even restricted to such damage caused by physical impact, that is a crash.

In the case of Galileo, while the above is by no means a negligible issue, much more attention needs to be paid to the possible damage caused by the user of Galileo for example when that user, wrongfully trusting the signals and services provided to him, navigates incorrectly – into a wayside tree, a harbour facility, or a mountainside adjacent to an aircraft landing strip. This type of 'indirect' damage results in triggering other liability regimes applicable – for road accidents, maritime accidents or aviation accidents – normally making such user (and not Galileo itself) liable for the damage.[61]

But where it is Galileo's intention to attract (commercial) transport users in particular to the SOL and make them pay for it, there is a clear interest for EGSA and the concessionaire to somehow allow derogation of such liability claims in case it can be proven the cause of the damage was a wrongful or absent Galileo signal. It thus might well be that the concession negotiations will result in the operator accepting a relevant reimbursement obligation up to a certain level, with EGSA

---

[60] Sec. 1, see further Secc. 11, 14, 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.

[61] Cf. e.g. for aviation the international contractual liability system developed ever since the Convention for the Unification of Certain Rules Relating to International Transportation by Air, Warsaw, done 12 October 1929, entered into force 13 February 1933; 137 LNTS 11; USTS 876; UKTS 1933 No. 11; ATS 1963 No. 18; and culminating in the Convention for the Unification of Certain Rules for International Carriage by Air, Montreal, done 28 May 1999, entered into force 4 November 2003; ICAO Doc. 9740; 48 ZLW 326 (1999); and the third-party liability conventions of 1933 and 1952: International Convention for the Unification of Certain Rules Relating to Damage Caused by Aircraft to Third Parties on the Surface, Rome, done 29 May 1933, entered into force 11 November 1942; 5 JAL 312 (1937), respectively Rome Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface, Rome, done 7 October 1952, entered into force 4 February 1958; 310 UNTS 181; ATS 1959 No. 1; ICAO Doc. 7364.

and/or the individual member states of ESA and the European Union behind it accepting to reimburse (a certain part of) any amount of compensation over and above such first-tier private operatorliability.[62] As of yet this is far from established however. As mentioned above, the EGSA Regulation itself does not go further than accepting non-contractual liability to the extent "in accordance with the general principles common to the laws of the Member States" and thus to "make good any damage caused by its departments or by its servants in the performance of their duties."[63] It would be difficult, to say the least, to read this as including the operations of the system by a private concessionaire – certainly not a "department" or "servant" in the normal sense of the word.

To the extent that such a system for derogation of liability to Galileo would arise, agreements between EGSA or the Commission and host states would also have to deal with this aspect of liability, i.e. arranging for mutually acceptable procedures and rules once the question arises whether an activity conducted at the relevant ground station might have been partially or wholly responsible for a Galileo failure causing relevant damage.

7. Concluding Remarks

In conclusion, the EGSA Regulation takes a rather prudent approach towards establishing a public supervisor over Galileo and the private operations to be conducted with it, when compared to the thirteen Recommendations stemming from the GALILEI Study cluster. To the extent that the Recommendations have been followed, this focused more on internal than external aspects: sufficient guarantees would be in place for a first level of monitoring of Galileo and ensuring that its operations and activities are in line with general public interests from a European perspective, such as pertaining to safety and security. For example, the contours of a certification system are provided for, and appropriate control over Galileo's security aspects would indeed require not just an EGSA equipped with relevant monitoring competencies, but the full political weight of the European Union, Commission and ultimately the sovereign member states to be behind it.

With regard to some of the crucial external features, however, the picture is considerably less satisfactory. Whilst it may, from a political perspective, perhaps be understandable that the European authorities, including the Commission, do not want to give EGSA too much rope to conduct its own external policies, there are several dangers inherent in that approach which have been noted above. The liability issue in particular is dealt with in very succinct fashion; it can only be hoped that the concession will lay down the basis for a scheme to deal with 'indirect'

---

[62] Cf. the strong recommendations made in this respect by Recommendations and Conclusions, in particular 18-9, 21-2, 159-60, 220-1, 232-8.

[63] Art. 17(2), EGSA Regulation.

third-party liability issues and that such a scheme will then be further elaborated at the international legislative level. Also for general safety purposes, the measure of international legal competencies allocated to EGSA, which could lead to a considerably larger measure of (acceptance of) international legal personality, is rather meagre. In contrast with security issues, where such care is not only acceptable but effectively wise, on safety issues Galileo stands to benefit much more from the efficiency, transparency, and direct accountability which – for example – a Galileo convention could offer to any independent observer, state or private company.

In the final analysis, an evaluation of EGSA and its expected status and role is perhaps a matter of whether the glass is half-empty or half-full. With a view to the many revolutionary features and benefits which Galileo, once fully operational, is expected to bring to Europe in particular, and to the rapid technological, operational, commercial, economic, social, and political developments which take place all at the same time, it is perhaps fairer to take the latter approach – the glass is already half-full. Yet, this should not lead to negating the essential need to further deal with some of the problems detected in the currently envisaged structure, and to foregoing the opportunities which are there to still do something about them. After all, why not try to fill the glass to capacity?