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A CRITICAL ANALYSIS OF THE EUROPEAN UNION'S SPACE POLICY AND ITS COMPLIANCE WITH THE 1967 OUTER SPACE TREATY

Abstract

This brief research document critically analyzes the Space Policy of the European Union and its legal compliance with the 1967 Outer Space Treaty, where the research methods utilized include particular theoretical procedures of description and analysis, respectively. The primary focus is placed upon its four main directions, those being the following: (1) The Copernicus Earth Observation System; (2) The Galileo and EGNOS Satellite Programs; (3) Space Research; and (4) Space Exploration. Without any particular contribution towards the advancement of space law, such directions prevent sufficiently developed European Union Member States who wish to progress in the field of space research. It is, hence, the duty of the European Union to enable Member States to be independent concerning their technological development. Moreover, we raise the question of whether the extent to which other space-related Treaties adopted, specifically mentioned or ratified extensions and elaborations of the Outer Space Treaty, where such overarching requirement for European Union compliance with the Outer Space Treaty is consistent, but unlikely to change, nevertheless. On the other hand, the extent to which the European Union acts as a space operator must obviously adhere to the regime established by the Outer Space Treaty, meaning that the manner in which responsibilities, obligations and executions of competences will be given any shape or form represent an internal question expected to be solved by the European Union itself.

Keywords: Space policy; European Union; external relations; satellite programs; observation systems;

INTRODUCTION

Many fundamental aspects of contemporary human society – ranging from telecommunications to television, weather forecasting to global financial systems – rely on space systems and space-based technologies. Their significant characterization, however, creates a specific issue: the impossibility of certain countries around the globe to attempt to implement such elements with technology and available financial resources which would be in compliance with the positive regulations of both national and international space law. And in our case, the European Union (hereinafter the “EU” or “Union”), represented by its Member States and the European Commission, claims the primary role of European countries pooling their financial and technological resources in order to manage space policy and law through the European Commission in cooperation with the European Space Agency (hereinafter “ESA”), as an intergovernmental agency currently managed by 27 European countries. The European Space Policy consequently believes that it has – for the first time – created a common political framework for space activities in Europe. Being jointly drafted by the European Commission and ESA’s Director General, Jean-Jacques Dordain, the European Space Policy sets out a basic vision and strategy for the space sector, and tackles issues such as security and defense, access to space and exploration. Adopted by the ‘Space Council’ of ESA and EU ministers, the approach intends to equip Europe for space study and exploration, prepare it for new challenges and bring a new dimension to the EU’s external relations. Through this document, the EU, ESA and its Member States all commit to increasing coordination of their activities and programs and to organizing their respective roles relating to outer space. This document is published as the *Resolution on the European Space Policy; ESA Director General’s Proposal for the European Space Policy, ESA BR-269*. (European Space Agency n.d.) The European Space Policy, furthermore, consists of four main directions, those being the following:

- The Copernicus Earth Observation System;
- The Galileo and EGNOS Satellite Programs;
- Space Research; and
- Space Exploration;

The concrete research problem put forward within this brief critical analysis revolves around space-related activities of the European Space Policy and its four main directions manifesting a rather strong implementation in accordance with legal regulations as provided by space law. Simply put, the principal argument concerns the interconnectedness between both aspects in practice. In addition, it is equally relevant to consider the relation between the European Space Policy and the 1967 Outer Space Treaty (hereinafter “OST”), in terms of legal compliance, with primary focus placed upon EU Member States which aim to further advance in the fields of space research and exploration, simultaneously obtaining their independence from the EU in terms of technological and scientific development.

THE COPERNICUS EARTH OBSERVATION SYSTEM

Copernicus is an EU Program aimed at developing European information services based on satellite Earth Observation and *in-situ* data. The Program is coordinated and managed by the European Commission. It is implemented in partnership with the Member States, the ESA, the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), the European Centre for Medium-Range Weather Forecasts (ECMWF), EU Agencies and Mercator Océan. Vast amounts of global data from satellites and from ground-based, airborne and seaborne measurement systems are utilized to provide information to help service providers, public authorities and other international organizations improve the quality of life for the citizens of Europe. The resulting information is collected, processed and made available to interested users with confidential up-to-date data through a set of services related to environmental and security issues. (European Commission 2016) While such program significantly contributes to Earth through climate change, tourism, safety or health, it lacks relations with the basic essence of space law defined:

“Space law is the law intended to regulate relations between states to determine their rights and duties arising from all activities directed at space and its interior - and to do so in the interest of humanity as a whole, to offer protection to life, terrestrial and extraterrestrial, wherever it exists” (Diedriks-Verschoor and Kopal 2008: 7)

The indisputable fact of Copernicus being coordinated and managed by the European Commission as a European institution in the role of an executive body – while the satellite infrastructure is managed by ESA, and the sensors are developed by the European Environment Agency, as well as individual EU Member States – indicates that one of the reasons the Copernicus system is housed in the space sector is due to ESA's significant involvement, but without any particular contribution toward the advancement of space law.

THE GALILEO AND EGNOS SATELLITE PROGRAMS

Like the previous program, Galileo represents the EU's Global Navigation Satellite System (GNSS), which provides accurate and precise positioning and timing information. As a program under civilian control, its data can be used for a wide range of applications. It is autonomous, but also interoperable with existing satellite navigation systems. Europe's involvement in Satellite Navigation has begun with the European Geostationary Navigation Overlay Service (EGNOS), which is a Satellite-Based Augmentation System (SBAS) complementing GPS. EGNOS is currently undergoing certification for safety-of-life applications. Galileo, Europe's Global navigation satellite System has benefitted from the experience gained from designing, building and deploying EGNOS. The European Commission is the program manager of Galileo; ESA is the procurement and design agent. In the frame of the European GNSS Evolution Program, ESA is studying scientific applications of satellite navigation systems. This should lead to a better utilization of the navigation signals but also provides valuable feedback from the scientific community to

the designers of the next generation Galileo system. (Arbesser-Rastburg and Hein 2010) However, regardless of the function of this system, important questions from the perspective of space-legal politics that should be asked are as follows:

1. Why does the European Union need the Galileo and EGNOS Satellite Programs?
2. What is the role of the European Commission in this case?

Regarding the first question, assumptions can be found within the purpose of the Galileo program – the use of satellites in order to know a precise location. Compared to foreign systems of non-EU member states such as *Beidou* in China and *Glonass* in Russia, certain characteristics of competitiveness are attributed, mainly in the space-related aspects of the industry. It is due to major developments that enable outer space to currently represent a significantly relevant and promising source of industrial excellence and technological development with several potential spillovers into other sectors. Hence, if being guided by logical expectation that sufficiently developed EU member states wish to advance in the field of space research, then it is the duty of the EU to enable them the freedom to be independent in their technological development. Such freedom considers the lack of assistance, support or cooperation from non-EU member states. Moreover, since satellites are a necessary element of our contemporary way of life, as well as a prerequisite for technological and scientific progress, certain strategic and economic advantages are realized that the EU and its member states enjoy regarding the availability of services offered by satellite navigation. Based on satellite signals, Galileo could contribute to the development of new products and services, as well as generate technological benefits for research, development and innovation which, once again, are derived from the concept of EU member states obtaining technological-scientific independence.

Regarding the second question, the European Commission analyzes the impact that satellite navigation has on competitiveness in four main segments of the EU economy:

- *Upstream* – the contribution of the European space industry to the building of global satellite navigation systems;
- *Service provision* – European businesses supplying commercial or public positioning, navigation, or timing services;
- *Downstream* – the European applications industry, which depends on service provision to supply the hardware and software needed to exploit satellite signals; and
- *End users* – businesses using services and applications provided by satellite signals; (International GNSS Service 2019)

Given that the Galileo program is funded and fully owned by the EU, the European Commission is responsible for managing and overseeing the implementation of all activities on behalf of the EU. While the purpose of the Galileo program is strictly technological, the role of the European Commission is to provide legal implementation, meaning that all activities aim to be implemented in accordance with legal regulations, as cooperating with its quality of an executive body of the EU. That being said, certain aspirations of the EU being as independent as possible from other non-EU Member States can be recognized.

SPACE RESEARCH AND EXPLORATION

Space exploration is considered the driving force of technological innovation and scientific discoveries. It is also borne in mind that space programs require extensive financial support and international cooperation is vital. The EU appears prepared to develop a competitive, independent and global European space industry with the priority of strengthening the European space sector by stepping up research and innovation if Europe is to maintain and secure access to and operations in space. For that matter, analyzing the relationship between the space policy implemented by the EU and the 1967 OST is necessary. We consider the European flagship projects Galileo and Copernicus, with the European Commission on behalf of the Union in the main position, which questions the relationship between the EU and the OST which, otherwise, represents a comprehensive international convention that establishes the legal framework for all space-related activities. Historically speaking, the beginning of the Treaty itself lies during the Cold War with its primary focus upon military-and-scientific-related features of space activities. Thus, the legal regime of the Treaty was expectedly aimed at sovereign states, such as the USSR and the USA, and not at a specific union or international organization. Nowadays, however, it can be perceived that to the extent where the Union acts in its legislative capacity through the European Commission and regardless of the law or regulation it enacts, such should not run contrary to the provisions of the OST – and at least 24 of the 28 EU Member States are bound to ensure that the Union does not do so, and are also bound to succeed in doing so in view of their large majority. The EU itself also recognizes a fundamental obligation that relies on compliance with international law. This clearly includes the OST as well, given that it reflects customary international law. Its provisions, however, are quite broad and provide only general obligations:

1. To act in the interest of the international community, international cooperation and international peace and security;
2. *To refrain from putting weapons of mass destruction into space;*
3. *To treat astronauts as “envoys of mankind” and to support them as much as possible;*
4. *Accept international responsibility, as appropriate, and ensure appropriate authorization and continued supervision of space activities conducted by non-governmental organizations;*
5. *To reduce at least in principle from harmful interference with other (States) legitimate space activities;*
6. *Allowing access in principle to stations and equipment on celestial bodies; and*
7. *To be generally consistent with international law applicable to outer space;* (United Nations 2002)

The seventh obligation, in particular, raises the question of the extent to which other space-related treaties adopted, even if not specifically mentioned or ratified, as extensions or elaborations of the OST should also be respected. At this stage, it is sufficient to note that

the majority of EU legislations relating to space activities and issues are rather limited to specific aspects. Hence, this overarching requirement for EU compliance with the OST is consistent, but unlikely to change, nevertheless. On the other hand, the extent that the Union acts as a space operator – which is the case of Galileo – must obviously adhere to the regime established by the OST. In the Treaty there are only two clauses that refer to international intergovernmental organizations; the first clause alludes to the following:

“The provisions of this Treaty shall apply to the activities of the States parties to the Agreement (...), including cases where they are carried out within the framework of international intergovernmental organizations” and “practical questions arising in connection with activities that implemented by international intergovernmental organizations (...) will be resolved by the member states of the Treaty or with the appropriate international organization or with one or more member states of that international organization, which are parties to this Treaty.” (United Nations 2002)

And the second clause alludes to the following:

“When the activities are carried out in outer space (...) by an international organization, the responsibility for compliance with this Treaty shall be borne by both the international organization and the States Parties to the Treaty participating in such an organization” (United Nations 2002)

If we follow the political logic of the Soviet Union which refused to grant special status to international organizations, such entities remained platforms for cooperation and not just independent legal entities capable of act with the least independence from their member states. This also means that, regardless of “space competence”, the extent to which it will enable the Union to begin to engage in the licensing regimes of states having established national space laws can be additionally supported by Article VI of the OST – EU-level approval and continued supervision of private space activities is neither a requirement nor a right. Other major issues relate to the obligations are set forth in their most fundamental version by Article VII (*if the state is involved in launching a space object in any of the above ways, it will be responsible for the damage caused by such space object*) and Article VIII (*if a space object is launched into space, it should be registered by (one of) the participating states, thus giving such state jurisdiction over the object*). (United Nations 2002) Given its structure, the EU does not constitute a state in any relevant legal sense of the word. As further supported by the provisions of Articles VI and XIII alluded above, some EU Member States would bear such responsibilities and enjoy an obligation and the possibility to register instead; This is proven by briefly reviewing the “*EU Space Programme 2021-2027*” as such regulation was adopted in April 2021 by the Council and European Parliament, and consequently entered into force retroactively on 1 January 2021. It aims to ensure:

- High-quality, up-to-date and security space-related **data and services**;
- Greater **socio-economic benefits** from the use of such data and services, aimed at increasing growth and job creation in the EU;

- Enhanced EU **security and autonomy**; and
- A stronger role for the EU as a **leading actor** in the space sector;

The regulation simplifies the existing EU legal framework and governance system and standardizes the security framework. It improves and brings together existing EU programs such as Copernicus, Galileo and EGNOS under one umbrella. (Council of EU and the European Council 2022) And in what manner such responsibilities, obligations and execution of competences will be given some shape or form in the future, essentially represents an internal question that should be solved by the EU itself.

CONCLUSION

Given this brief critical analysis of the EU's Space Policy and its compliance with the 1967 OST, we identify three main concluding remarks, namely:

- The Space Policy implemented by the EU represents a major international struggle for independence from non-European countries;
- The Space Policy implemented by the EU appears to achieve a significant advantage from a technological, economic and scientific perspective; and
- The Space Policy implemented by the EU appears to attempt compliance with the 1967 OST;

Such observations imply the diminution of the “international” characterization of space law as a legal regime, as well as its legal division between nations, on one hand, and international organizations, on the other, in the process of reflecting individual independence in outer space.

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