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THE COOPERATION BETWEEN ESA AND EU REGARDING THE EARTH OBSERVATION

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ABSTRACT¹

Even if the 2004 Project of the Treaty establishing a Constitution for Europe has not already come into force, nowadays, the European Union (EU) considers that space activities are “strategic for their construction of Europe” and they will “serve the interests of the EU, its Member States and its citizens”. Therefore, the EU and the European Space Agency (ESA) are defining a European Space Policy, and a European Space Program, in which Galileo and Global Monitoring for Environment and Security (GMES) are the currently most advanced projects. Giving the particular strategic importance of the Earth observation, the purpose of this paper is to analyse the strategy set out for GMES, whose objective is to provide, on a sustained basis, reliable and timely services related to environmental and security services in support of public policy makers’ needs. This initiative offers another opportunity to create a closer cooperation between the ESA and the EU, as the 2003 Framework Agreement established. Then, it is necessary to examine which role ESA and EU can/must play and which legal/institutional tools are provided to develop and to implement the GMES.

I. INTRODUCTION

The European cooperation in the space activities began in the 1960s under the ESRO/ELDO framework, and, after, under the ESA framework. Nowadays, the space activities are considered under another European vision, and are required by a new global actor: “Space is a tool to serve the interest of the EU, its Member States and its citizens: strategic influence, scientific progress, economic growth in the knowledge economy and security”². Therefore, the EU, in closer cooperation with the ESA aims to develop a coherent and

progressive European Space Policy (ESP) and, consecutively, a European Space Program (ESPr).

The 2003 White Paper³ sets down the legal/institutional tools and the two phases-calendar needed to implement the ESP: the phase 1 (2004-2007) will consist of implementing the 2003 Framework Agreement between the European Community (EC) and ESA⁴, and the phase 2 (2007-onwards) will consist of implementing the 2004 Treaty establishing a Constitution for Europe (the Draft Constitutional Treaty)⁵.

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The Draft Constitutional Treaty does not specify the model of the common legal and political structure for the relationship between the ESA and the EU. It just stresses the obligation to carry out this relationship, as it happens in the current EU Treaties, when they emphasize the interest of the relationship between the EC and United Nations or the Council of Europe⁶.

Even if the Draft Constitutional Treaty has not already come into force⁷, the ESA and the EC work jointly to identify and encourage the most effective sharing of tasks and responsibilities for determining and continuously delivering the benefits of space to the European citizens⁸. Fortunately, the 2003 Framework Agreement designs the basic legal/institutional tools and to implement the cooperation between ESA and EC, in the due respect of the international agreements related to ESA⁹ and EC¹⁰.

The art. 3 of the 2003 Framework Agreement outlines the specific fields of the cooperation between EC and ESA, including the Earth observation. Therefore, giving that now when the command of information has important geo-strategic implications, Europe needs to have available a capacity which allows it to implement and monitor the environmental and security policies in a reliable and timely manner. This own capacity will be based in a comprehensive Earth observation system, that is, the GMES programme.

II. THE JUSTIFICATION OF GMES: ITS STRATEGIC AND ECONOMIC DIMENSION.

At the present time, GMES is viewed as the second EU flagship of space policy, after the Galileo programme. Since the Gothenburg European Council in 2001, where the Chiefs of States and Governments expressed their political mandate, all the European Institutions have already supported it¹¹, because it meets strategic and economic objectives.

Concerning the strategic justification, the need for reliable and timely information about the natural and manmade catastrophes all over the world or about security issues has been underlined in the recent past years. The double-side dimension of the benefits of the GMES, inside and outside Europe, will sustain not only the EU's civil security needs but also the potential of the European Security and Defence Police. Likewise, GMES will become the main contribution to the EU international commitments, for instance, the global climate observing system¹², and to the global 10-Year Implementation Plan for a Global Earth Observation System of Systems (GEOSS).

Regarding the economic justification, GMES will stimulate the economic growth by facilitating the creation of innovative added value services. That is, the European industrial sector should expand its service offer and develop the innovative observing communications and information technologies that will be required within a dynamic GMES capacity¹³.

In particular, the GMES will provide the geospatial information necessary to implement the following EU policy and legislation:

1. The environmental policy, within EU territory and globally¹⁴.
2. The Common Foreign and Security Policy, including the European Defence Policy¹⁵.
3. Other internal / external policies as agriculture¹⁶, fisheries¹⁷, regional development, transport, external relation, development aid¹⁸, humanitarian assistance, and, lately, the increasing focused justice and home affairs cooperation, as the surveillance and management of external borders.

III. THE IMPLEMENTATION OF GMES.

The European Commission has set out a strategy for delivering GMES, beginning with the pilot phase of the three first operational GMES services by 2008, delivering a document, which discusses about the main axes involved in the above strategy¹⁹.

The users

The goal of the current development phase is to build a strong user base for GMES information services; the European Commission is one key issue, however it still has to identify its own needs.

The pilot operational services

The complex nature of GMES requires the integration of data from space-based and in-situ (airborne, water-based and ground-based) earth observation capacities into user-driven operational application services. This capacity has to be introduced gradually, depending of

the maturity of the services, the response by the users' community and the long-term sustainability of demand and supply. Anyway, the services will be funded by the combination of Community, national and regional resources. The implementation of these services has to solve different challenges: the harmonisation and the standardisation of data structures and interfaces; the policy barriers to data sharing; the design of quality assurance mechanisms, the fusion of data from different sources at different levels, and, finally, the cost effective and sustainable services.

To meet the 2008 compromise, the operational services have to receive fast track treatment, according to the validation process that the European Commission has established. So far, the three services proposed are the following: emergency response, land monitoring and marine services²⁰.

Funding

At the beginning, GMES obviously depends on public funding, via the 6th and the 7th Framework Programme (FP). In the last case, it is envisaged that GMES will be allocated a substantial majority of funding available for Space under the 7th FP for Research, Technological Development and Demonstration activities, in particular, the thematic priorities such as "Environment" or "Information Society Technologies".

In the future, where services become integral to the implementation of public policies, they should be supported by the relevant institutional users and, in some areas, they may also attract private sector customers,

making possible some public-private partnerships.

Building on existing capacities

GMES will use the existing European and national capacities to the maximum extent. This is why EC, ESA, EUMETSAT and the Member States, and even the international partners, have to map then and to ensure their interoperability. Notwithstanding, as a matter of urgency, it has to be pointed out that the majority of the GMES-like services rely on observations from a number of satellites that have exceeded, or will do, their nominal end-of-life²¹.

Impact assessment

In line with the overall European Commission Policy, GMES will require justification based on a solid impact assessment, -more that the one related to 7th FP -, before substantial funds are committed. GMES is being studied, in two phases, by independent consultants (whose methodology is supervised by a team of experts named by the Member States). The study identifies a range of strategic benefits, some *non-quantifiable*, and some susceptible to generate *quantifiable* benefits for the period 2005-2030.

Governance

The 2003 Framework Agreement between EC and ESA provides for a “common basis and appropriate operational arrangements for an efficient and mutually beneficial cooperation between the Parties with regard to space activities”, but “in accordance with their respective tasks

and responsibilities and fully respecting their institutional settings”²². This can be considered the appropriate first step, in order to create a joint strategy and programmes for two independent international organizations; however, it results insufficient to create a common structure. According to this and to the effective division of competencies between EC and its Member States:

1. EC will define the priorities and requirements; aggregate the political will and user demand; and ensures the availability and continuity of the service.
2. ESA will support and define the technical specifications of the space component, implement the space component -coordinating the European centres of excellence-, and advise the EU on future space component requirements.
3. Members States may strengthen internal coordination of related data collection and management activities and federate national demand; contribute to the implementation of the spatial data infrastructures and in-situ components; and support the implementation of the space component.

Therefore, the European Commission will manage (either directly or through externalisation) the development of GMES services supported through 7th FP. ESA will manage the development of the space infrastructures identified for support under the 7th FP, in

accordance with the rules of the programme.

In setting up its organisational frame, GMES will fully take into account the experience gained through the Galileo process.

IV. CONCLUSION

This new European vision of space, reflected in the 2003 Framework Agreement and in the 2004 Draft Constitutional Treaty, deems and need a big effort of politicians, jurists and economists in order to find the appropriate answer to these new political, legal and economic challenges related to space activities. The benefits of the Earth observation through the GMES programme, give the European citizens a special opportunity to improve their standard of life, and the European market an unique occasion to enhanced their commercial potential.

Nevertheless, the complexity nature of the EU/EC and ESA as international organisations (applicable

also to their mutual relations) and the increasing difficulties to approve their respective budgets, should receive a comprehensive and integrated answer through a well-established legal framework, implemented by a specific legislation by EU/EC, ESA and their Member States.

Notwithstanding, in the absence of a political and legal general basis, the particular joint action of EU, ESA, its Member States, in collaboration with the international partners, can give rise to a fruitful experience that can make easier to achieve two objectives. The first objective would be to legitimize the ESP and the ESPr, including Galileo or GMES initiatives, vis-à-vis the public opinion. The second one would be to approve the 2004 Draft Constitutional Treaty, or whichever substitute option, because it can be showed as a one of the key points in favour of the adoption of that legal instrument (evidently, it would be maintained as a competence shared between the EU and the Member States).

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² Communication from the Commission to the Council and the European Parliament "European Space Policy - Preliminary Elements", COM (2005) 208 final, 23.5.2005, p. 4.

³ Communication from the Commission to the Council and the European Parliament *White Paper "Space: a new frontier for an expanding Union. An action plan for implementing the*

European Space Policy", COM (2003) 673 final, 11.11.2003, p. 37.

⁴ Framework Agreement between the European Community and the European Space Agency, done at Brussels on the 25th of November in 2003, OJ, L261, of 6.8.2004, p. 63-68.

⁵ The article III-255 of the Treaty states that: "the Union shall draw up a European space policy...;...European laws or framework laws shall establish the necessary measures, which may take the form of a European space programme;...[and] the Union shall establish any appropriate relations with the European Space Agency".

⁶ It is a *minimum*, but this mention is legally and politically very important (the

first Draft of the Constitutional Treaty did not mention even the ESA).

⁷ See the current debate in <http://europa.eu/>

⁸ See the large list of documents in http://europe.eu.int/comm/space/off_docs_en.htm. The EISC members (European Interparliamentary Space Conference) call upon the national governments and the European Council to work in the spirit of the relevant articles in the 2004 Draft Treaty (8th EISC Conclusions, Brussels, 12-14 June 2006), www.belspo.be/belspo/eisc/

⁹ The ESA is a European intergovernmental organization, committed to carry out their science and applications activities for exclusively peaceful purposes (art. II of the ESA Convention). The historical perspective of ESA shows us that the national and the European policy logics are clearly interrelated, because if there is a harmony of national policy logics among all the governments, it is easier to define the European policy logics. Regarding to the finance, this logics appears on every occasion that the European logic is fragile. Finally, some new and innovative rules and procedures are created when the logic of commerce begins to have influence in national governments (the principle of fair return or the rule of the optional participation). *Vid.* Suzuki, K.: *Policy Logics and Institutions of European Space Collaboration*, Ashgate, 2003, p. 209-212.

¹⁰ The EU is the most important sophisticated European structure, which has two different frameworks: the European Communities, and the Cooperation policies (Common Foreign and Security Policy and Justice and Home Affairs). The first one establishes a method of integration, based on the transfer of the exercise of sovereignty rights to the EC, on the respect of the *acquis communautaire*, and on the existence of a unique budget system with its own resources. The second one seems to be closer to the model of intergovernmental organization. The

current basic set-up of the EU do not refer to outer space, nevertheless, this dimension can be found implicit in the European Treaties: research, industrial development, transport networks, telecommunications, agriculture and fisheries, environment, health services, development aid, regional development and security. The Council of the EU approved the 2003 Framework Agreement having regard the art. 170 of the EC Treaty, in conjunction with art. 300. See Faramiñán Gilbert, J.M. and Muñoz Rodríguez, M.C.: "European Space Policy: a Common Future for EU and ESA?", *Proceedings of the 47th Colloquium on Outer Space*, AAIA, 2005.

¹¹ Council Resolutions 2001/C 350/02 (13.11.2001). Communication from the Commission to the Council and the European Parliament "Global Monitoring for Environment and Security (GMES): Establishing GMES capacity by 2008 – Action Plan 2004-2008", COM (2004), 65 final, 1.2.2004. B-5-0045/2004 European Parliament Resolution on the action plan for implementing the European Space Policy.

¹² G8 Recommendation, July 2005. Thus, the EU has included it in the dialogue with their international partners (USA, Russia, China and India) and even in their development strategy (as Africa, through the creation of an African observatory and the implementation of the African Monitoring of the Environment for sustainable Development -AMESD-); *vid.* "EU Strategy form Africa", COM (2005) 489 final, 12.10.2005.

¹³ The European Commission has selected the GMES as one of the quick start projects in its final report to the European Council "European initiative for growth: investing in networks and knowledge for growth and jobs", COM (2003) 609 final/2, 1.11.2003.

¹⁴ The 6th Environmental Action Plan (2004-2010) addresses: climate change, nature and biodiversity, environment and health, natural resources and waste; as

well as natural hazards, e.g. forest fires, floods, tsunami response).

¹⁵ For instance, the imagery acquisition for specific instruments, as the Rapid Reaction Mechanism.

¹⁶ For instance, the area acreages checks and agri-environmental measures.

¹⁷ For instance, the vessels monitoring and detection.

¹⁸ For instance, water, vegetation and food security monitoring activities.

¹⁹ Communication "*Global Monitoring for Environment and Security (GMES): from concept to reality*", *vid. supra* note n. 11.

²⁰ Further pilot services will be introduced, using the same validation process, for instance, the atmospheric monitoring, the crisis prevention or the external border surveillance, to which some Member States have emphasised the importance the attach, such as Spain.

²¹ In this sense, the ESA Director General has proposed to secure an initial budget to cover the first phases of the future structure of GMES (space and ground segment).

²² Art. 1, para. 2 of the 2003 Framework Agreement.