



*European Economic and Social Committee*

**INT/514**  
**GMES – Space component**

Brussels, 14 July 2010

**OPINION**

of the

European Economic and Social Committee

on the

**Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – Global Monitoring for Environment and Security (GMES): Challenges and Next Steps for the Space Component**

COM(2009) 589 final

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Rapporteur: **Mr Iozia**

On 28 October 2008 the European Commission decided to consult the European Economic and Social Committee, under Article 262 of the Treaty establishing the European Community, on the

*Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – Global Monitoring for Environment and Security (GMES): Challenges and Next Steps for the Space Component*  
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The Section for the Single Market, Production and Consumption, which was responsible for preparing the Committee's work on the subject, adopted its opinion on 15 June 2010.

At its 464th plenary session, held on 14 and 15 July 2010 (meeting of 14 July), the European Economic and Social Committee adopted the following opinion by 135 votes with one abstention.

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## **1. Conclusions and recommendations**

- 1.1 The Committee welcomes the Communication from the Commission, and hopes that coherent operational decisions, funding and policies will ensue from decision-making bodies, taking heed of the proposals and indications it contains.
- 1.2 The EESC has always expressed its support for the Commission's proposals in the area of space policy: a technological priority that should be developed more intensively. The responsible and sustainable use of space for non-military, peaceful purposes is a powerful instrument for development.
- 1.3 Space research in general, and GMES in particular, is a fully-fledged part of the "new green economy". The development of applications for agriculture, managing climate change, accurate weather forecasting and territorial management underpins a new model which sees sustainable development as a priority for innovation and technological research.
- 1.4 The Committee shares the Commission's concerns about the lack of information regarding the timeframe applied to the GMES programme. The EESC believes that the programme should be planned to continue until at least 2030, and provision should also be made for basic functions to continue in subsequent years.

- 1.5 The Committee considers that the financial resources are insufficient, both because they fail to take account of the evolution of technological component prices for the Sentinel satellite constellation and because of the meagre sums earmarked for R&S, and especially data collection requirements to tackle climate change and ensure security. At least a further EUR 700/800 million for the 2014-2020 period are required to meet these needs. Launch costs have risen significantly, as have the costs of electronic equipment.
- 1.6 The "space dream", which has engaged entire generations, should be revived through ambitious programmes; attracting young people back to space studies, offering stable job prospects, stressing the high social value of projects such as GMES, which can contribute to reducing the negative effects of climate change, helping human activity, thereby helping to anticipate extreme natural events such as flooding and prolonged drought. Monitoring harmful emissions in the atmosphere will make it possible to test the efficiency of CO<sub>2</sub> reduction measures, for example, or to take the right steps against human trafficking violations, in coordination with Frontex activities.
- 1.7 GMES can make a decisive contribution to waste management policy, by identifying illegal sites and toxic substance spills. It is essential that the GMES space programme should also deal with "space" waste material: recovering obsolete stations and satellites that no longer emit data. The ESA space surveillance programme, in cooperation with the German TIRA system, can contribute to controlling the mass of space debris. Since 1957, 5 000 satellites have been launched, and at present approximately one satellite is launched every two days.
- 1.8 The positive spin-off of a sufficiently long-term programme could, in the EESC's view, generate momentum for the direct involvement of public and private enterprises in the sector, enabling them to plan investment in developing technologies to produce sensing systems that are ever more efficient in terms of cost of service quality. The ability to attract private investment and to create a service market will be crucial to the entire operation's success.
- 1.9 Member States that are still very far from engaging in a space policy could find the guarantee they need to launch initiatives in the certainty of continuity of Community programmes. In this regard, the EESC views the decision taken in February 2010 to set up the GMES Partners Board, actively involving the 27 Member States, as a positive move towards achieving a new balance of knowledge and political commitment to space policy. This body should be opened to civil society representatives.
- 1.10 The availability of a long-term programme would moreover provide a means of giving greater strength and political weight to the EU vis-à-vis other parts of the world now operating in the space sector, and can serve as a positive factor in negotiations to secure the necessary financial contribution that could stem from access to programmes and the results of missions not controlled by the EU.

- 1.11 GMES has the capacity to make a contribution of vital importance in a number of key sectors such as oceanography, air quality monitoring, precision mapping for land use purposes, or rapid production of maps of areas affected by natural disasters, thereby providing essential support for civil protection.
- 1.12 Against the current backdrop of deep economic crisis, this need for substantial resources cannot, in the EESC's view, act as a brake on investment: on the contrary, by mobilising as many available resources as possible, and with the support of public opinion, once made aware of its full potential, the GMES programme can help to bring the crisis to an early end by providing a formidable pool of scientific and production potential, with all the ensuing positive spin-off effects, capable of restoring the EU's flagging leadership position in the sector.

## 2. Introduction

- 2.1 The EU's decision to equip itself with an integrated European Earth observation system to deliver information and services in the environmental and security fields, called Global Monitoring for Environment and Security (GMES), is a strategic choice enabling the EU to maintain and strengthen its leading position in the civil aerospace field.
- 2.2 According to the 2001 Outline GMES European Commission Action Plan, the GMES initiative seeks to bring together the needs of society regarding the environment and security with the advanced technical and operational capability offered by terrestrial and space borne observation systems. It is a response to ensure timely access to information on the environment at global, regional and local scales without sacrificing independence in the following policy areas: sustainable development, global climate change, common defence and security policy, the European research area and the European strategy for space.
- 2.3 The system is based on analysing Earth observation data provided by satellites and *in situ* monitoring networks. Once analysed and coordinated, the data are made available to the final users: national, regional and local authorities and agencies, environmental and civil protection organisations, etc. The GMES initiative is jointly promoted and operated by the European Union (EU) and the European Space Agency (ESA). The ESA makes the decisive contribution to developing the space component, and the EU acts as promoter and demand aggregator.
- 2.4 The GMES programme is divided into three parts: the space component, the *in situ* component, and the services component, regarding which the Commission has issued a proposal for a regulation, on which the EESC has in turn drawn up an opinion<sup>1</sup>.

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<sup>1</sup> CESE 96/2010 on the *Proposal for a Regulation of the European Parliament and of the Council on the European Earth Observation Programme (GMES) and its initial operations (2011-2013)*, COM(2009) 223 final – 2009/0070 (COD).

2.5 Of the three components, the space component is by far the mostly costly, and determines the quality and quantity of the services that can be delivered. It comprises six series of Earth Sentinel observation missions, five of which are financed, that should be launched from 2012. Everything concerning the space segment is controlled, coordinated and implemented by the ESA: not only contracts with industry to develop the satellites and the necessary infrastructure, but also the management of the pilot projects under way in this phase, which will be assessed for future applications.

### 3. **The Communication from the Commission**

3.1 In the Communication, the Commission reports on the achievements so far in the services and *in situ* components, which have already provided good results using existing space infrastructure, in particular on the EUMETSAT and ESA missions, and national missions.

3.2 The foundations for the system's architecture were laid down in 2008, especially the financial requirements and related budget policies. The resources needed to implement the strategy will have to be allocated under the next EU multiannual financial framework. The ESA forecasts expenditure of EUR 4.23 billion over the 2014-2020 period<sup>2</sup>.

3.3 The document analyses some crucial aspects of European space policy, of which GMES, together with the European GNSS programmes (EGNOS and Galileo), is a pivotal element.

3.4 The Commission indicates the funding priorities for completing and developing Sentinels 1, 2 and 3, continuity and accessibility of data, and the need to overcome Member State reticence about the project's duration, currently planned to run until 2020.

3.5 The Commission believes that a policy of full, guaranteed access requires a data ownership regulation. It also addresses the issue of infrastructure ownership and management.

3.6 A significant part of the document concerns procurement policy, which must effectively ensure both cost efficiency and continuous availability of data.

3.7 International cooperation is a cornerstone of the entire GMES programme. Here, GMES represents the EU's contribution to the Global Earth Observation System of Systems (GEOSS) programme. The Commission will develop further exchanges and partnerships within the Committee of Earth Observation Satellites (CEOS), which has specific responsibilities with regard to monitoring the effects of climate change.

3.8 In its conclusion, the Commission summarises the document and undertakes to maintain close oversight of project completion and its constant updating in response to user demand.

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<sup>2</sup> ESA C/ (2009) 36.

#### 4. **The Committee's comments**

- 4.1 The Committee considers space policy to be among the technological priorities demanding the most intensive development, and therefore welcomes the Communication from the Commission, hoping that coherent operational decisions, funding and policies will ensue from decision-making bodies, taking heed of the proposals and indications it contains.
- 4.2 The Committee, while taking a positive view, shares the Commission's concerns about the lack of clarity on the part of the Member States regarding timeframe applied to the GMES programme. It is crucial that they give clear backing to a programme that at present is to be planned at least until 2030. Provision will certainly have to be made, however, for the possibility of continuing its basic functions beyond that date.
- 4.3 It is also essential that the business sector be able to plan investments over a sufficient period of time and to develop technologies to obtain sensing systems that are ever more efficient in terms of cost and service quality.
- 4.4 The Committee considers EUR 4 billion, based on estimates from the ESA's Long-term scenario, to be insufficient. The approximately EUR 600 million a year fails to take account of the evolution of technological component prices for the Sentinel satellite constellation. The amount earmarked for R&D also looks to be insufficient, especially with regard to significant data collection requirements to tackle climate change and ensure security.
- 4.5 While fully endorsing the Commission's proposals, the Committee would urge bolder steps regarding the necessary financial resources: at least a further EUR 700/800 million would be required for the 2014-2020 period, as would a shift of the project's timeframe to at least 2030, an opening up of the space market to all Member State SMEs, clear and open regulation of data access policy, close coordination between all project stakeholders, and lastly a stronger international dimension for the project.
- 4.6 The Commission itself mentions the need for greater investment in security and in a recent communication<sup>3</sup> reports that a call has been published under the 7th Framework Programme (space theme) for proposals to develop pre-operational GMES service capabilities for maritime surveillance. An integrated approach using all available instruments is needed in order to protect the environment, safeguard our seas and coasts from illegal trafficking and save people who put their lives in the hands of ruthless criminal organisations.
- 4.7 Additional resources are needed, to support both on-going training for operators in the sector and projects to encourage young people to study space and its possible applications. In recent years, partly due to the waning public attention to the topic, interest in aerospace engineering

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<sup>3</sup> *Towards the integration of maritime surveillance: A common information sharing environment for the EU maritime domain* COM(2009) 538 final.

has declined, and the number of students following courses and gaining degrees in this subject has plummeted. Technicians are also beginning to be in short supply, and a dedicated policy is needed to direct those interested towards these studies. One of the most common reasons for not taking up this subject is the job prospects, which do not appear either secure or lasting.

- 4.8 The Committee supports the Commission's proposal to take over direct ownership of the system and, consequently, assume management responsibility. The choice of open, continuous and free access seems appropriate and well-considered, provided that security guarantees are put in place by a specific regulation. Guaranteed access can create the right conditions for attracting the interest of private investors in providing services. The emergence of a GMES-related market could, as well as offering economic opportunities and providing a public service, allow certain terrestrial service management costs to be shared.
- 4.9 Proper data management will hinge crucially on the choice of system architecture. Commercial exploitation should always entail a contribution to expenditure, following an appropriate period of market adaptation, as is currently occurring with certain web services, which had until now been free of charge but are gradually introducing user charges. Data for public administrations should in principle be free and accessible, with a range of platforms depending on confidentiality and security requirements.

Significant applications for satellite monitoring have recently come into being. The altimetric satellites of the My Ocean project identified the recurrence of the El Niño phenomenon in 2009; the MACC (Monitoring Atmosphere Composition and Climate) project, a GMES service, has provided information for model simulations on the extent of the Icelandic volcanic ash plume; another GMES service, SAFER (Services and Applications For Emergency Responses) aims to provide detailed mapping within six hours of natural disasters such as earthquakes, floods and landslides, which could be absolutely vital to civil protection operations; G-MOSAIC (Pilot services for security) will carry out surveillance for security purposes ranging from the surveillance of nuclear plants, irregular migration routes and borders to the analysis of war damage and needs.

- 4.10 Procurement policy warrants special attention. The principles contained in the Small Business Act must always apply in public procurement procedures, especially Community ones. A robust support policy for SMEs is needed, particularly those in countries which do not yet have a strong production system and should also benefit from the impending huge investments in the sector. The GMES space component needs not only large companies specialising in aerospace electronics, but also the innovative solutions that small businesses too are capable of providing. Given the European nature of the project, the Commission should encourage the formation of consortiums between transnational companies.
- 4.11 The Committee recommends increasingly close cooperation between the various project stakeholders – the Commission, the Member States, the ESA and EUMETSAT – and supports

the Commission's proposal to share responsibilities among these stakeholders, as described in the Communication.

- 4.12 The Committee believes that the ESA has all the necessary skills to qualify it as the final manager of space infrastructure, in cooperation with the national agencies with regard to the maintenance, development and replacement of the satellite constellations. It strongly recommends testing all legally possible initiatives to assist in following this natural option.
- 4.13 The Committee believes that it will be essential to continue with efforts to strengthen international cooperation. The fight against climate change is necessarily unfolding on a global scale, and data-sharing will be vital to real-time identification of the on-going effects of greenhouse gas emissions and the ensuing climate changes. The Commission has rightly looked into this aspect, and the Committee recommends also involving other nearby partners, possibly involving them with the European strategy for territorial defence, the seas and security. The Union for the Mediterranean, for example, could be an ideal platform for developing such cooperation under existing priority programmes concerning civil protection, cleaning up the Mediterranean and combating climate change. Similarly, the ability to identify the particular characteristics of other specific areas, such as activities currently under way in the Baltic or Danube regions, can also make a positive contribution.
- 4.14 The EESC supports the establishment of the 27-member GMES Partners Board, which also provides for the participation of Switzerland and Norway as ESA members. This body, chaired by the Commission, has as its task to establish cooperation between all Member State bodies, to assist the Commission in monitoring the coherent implementation of the programme and in preparing a strategic implementation framework, and to bring about an exchange of experience and good practice in the field of GMES and Earth observation. This representative body could help to redress the current imbalance in space know-how and activity between the old and new Member States. The establishment of a private users' forum would be ideally suited to the timely analysis of the system's prospects, not to mention cooperation with the Council.
- 4.15 Specific attention is required regarding the short-term programmatic needs, in particular the operation of the A series of Sentinel satellites, the launch of the B series and the procurement of crucial components for the C series.



- 4.16 The Spanish presidency, which is committed to the GMES regulation, and the Belgian presidency, with respect to European space policy, both agree on the need for new impetus. The European Parliament is very much in favour of supporting it. As a result, the conditions are in place to define those aspects still requiring clarification: identifying and allocating the resources the project needs; removing the doubts still surrounding the GMES timeframe, thereby enabling the Sentinel constellations to be developed in accordance with the established programme; strengthening international cooperation and investing more in research and development.

Brussels, 14 July 2010.

The President  
of the  
European Economic and Social Committee

Mario Sepi

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