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**COMMISSION STAFF WORKING DOCUMENT**

*accompanying 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)**

**SUMMARY OF THE IMPACT ASSESSMENT**

{COM(2009) 223}  
{SEC(2009) 639}

## EXECUTIVE SUMMARY

This Impact Assessment has been prepared by the Commission services to support the Commission 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). It also provides an *ex-ante* evaluation in line with Article 21(1) of the Implementing Rules of the Financial Regulation<sup>1</sup>.

GMES is currently and will continue to be co-financed at European, intergovernmental and national levels, based on partnerships among the different players. The EU will both coordinate these partnerships and manage its own contribution to GMES, which consists of development activities and an operational phase.

Regarding development activities, this contribution currently consists, in particular, of the co-financing of research activities under FP 7 und FP 6<sup>2</sup>. First operational services in the field of emergency management and land monitoring are financed under preparatory actions in addition to some other operational elements in the land domain (Corine Land Cover, Urban Atlas).

In the beginning of the next decade (2011 – 2013), operational services could be provided at a larger scale. Investments could be needed to set up the appropriate infrastructure for the required service processing chain and the roll-out of products based on prototypes developed in the previous research actions. FP7 is an R&D tool and thus not designed to support GMES initial operations to the extent that these need to be ensured on a more permanent basis. It is thus necessary to establish appropriate mechanisms for a Community intervention. This is a challenge that the proposed Regulation is intended to address. The fully-fledged GMES programme, under which the EU contribution to the overall GMES initiative could be financed in the long run, is expected to be in place during the EU's next multiannual financial framework (from 2014). The overall financing needs of GMES after 2013 will be subject to future analysis led by the Commission, on the basis of defined cost-sharing principles and a cost assessment based on the scope of services.

In this context, it should be recalled that the long-term GMES funding approach should be developed in a modular way. This means that new expansions in the scope of GMES services and every new evolution of GMES will be assessed against the criterion of cost efficiency, user needs and EU policy interests. For the period 2011 – 2013, activities in the following fields will be funded in the framework of GMES initial operations:

- emergency response services;

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<sup>1</sup> Commission Regulation (EC, Euratom) No 2342/2002 of 23 December 2002 laying down detailed rules for the implementation of Council Regulation (EC, Euratom) No 1605/2002 on the Financial Regulation applicable to the general budget of the European Communities (OJ L 357, 31.12.2002, p. 1), as last amended by Commission Regulation (EC, Euratom) No 478/2007 of 23 April 2007 (OJ L 111, 28.4.2007, p. 13).

<sup>2</sup> In FP6, the EU spent €100m on GMES projects, while ESA invested another €100m in the GMES service elements projects. In the space theme of the specific programme "cooperation" of FP7, the EU will make €130m available for GMES service projects and procurement of data for these services between 2007 and 2013. An additional €624 m from the space theme of FP 7 will be contributed to development of the ESA GMES space component programme, which amounts to € 2246 m (2008 economic conditions) in total (including funds from ESA Member States).

- land monitoring services;

and auxiliary activities including:

- measures supporting the take-up of services by users;
- data access;
- GMES space component.

The following specific criteria were used for the selection of activities for GMES initial operations.

- sufficient technical maturity;
- continuity with the preparatory action 2008-2010;
- proven potential for the development of downstream services;
- service providers are industry players and would therefore cease activities without additional intervention from the EU, whereas in the field of marine and atmosphere monitoring, services are provided mainly by public institutions that will be able to continue activities (albeit probably at a less ambitious scale) before 2013 without Community support; and
- regarding emergency services, it is clear that it would be preferable to make available emergency maps on an operational basis to civil protection authorities already in 2011, and not 2014.

The Impact Assessment is based on an extensive stakeholder consultation, which confirmed the environmental and policy need for GMES services. Lack of operational emergency response and land monitoring services under EU coordination in the period 2011–2013 would result in the following problems:

- there is a risk that once the existing research projects end (in 2011), during the period covered by the proposed Regulation civil protection authorities would either have no access at all to emergency maps or would continue to produce them on their own in an uncoordinated manner, in which case they would have to rely on data purchased at very high prices;
- users of land monitoring services (e.g. environmental agencies) would face comparable problems between 2011 and 2013, including lack of continuous availability of the relevant products and non-availability of Earth observation data (in particular, satellite data) under reasonable conditions;
- without Community action in the period 2011–2013 enabling initial operational land monitoring and emergency response services, there is a risk of an unacceptable interruption between the research projects providing pre-operational services and the services provided in a fully fledged GMES programme from 2014;
- there is a risk that a long gap between the end of the research activities and the start of fully fledged operations after 2014 would significantly weaken the boost to the industry's

competitiveness and the emergence of commercially viable solutions between 2011 and 2013.

In response to this challenge, the specific objectives of the proposed Regulation are to:

- enable the provision of emergency response services to civil protection authorities;
- enable the provision of land monitoring services to public authorities (including environmental agencies) in Europe;
- contribute to the production and availability of environmental information to the public;
- stimulate the growth of the downstream Earth observation sector in terms of jobs, innovation and international competitiveness.

The operational objectives of the proposed Regulation are:

- to enable the provision of the following operational emergency response services between 2011 and 2013:
  - European mapping service for emergency response; and
  - product integration for emergency response;
- to enable the provision of the following operational land monitoring services between 2011 and 2013:
  - periodic land cover mapping service;
  - dynamic land monitoring activities, including essential climate variables to support climate change monitoring;
- to perform auxiliary activities between 2011 and 2013, including measures to support take-up of operational services by users, data procurement to support services and GMES space component operations.

The policy options open to address the objectives defined in Chapter 3 of the Impact Assessment are:

- Baseline scenario ("Do nothing");
- Option 1: Open method of coordination only;
- Option 2: Regulatory action;
- Option 3: Community financing.

These options are not mutually exclusive. All three could possibly be combined. For the sake of clarity, however, the impact of each of these options is analysed separately. Furthermore, GMES initial operations will be implemented within the governance framework described in detail in the Communication entitled "Global Monitoring for Environment and Security: we care for a safer planet", COM(2008) 748 of 12.11.2008, and the accompanying Impact

Assessment. Finally, the analysis of the different options is based on the assumption that GMES data and information will be fully and openly accessible. The Commission will continue to explore whether the development of market opportunities and cost based user charges could eventually allow the reduction of the proportion of public investment after 2014.

The table set out below compares the options in the light of the above objectives and the principle of cost-effectiveness.

Option	Likelihood of achieving the objectives and corresponding benefits	Total cost (including Community and Member State (MS) budgets)		Cost-effectiveness
1	+	Community budget: •Appropriations - •Human resources + •Admin. expenditure +	Costs in MS   ++++	+
2	+	Community budget: •Appropriations - •Human resources + •Admin. expenditure +	Costs in MS   ++++	+
3	+++	Community budget: •Appropriations ++ •Human resources + •Admin. expenditure +	Costs in MS  +++	+++

The likelihood of achieving the objectives is discussed in sections 5.2.1, 5.3.1 and 5.4.1 of the Impact Assessment. Options 1 and 2 are considered unlikely to achieve the specific objectives of GMES initial operations owing to (i) problems with provision of pan-European services, (ii) the lack of capacity and know-how in some Member States and (iii) the lack of sustainability (in particular for budgetary reasons).

Section 5.4 and Annex V quantify the benefits which would materialise if objectives are fully met. In the reference year (2012), annual benefits linked directly to GMES would include €135m for flood services, €9m for wildfire services, a minimum of €75m for deforestation and €6m for urban planning, taking into consideration that these figures (i) are based on conservative assumptions and (ii) do not include benefits relating to, for example, emergency response to volcanic eruptions and earthquakes, nor benefits linked to efficiency gains in agriculture and rural development.

Regarding costs, it is not sufficient to focus on EC costs only, which would add up to €150m for the whole period covered by GMES initial operations (2011–2013), (including €43 m for accompanying research activities financed under FP 7). Costs at Member State level must also be taken into consideration. Although no detailed estimates for the costs incurred by the Member States are available, previous experience from the Corine land cover programme and data submitted by the EEA show that they could be three times higher than the EC costs. It is assumed that both options 1 and 2 would lead to higher overall costs for the EU and Member States due to (i) higher costs for procurement of the data needed to provide the services, given the lack of economies of scale and countervailing buying power, and (ii) the need to duplicate infrastructure in the case of totally decentralised provision of the service.

Option 3 is therefore the preferred option for the period 2011–2013, as it has been demonstrated that this option would (i) make it highly likely that the specific objectives of GMES initial operations would be met, and (ii) could reduce the overall costs, including by means of centralised procurement of the data needed for the services. In any event, EU financing should be accompanied by coordination activities. No EC regulation specifically on GMES is likely to enter into force during the period covered by the proposed Regulation.

Evaluation tasks will be carried out in three phases (ex ante, interim and ex post). In addition to this Impact Assessment, it is envisaged that the Commission will carry out evaluations of i) the preparatory action, and (ii) data access activities, in order to prepare the first work programme for operational activities. Additionally, an interim evaluation report will be prepared no later than the end of 2012. Finally, an ex post evaluation will be prepared after the end of initial operational activities.

The Commission will ensure that contracts and grants concluded in the framework of operational emergency and land monitoring services provide for supervision and financial control by the Commission, if necessary by means of on-the-spot checks, including sample checks, and audits by the Court of Auditors. If need be, the Commission could be assisted by external technical experts when monitoring the implementation of the programme. On the basis of the results of the on-the-spot checks, the Commission will ensure that, if necessary, the scale or the conditions of allocation of the financial contribution originally approved and also the timetable for payments are adjusted.

In addition to financial supervision, the Commission will put in place mechanisms to ensure the continuous quality of the services provided. Finally, the Commission will organise user fora in order to ascertain that services are user-driven.