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COMMISSION OF THE EUROPEAN COMMUNITIES

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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)**

(Text with EEA relevance)

{ SEC(2009) 639 }
{ SEC(2009) 640 }

EXPLANATORY MEMORANDUM

1. CONTEXT OF THE PROPOSAL

1.1. Context

GMES is an Earth observation initiative led by the EU. Europe has decided to develop its own operational Earth observation capacity in order to reflect the EU's growing responsibility in European and world affairs. Establishing such a system marks a strategic choice, with a lasting impact on the further political, economic, social and scientific development of the EU¹.

Earth observation allows collection of information about the planet's physical, chemical and biological systems or, more generally, monitoring of the natural environment. It draws on both space-based (i.e. satellite) and non-space-based facilities, including airborne, seaborne and ground-based ("*in situ*") installations. Data collected via satellites and *in situ* infrastructure are processed to provide information services allowing better management of the environment and enhancing security for citizens. This will make it possible, for example, to manage natural resources and biodiversity more efficiently, to monitor the state of the oceans and the chemical composition of the atmosphere, two key factors in climate change, to respond to natural and man-made disasters, including tsunamis, and to ensure more effective border surveillance.

Over the last thirty years, the EU, the European Space Agency (ESA) and their Member States have made substantial R&D efforts in the field of Earth observation, with a view to developing infrastructure and pre-operational Earth observation services².

However, with the exception of the field of operational meteorology, the data provided by the existing services either do not cover all the parameters needed by policy-makers³ or are not provided on a continuous basis, in particular because the lifetime of the service or the underlying observation infrastructure is limited due to budgetary and/or technical constraints. In other words, many of the existing Earth observation services in Europe are unreliable due to infrastructure gaps and lack of guarantees on their availability in the long term. This is a cause for concern for final users like public authorities, but also for downstream service providers, who are reluctant to invest significantly in non-mature, risky markets and would face additional difficulties with raising capital for such investment.

GMES was conceived to ensure operational Earth observation in environmental and security domains beyond operational meteorology. In this context, the general objectives of GMES are to:

¹ See the Communication entitled "Global Monitoring for Environment and Security: we care for a safer planet" - COM(2008) 748, 12.11.2008, ("the 2008 Communication").

² 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 €430m available for GMES service projects and procurement of data for these services between 2007 and 2013. An additional €624m 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).

³ In particular, information of sufficient quality aggregated at European or global level is not currently available to European policy-makers.

- enable sustainable Earth observation services tailored to the needs of users, including public policy-makers and private citizens. The GMES services will allow policy-makers in particular to:
 - prepare national, European and international legislation on environmental matters, including climate change;
 - monitor implementation of this legislation;
 - have access to comprehensive and accurate information concerning security matters (e.g. for border surveillance);
- ensure the sustainability of the observation infrastructure necessary to provide the GMES services. This will be done either by establishing partnerships with infrastructure owners or by developing new infrastructure if the existing infrastructure is insufficient to produce the data needed for the GMES services;
- create opportunities for greater private-sector use of information sources, thereby facilitating market take-up by value-adding service providers, many of which are small and medium-sized enterprises (SMEs).

1.2. Grounds for and objectives of the proposal

GMES comprises both development activities and an operational phase. Regarding development activities, funds from the Seventh Framework Programme (FP7)⁴ are contributing to development of space infrastructure, as part of the ESA GMES space component programme, and financing pre-operational services in the fields of land monitoring, marine monitoring, atmosphere monitoring, emergency response, security and climate change adaptation and mitigation.

Following the Commission Communication entitled “Global Monitoring for Environment and Security: From Concept to Reality”⁵ and the orientations of the Third Space Council, implementation of GMES operations is following a phased approach, based on clearly identified priorities, starting with development of three fast-track services on emergency response, land monitoring and marine services.

The first operational emergency management and land monitoring services are being financed as preparatory actions⁶. From 2011 to 2013, operational GMES services should be provided on a larger scale, building on and complementing development activities financed under the space theme of the Seventh Framework Programme, and intergovernmental and national activities. This Community action will focus on the full service chain for emergency response and land monitoring, data access and infrastructure operations. This selection is based on following specific criteria:

⁴ See Decision No 1982/2006/EC of the European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007–2013).

⁵ COM(2005) 565, 10.11.2005.

⁶ In line with Article 49(6)(b) of Council Regulation (EC, Euratom) No 1605/2002 of 25 June 2002 on the Financial Regulation applicable to the general budget of the European Communities (OJ L 248, 16.9.2002, p. 1).

- sufficient technical maturity;
- continuity with preparatory actions, and other existing activities outside the research framework programmes, such as Corine land cover;
- 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, 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.

These priorities have been discussed extensively in the aftermath of the Lille GMES Forum organised by the French presidency, including consultations within the GMES Advisory Council. Stakeholders agreed that it will be necessary to complement existing research funds in the period 2011 – 2013 in order to launch services on an operational basis in areas where there is a risk of service interruption. They also acknowledged that the marine and atmospheric monitoring activities are on good track. Owing to the institutional or scientific nature of the European actors involved in their implementation, FP7 seems adequate enough, at this stage, both in volume and as a legal instrument, to allow establishing a capacity which is very close to operational conditions for marine and atmosphere services.

A fully fledged GMES programme is expected to be in place in the course of the next multiannual financial framework (from 2014).

The objective of this proposal is to establish a legal basis for the GMES programme and EC funding of GMES initial operations (2011–2013), as indicated in the 2008 Communication which the Council welcomed in its conclusions of 2 December 2008, in order to:

- enable the provision of emergency response services (including emergency maps and reference maps) to various emergency response actors at Community and Member State level, as well as the key relevant United Nations agencies, including in the areas of civil protection, humanitarian aid and crisis management between 2011 and 2013 on a 24/7 basis, so that they can respond to emergencies and humanitarian disasters more efficiently and effectively;
- enable the provision of land monitoring services (in particular, pre-processed data, pan-European land cover products, high-resolution maps of cities, soil maps and thematic maps) to public authorities (including environmental agencies) in Europe between 2011 and 2013, so that they will be better able to perform their policy-making, implementation and monitoring tasks; land monitoring services could support, inter alia, the implementation of the Soil Thematic Strategy⁷ and the assessment of ecosystems;

⁷ COM(2006) 231, 22.9.2006.

- contribute to the production and availability to public of environmental information, in line, in particular, with the principles of the Aarhus Convention⁸, the INSPIRE Directive and the Shared Environmental Information System (SEIS)⁹;
- stimulate, by lowering the cost of access to information, the growth of the downstream Earth observation sector in terms of jobs, innovation and international competitiveness between 2011 and 2013.

1.3. Financing GMES: from R&D to operations

Research and development aspects of GMES are currently, and will continue to be, co-financed at European, intergovernmental and national levels, based on partnerships between players in the sector. Part of the cost of development and operation of all the space-based¹⁰ and *in situ* installations providing data for the GMES services will be borne by the Member States and intergovernmental organisations, as EC financing of the total costs for all the necessary infrastructure could violate the proportionality and subsidiarity principles. Instead, the EC will concentrate on domains where Community intervention will provide clear added value.

The EU will both coordinate these partnerships and manage its own contribution to GMES. With the exception of a limited contribution to operation of the emergency response and land monitoring services financed as preparatory actions, this contribution currently consists, in particular, of co-financing the following research activities under the space theme of FP7:

- space infrastructure development¹¹ carried out by ESA to fill gaps in existing space infrastructure;
- research on integration of *in situ* data and space data;
- pre-operational service development.

For pre-operational services, research is used to develop service chains, by implementing individual prototypes, tested over selected areas of Europe to make sure that they work satisfactorily. The funding is focusing mainly on development of the processing chain and efforts to validate the concepts and the technologies and services developed.

Enabling operational services over the period 2011–2013 is the next challenge facing GMES. Investment is needed to roll out products based on prototypes developed in the previous research activities in order to meet the demand in terms of data volumes to be processed for full pan-European or global coverage and steady-state operation on a 24/7 basis, with the shortest possible response times.

⁸ The Aarhus Convention of 25 June 1998 on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters gives everyone the rights to receive environmental information held by public authorities (“access to environmental information”), to participate in environmental decision-making and to review procedures to challenge public decisions made without respecting the two above-mentioned rights or environmental law in general (“access to justice”).

⁹ See also section 1.4.

¹⁰ Existing space missions that will provide data for GMES include Spot, TerraSAR-X, EUMETSAT satellites, CosmoSkymed, DMC Deimos, Ikonos, GeoEye, Quickbird and ENVISAT.

¹¹ ESA is currently developing five “sentinel” missions under its GMES space component programme.

FP7 is an R&D tool and, as such, not designed to support GMES initial operations to the extent that these need to be ensured on a more permanent basis. At the same time, research and development activities will continue, e.g. in the field of product validation. Therefore, it will be necessary to use both operational and research funding simultaneously in the future, with each type of funding addressing different but complementary needs. For the period 2011–2013, this means that the FP7 funds already allocated to the space theme should be supplemented by additional non-research funds under the proposed Regulation to cover GMES initial operations. The GMES governance framework will ensure consistency between the research and operational activities. For the design and technical implementation of services, the Commission will rely on the Joint Research Centre (JRC) and Eurostat services.

1.4. Consistency with the other policies and objectives of the Union

The Commission will ensure complementarity and consistency with other Community policies, in particular in relation to competition, the European GNSS programmes, protection of personal data, civil protection and humanitarian aid, cohesion policy and agricultural policy. In addition, GMES is a tool for cooperation linked to development, humanitarian aid and emergency situations worldwide and, more specifically, with Africa.

Furthermore, the GMES services are considered essential not only because the main end-users are policy-makers, but also because they stimulate innovation and growth in the downstream sector. GMES is therefore fully in line with the Lisbon strategy.

GMES will contribute to and benefit from the Shared Environmental Information System (SEIS). First, GMES contributes to the availability of relevant data/products provided via its services. Second, SEIS could contribute to *in situ* data flows for GMES by enabling near real-time availability of data (starting with data covered by environmental legislation, the initial focus of SEIS). In addition, the Commission will ensure coherence of GMES with the collection of data needed for environmental policy in the context of the European Data Centres, in particular insofar as land monitoring is concerned.

As outlined in the 2008 Communication, GMES needs to be compliant with the Infrastructure for Spatial Information in Europe (INSPIRE) framework. INSPIRE is based on a Directive¹² that covers spatial data held by public authorities in the Member States. It places no obligation on Member States to create new geospatial data sets, whereas the objective of GMES is to ensure the continuous availability of operational Earth observation services.

2. CONTENT OF THE REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL ON THE EUROPEAN EARTH OBSERVATION PROGRAMME (GMES) AND ITS INITIAL OPERATIONS (2011 – 2013)

As outlined in section 1.2, the specific objective of the proposed Regulation is to establish a legal basis for the GMES programme and EC funding of GMES initial operations, which should ensure the continuity of GMES components after 2011, selected on the basis of the criteria described above. GMES initial operations (2011–2013) will be managed by the Commission in the framework of the overall GMES activities of the EU, which also cover research activities of the EU and activities of GMES partners. It is of key importance to ensure complementarity with FP7 in terms of both funding and organisational arrangements.

¹² OJ L 108, 25.4.2007, p. 1.

Article 1 of the proposed Regulation GMES defines the subject matter of the Regulation, namely the establishment of a Community programme for Earth observation (the "GMES programme") and the rules for the implementation of GMES initial operations (2011 – 2013).

Article 2 determines the overall content of the GMES programme, which will include a service component, a space component and an in situ component.

Article 3 describes the scope of GMES initial operations which will build on and complement activities financed under the space theme of the Seventh Framework Programme and national activities. The objectives in each of the fields are set out in the Annex to the proposal. The activities listed in Article 2 were determined in line with the modular approach to implementation of GMES. In the light of the criteria described in section 1.2. above, GMES initial operations (2011–2013) should comprise action in the following fields:

- (a) emergency response services;
- (b) land monitoring services;
- (c) measures to support take-up of services by users;
- (d) data access;
- (e) the GMES space component.

The fact that initial operations are to be launched earlier for emergency response and land monitoring services than for other GMES services does not mean that the EU will not contribute to operation of other services (including marine and atmosphere monitoring services) after 2013. After 2013, the EU intends to sustain the full set of GMES services in an operational context.

Article 4 lays down organisational arrangements for GMES initial operations. In particular, it states that the Commission will not only manage its own contribution to GMES but also be responsible for overall coordination of the activities of the GMES partners, i.e. Member States, which shall take the necessary steps to ensure the efficient implementation of the GMES initiative at Member State level. As outlined in the 2008 Communication, the overall governance framework must be distinguished from the technical implementation level, which should be entrusted mainly to European entities which interact with public and private players, including the European Space Agency (ESA), and specialised agencies of the EU¹³. Consequently, technical implementation of the GMES space component will be entrusted to ESA. In addition, Article 4 states that the Commission should ensure the coherence of the GMES programme with other Community policies.

Article 5 defines the legal forms Community funding could take.

Article 6 contains rules concerning participation by non-EU countries in the GMES programme. Given the global nature of GMES, it is essential to provide for participation by non-EU countries, when agreements and procedures so allow. Article 7 on funding lays down

¹³ To include the European Environment Agency (EEA), the European Maritime Safety Agency (EMSA), the European Union Satellite Centre (EUSC), the European Defence Agency (EDA) and the European Agency for the Management of Operational Cooperation at the External Borders (FRONTEX).

the overall financial envelope for a Community financing of GMES initial operations. Appropriations will be authorised annually in line with the Financial Regulation. As in the European GNSS programmes, non-EU countries and international organisations should be free to contribute financially or in kind to the programmes on the basis of appropriate agreements.

Article 8 contains the objectives of the data and information policy for actions financed under the GMES programme. The main objective is full and open access¹⁴, taking into consideration that full and open access could be restricted, in particular in order to ensure adequate protection of data and information for security reasons.

Article 9 provides for regular monitoring of the action financed under the Regulation, in line with applicable EC rules and best practice. The interim and *ex-post* evaluation reports will be submitted to the European Parliament and the Council.

Article 10 covers implementing measures. The details of implementation and the annual work programmes will be decided by a committee procedure. The annual work programme will contain, in particular, a more detailed description of activities in line with the priorities of GMES. The committee established under Article 11 of the proposed Regulation will assist the Commission with implementation of GMES initial operations, whereas the FP7 programme committee in its space configuration will continue to assist the Commission with management of FP7 funds.

Article 11 provides for establishment of a comitology committee in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission¹⁵.

Article 12 contains rules on protection of the Community's financial interests, in order to ensure that appropriate measures are taken to prevent irregularities and fraud.

3. CONSULTATION OF INTERESTED PARTIES AND IMPACT ASSESSMENT

The proposal for a Regulation on the European Earth observation programme (GMES) and its initial operations is based on extensive consultations and accompanied by an Impact Assessment. In 2006, the Commission intensified its consultations with stakeholders, including:

- thematic workshops with users of the future service;
- establishment of "Implementation Groups" composed of representatives of users. The Implementation Groups prepared recommendations on the scope, architecture and implementation plans for the services, including the necessary infrastructure requirements;
- consultation of national GMES coordinators in the GMES Advisory Council;

¹⁴ As outlined in the 2008 Communication, 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.

¹⁵ OJ L 184, 17.7.1999, p. 23.

- regular bilateral meetings between the European Commission's GMES Bureau and stakeholders from industry, regions and elsewhere; and
- organisation of conferences on GMES by successive EU Presidencies.

The stakeholder consultation clearly demonstrated that users cannot rely on research projects alone. They need access to reliable and accurate data and information that is made available in a timely fashion or, for emergency services, even in rush mode. To achieve this goal, according to stakeholders it is necessary to:

- take the necessary steps to expand the preparatory operational budget line introduced in 2008 in order to cover initial operations of GMES services;
- define the scope of activities in a way that complements existing financing and programmatic schemes;
- establish partnerships in order to ensure sustainable operational services;
- ensure that, as a user-driven initiative, service specifications correspond to user needs; and
- facilitate market take-up by the value-adding service industry (including SMEs) by ensuring an open data and information policy.

In addition to the baseline ("Do nothing") scenario, the Impact Assessment report analyses three options for implementation of GMES initial operations: (i) open method of coordination only, (ii) regulatory intervention, and (iii) Community financing. The Impact Assessment demonstrates that Community financing is regarded the best option, as it is likely to be more cost-effective, even in comparison with the best-case scenario for the other options. The analysis of the impact of Community financing has demonstrated that this option would offer value for money and give the downstream sector a sustainable basis on which to develop customised services.

4. SUBSIDIARITY AND PROPORTIONALITY

The subsidiarity principle applies insofar as the proposal does not fall under the exclusive competence of the Community.

For services with pan-European (or even global) coverage, in particular pan-European land cover services, Member States cannot sufficiently achieve the objectives of the proposed action, as the inputs from different Member States have to be aggregated at European level. Provision of other Earth observation services covered by the proposal (e.g. emergency maps or thematic land monitoring maps of more limited geographical scope) can be better achieved by the Community for two reasons. First, more coherent and centralised management of input data from space-based or *in situ* sensors will allow economies of scale. Second, uncoordinated provision of Earth observation services at Member State or regional level would lead to duplication and make it difficult or even impossible to monitor implementation of EC environmental legislation on the basis of transparent and objective criteria. If information produced at Member State level is not comparable, it will not be possible for the Commission to ascertain whether environmental legislation has been implemented correctly in every Member State.

The proposal fully complies with the proportionality principle since (i) the operational GMES services in the fields of land monitoring and emergency response do not replace existing services but complement them or ensure their continuity and (ii) service provision will be centralised at Community level only when indispensable.

5. CHOICE OF LEGAL INSTRUMENT

The Commission proposes to establish the European Earth observation programme (GMES) by Regulation, i.e. an instrument of general application that is binding in its entirety and directly applicable in all Member States. This is because the proposed basic act defines the roles and responsibilities not only of the Commission, but also of the Member States. A Regulation is therefore the instrument best adapted to achieve the desired objective.

6. BUDGETARY IMPLICATION

The financial statement accompanying this proposal for a Regulation sets out budget appropriations for GMES initial operations. The proposal is compatible with the multiannual financial framework for 2007–2013.

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)**

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 157(3) thereof,

Having regard to the proposal from the Commission¹⁶,

Having regard to the opinion of the European Economic and Social Committee¹⁷,

Having regard to the opinion of the Committee of the Regions¹⁸,

Acting in accordance with the procedure laid down in Article 251 of the Treaty¹⁹,

Whereas:

- (1) At its meeting of 15 and 16 June 2001 in Gothenburg, the European Council agreed on a strategy for sustainable development, in order to mutually reinforce economic, social and environmental policies and added an environmental dimension to the Lisbon process.
- (2) In the Resolution on the European Space Policy²⁰ of 21.5.2007 adopted at the fourth joint and concomitant meeting of the Council of the European Union and of the Council of the European Space Agency at ministerial level (the “Space Council”, established in accordance with Article 8(1) of the Framework Agreement between the European Community and the European Space Agency²¹), the Council recognised the actual and potential contributions by space activities to the Lisbon strategy for growth and employment, in the form of providing enabling technologies and services for the emerging European knowledge society and contributing to European cohesion, and underlined that space is a significant element of the strategy for sustainable development.

¹⁶ OJ C , , p. .

¹⁷ OJ C , , p. .

¹⁸ OJ C , , p. .

¹⁹ OJ C , , p. .

²⁰ OJ C 136, 20.6.2007, p. 1.

²¹ OJ L 261, 6.8.2004, p. 64.

- (3) Global Monitoring for Environment and Security (GMES) is an Earth observation initiative led by the European Community and carried out in partnership with the Member States. Its objective is to foster better exploitation of the industrial potential of policies of innovation, research and technological development in the field of Earth observation and to provide information services, which give access to accurate data and information in the field of environment and security under Community control and are tailored to the needs of a wide range of users. Users include decision-makers at European, national, regional and local levels who develop and implement environmental policies.
- (4) In order to achieve the objective of GMES on a sustainable basis, it is necessary to coordinate the activities of the various partners involved in GMES, and to develop, establish and operate service and observation capacity meeting demands of users. GMES will be a key tool to support biodiversity, ecosystem monitoring, and climate change mitigation and adaptation.
- (5) GMES services are necessary in order to foster the use of information sources by the private sector on a continuous basis, thus facilitating innovation by service providers adding value, many of which are small and medium-sized enterprises (SMEs).
- (6) GMES comprises both development activities and operations. Regarding operations, in its third orientations adopted at the Space Council meeting of 28.11.2005, Council supported a phased approach for implementation of GMES based on clearly identified priorities, starting with the development of three fast-track services in the field of emergency response, land monitoring and marine services.
- (7) The first operational services in the field of emergency response and land monitoring were financed as preparatory actions in accordance with Article 49(6)(b) of Council Regulation (EC, Euratom) No 1605/2002 of 25 June 2002 on the Financial Regulation applicable to the general budget of the European Communities²² (hereinafter “the Financial Regulation”).
- (8) In addition to the development activities financed under the space thematic area included in Decision No 1982/2006/EC of the European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013)²³ (hereinafter “the Seventh Framework Programme”), Community action is necessary in the period of 2011-2013 to ensure continuity with the preparatory actions and to establish operational services on a more permanent basis in areas of sufficient technical maturity with a proven potential for the development of downstream services, including emergency response and land monitoring. Marine and atmosphere services will continue to be developed in parallel to the emergency management and land monitoring service with support of the research and development funding under the Seventh Framework Programme, including the establishment of a pre-operational capacity before 2013.

²² OJ L 248, 16.9.2002, p. 1.

²³ OJ L 400, 30.12.2006, p 1.

- (9) In its Communication entitled “Global Monitoring for Environment and Security (GMES): we care for a safer planet”²⁴, the Commission outlined its approach to the governance and financing of GMES and indicated its intention to delegate technical implementation of GMES to specialised entities, including ESA for the GMES space component owing to its unique position and expertise.
- (10) Operational services in the field of emergency mitigation and humanitarian responses are necessary in order to coordinate the existing capacity of the Community and its Member States to be better prepared, respond to and recover from natural and man-made disasters, which often also have a negative impact on the environment. As climate change could lead to an increase in emergencies, GMES will be essential for climate change adaptation. GMES services should therefore deliver geospatial information to support various players in the field of emergency and humanitarian responses.
- (11) Land monitoring services are important for monitoring of biodiversity and ecosystems, climate change mitigation and adaptation and the management of a wide range of resources and policies, most of which relate to the natural environment: soil, water, agriculture, forests, energy and utilities, built-up areas, recreational facilities, infrastructure and transport. Operational land monitoring services are necessary at both European and global levels, developed in collaboration with Member States, third countries in Europe and partners outside Europe and with the United Nations.
- (12) The provision of operational services financed under this Regulation depends on access to data collected via space infrastructure and airborne, seaborne and ground-based facilities (“in situ infrastructure”) and survey programmes. Access to such data should therefore be ensured and where necessary in-situ data collection complementary to Community and national activities should be supported. This is particularly important where such data collection is not required under Community or national law. Finally, the continuous availability of the underlying in situ and space infrastructure needs to be ensured, including space infrastructure specifically developed for GMES in the framework of the ESA GMES space component programme (the Sentinel missions). The first Sentinels will enter their initial operations phase starting in 2011.
- (13) The Commission should ensure the complementarity of GMES related research and development activities under the Seventh Framework Programme, the EC contribution to GMES initial operations, activities of GMES partners and already existing structures, such as the European Data Centres.
- (14) GMES initial operations should be implemented consistently with other relevant Community policies, instruments and action, in particular with competitiveness and innovation, cohesion, research, transport and competition policies, the European Global Navigation Satellite Systems (GNSS) programme and protection of personal data. Furthermore, GMES should support development of the infrastructure for spatial information in the Community established by Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing and Infrastructure for

²⁴ COM(2008) 748, 12.11.2008.

Spatial Information in the European Community (INSPIRE)²⁵. GMES should also complement the Shared Environmental Information System (SEIS)²⁶ and Community activities in the field of emergency response.

- (15) The Agreement on the European Economic Area and the Framework Agreements with candidate and potential candidate countries provide for participation by those countries in Community programmes. Participation by other non-EU countries and international organisations should be rendered possible by the conclusion of international agreements to that effect.
- (16) For the entire duration of GMES initial operations, a financial envelope of EUR 107m constituting the prime reference, within the meaning of point 37 of the Interinstitutional Agreement of 17 May 2006 between the European Parliament, the Council and the Commission on budgetary discipline and sound financial management²⁷ should be established. It is envisaged that this financial envelope will be complemented by an amount of EUR 43 million from the space theme of the Seventh Framework Programme for research actions accompanying GMES initial operations.
- (17) In accordance with the Financial Regulation, Member States, non-EU countries and international organisations should be free to contribute to the programmes on the basis of appropriate agreements.
- (18) GMES services should be fully and openly accessible. This is necessary to promote the use and sharing of Earth observation data and information in accordance with the principles of the SEIS, INSPIRE and Global Earth Observation System of Systems (GEOSS).
- (19) The action financed under this Regulation should be monitored and evaluated in order to allow readjustments.
- (20) The measures necessary for implementation of this Regulation should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission²⁸.
- (21) In particular the Commission should be empowered to adapt the Annex to technical and scientific progress. Since those measures are of general scope and are designed to amend non-essential elements of this Regulation, they must be adopted in accordance with the regulatory procedure with scrutiny provided for in Article 5(a) of Decision 1999/468/EC.
- (22) Appropriate measures should also be taken to prevent irregularities and fraud and the necessary steps should be taken to recover funds lost, wrongly paid or incorrectly used, in accordance with Council Regulations (EC, Euratom) No 2988/95 of 18 December 1995 on the protection of the European Communities' financial

²⁵ OJ L 108, 25.4.2007, p. 1.

²⁶ COM(2008) 46.final

²⁷ OJ C 139, 14.6.2006, p. 1.

²⁸ OJ L 184, 17.7.1999, p. 23.

interests²⁹ and (Euratom, EC) No 2185/96 of 11 November 1996 concerning on-the-spot checks and inspections carried out by the Commission in order to protect the European Communities' financial interests against fraud and other irregularities³⁰ and Regulation (EC) No 1073/1999 of the European Parliament and of the Council of 25 May 1999 concerning investigations conducted by the European Anti-Fraud Office (OLAF)³¹.

- (23) Since the objective of this Regulation, namely the establishment of the GMES programme and its initial operations, cannot be sufficiently achieved by the Member States because GMES initial operations will also comprise pan-European capacity and depend on coordinated provision of services throughout the Member States that needs to be coordinated at Community level and can therefore, by reason of the scale of the action, be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in the same Article, this Regulation does not go beyond what is necessary in order to achieve these objectives,

HAVE ADOPTED THIS REGULATION:

Article 1
Subject-matter

This Regulation establishes the European Earth observation programme (GMES) (hereinafter "GMES programme") and lays down the rules for the implementation of GMES initial operations.

Article 2
GMES programme

1. The GMES programme shall build on the research activities carried out under Decision No 1982/2006/EC (hereinafter "the Seventh Framework Programme") and the GMES Space Component Programme of the European Space Agency.
2. The GMES programme shall comprise the following:
 - (a) a service component ensuring access to information covering the following thematic areas:
 - land monitoring;
 - emergency management;
 - security;
 - monitoring of the marine environment;

²⁹ OJ L 312, 23.12.1995, p. 1.

³⁰ OJ L 292, 15.11.1996, p. 2.

³¹ OJ L 136, 31.5.1999, p. 1.

- atmosphere monitoring;
 - climate change adaptation and mitigation;
- (b) a space component ensuring sustainable spaceborne observations for the thematic areas referred to in point (a);
- (c) an in situ component ensuring observations through airborne, seaborne and ground-based installations for the thematic areas referred to in point (a).

Article 3 *GMES initial operations (2011-2013)*

1. GMES initial operations shall cover the period 2011–2013 and comprise actions in the following fields:
 - (1) emergency response services;
 - (2) land monitoring services;
 - (3) measures to support take-up of services by users;
 - (4) data access, including support to in situ data collection;
 - (5) the GMES space component.
2. The specific objectives of the actions referred to in paragraph 1 are defined in the Annex.

The Commission may adapt the Annex to technical and scientific progress.

Those measures, designed to amend non-essential elements of this Regulation, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 11(2).

Article 4 *Organisational arrangements*

1. The Commission shall ensure coordination of the GMES programme with activities at national, Community and international level.
2. The Commission shall manage the funds allocated to the activities under this Regulation in accordance with Regulation (EC, Euratom) No 1605/2002 (hereinafter "the Financial Regulation") and shall ensure complementarity and consistency of the GMES programme with other relevant Community policies, instruments and actions, relating in particular to competitiveness and innovation, cohesion, research, transport and competition, the European Global Navigation Satellite Systems (GNSS) programmes, the protection of personal data, Directive 2007/2/EC (INSPIRE), the Shared Environmental Information System (SEIS) and Community activities in the field of emergency response.

3. The Member States shall take the necessary steps to ensure the implementation of GMES at Member State level and potential synergies with relevant national, Community and international initiatives.

The European Space Agency shall be entrusted with implementation of the GMES space component, relying on the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) where necessary.

Article 5 *Forms of Community funding*

1. Community funding may take, in particular, the following legal forms:
 - (1) grants;
 - (2) public procurement contracts.
2. Community grants may be provided in specific forms, including framework partnership agreement, or co-funding of operating or action grants. Operating grants to bodies pursuing objectives of general European interest shall not be subject to the degressivity provisions of the Financial Regulation. For grants, the maximum rate of co-financing shall be adopted in accordance with the procedure of Article 11(3).

Article 6 *Participation of third countries*

The following countries may participate in the actions referred to in Article 2(1):

- (1) European Free Trade Association (EFTA) countries which are Contracting Parties to the EEA Agreement in accordance with the conditions laid down in the EEA Agreement
- (2) the candidate countries, as well as potential candidates included in the stabilisation and association process in accordance with the Framework Agreements, or Protocol to an Association Agreement, on the general principles for the participation of those countries in Community programmes, concluded with those countries
- (3) the Swiss Confederation, other third countries not referred to in points (1) and (2), and international organisations, in accordance with agreements concluded by the European Community with such third countries or international organisations, pursuant to Article 300 of the EC Treaty, which shall lay down the conditions and detailed rules for their involvement.

Article 7 *Funding*

1. The financial envelope allocated to the implementation of this Regulation shall be EUR 107 million.

2. Appropriations shall be authorised annually by the budgetary authority within the limits laid down in the multi-annual financial framework.
3. Third countries or international organisations may also provide additional funding for the GMES programme.

Additional funds referred to in the first subparagraph shall be treated as assigned revenue, in accordance with Article 18 of the Financial Regulation.

Article 8 *GMES Data and Information Policy*

1. The data and information policy for actions financed under the GMES programme shall have the following objectives:
 - (a) promoting the use and sharing of GMES information and data;
 - (b) full and open access to information produced by GMES services and data collected through GMES infrastructure, subject to relevant security restrictions;
 - (c) strengthening Earth observation markets in Europe, in particular the downstream sector, with a view to enabling growth and job creation;
 - (d) contributing to the sustainability of the provision of GMES data and information;
 - (e) supporting the European research communities.
2. The Commission shall implement the objectives of the GMES data and information policy for the service component, the space component and the in situ component, in particular by ensuring that grant agreements, procurement contracts and delegation agreements concluded with GMES service providers, operators of GMES infrastructure and data providers are in line with the objectives referred to in paragraph 1.

Article 9 *Monitoring and evaluation*

1. The Commission shall monitor and evaluate the implementation of actions referred to in Article 3(1).
2. The Commission shall submit to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions an interim evaluation report by 31 December 2012 and an ex-post evaluation report.

Article 10
Implementing measures

1. The Commission shall adopt the annual work programme pursuant to Article 110 of the Financial Regulation and Articles 90 and 166 of Regulation (EC, Euratom) No 2342/2002³² in accordance with the procedure referred to in Article 11(3);
2. The financial allocation for the GMES programme may also cover expenses relating to preparatory, monitoring, control, audit and evaluation activities which are required directly for the management of the GMES programme and the achievement of its objectives, and in particular studies, meetings, information and publication actions, together with all other technical and administrative assistance expenses that the Commission may incur for the management of the GMES programme.

Article 11
Committee

1. The Commission shall be assisted by a committee (the “GMES Committee”).
2. Where reference is made to this paragraph, Article 5a(1) to (4) and Article 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.
3. Where reference is made to this paragraph, Articles 4 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

The period laid down in Article 4(3) of Decision 1999/468/EC shall be set at two months.

Article 12
Protection of the Community's financial interests

1. The Commission shall ensure that, when actions financed under this Regulation are implemented, the financial interests of the Community are protected by the application of preventive measures against fraud, corruption and any other illegal activities, by means of effective checks and by the recovery of amounts unduly paid and, if irregularities are detected, by effective, proportional and dissuasive penalties, in accordance with Regulation (EC, Euratom) No 2988/95, Regulation (Euratom, EC) No 2185/96 and Regulation (EC) No 1073/1999.
2. For the Community actions financed under this Regulation, the notion of irregularity referred to in Article 1(2) of Regulation (EC, Euratom) No 2988/95 shall mean any infringement of a provision of Community law or any breach of a contractual obligation resulting from an act or omission by an economic operator, which has, or would have, the effect of prejudicing the general budget of the Communities, by an unjustified item of expenditure.

³² OJ L 357, 31.12.2002, p. 1.

3. Agreements resulting from this Regulation, including agreements concluded with participating third countries and international organisations, shall provide for supervision and financial control by the Commission, or any representative authorised by it, and audits by the Court of Auditors, if necessary on-the-spot.

Article 13
Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

For the European Parliament
The President

For the Council
The President

ANNEX

Objectives of GMES initial operations (2011–2013)

The actions referred to in Article 2(1) shall have the following objectives:

- (1) emergency response services, based on existing activities in Europe, shall ensure that Earth observation data and derived products are made available for the benefit of emergency response players at international, European, national and regional levels to different types of disasters, including meteorological hazards (including storms, fires and floods), geophysical hazards (including earthquakes, tsunamis, volcanic eruptions and landslides), deliberate and accidental man-made disasters and other humanitarian disasters. As climate change could lead to an increase in emergencies, GMES emergency response will be essential to support climate change adaptation measures in this area as a part of the prevention, preparedness, response and recovery activities in Europe;
- (2) land monitoring services shall ensure that Earth observation data and derived products are made available for the benefit of European, national and regional authorities responsible for the environmental monitoring of biodiversity, soil, water, forests and national resources, as well as in general implementation of environmental policies, collection of geographical information, agriculture, energy, urban planning, infrastructure and transport. Land monitoring services shall include monitoring of climate change variables;
- (3) measures to support take-up of services by users shall include implementation of technical interfaces adapted to the specific user environment, training, communication and development of the downstream sector;
- (4) data access, including support to in situ data collection shall ensure that Earth observation data from a wide range of European missions and other types of infrastructure, including in situ infrastructure, are collected and made available to achieve the objectives of GMES and, in particular, the emergency response and land monitoring services;
- (5) GMES initial operations shall ensure the operations of the GMES space component, which consists of space-borne Earth observation infrastructure and aims at ensuring observation of Earth sub-systems (including land surfaces, atmosphere and oceans). It shall be based on existing or planned national and European space infrastructure and on space infrastructure developed in the GMES Space Component Programme.

LEGISLATIVE FINANCIAL STATEMENT

1. NAME OF THE PROPOSAL:

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).

2. ABM/ABB FRAMEWORK

Policy area(s): Enterprise.

Activity/Activities: Competitiveness, industrial policy, innovation and entrepreneurship.

3. BUDGET LINES

3.1. Budget lines (operational lines and related technical and administrative assistance lines (ex-B.A lines)), including headings:

New budget line: 02.02.15

3.2. Duration of the action and of the financial impact:

2011-2013 for commitments and 2011-2016 for payments.

3.3. Budgetary characteristics (*add rows if necessary*):

Budget line	Type of expenditure		New	EFTA contribution	Contributions from applicant countries	Heading in financial framework
02.02.15.XX	Comp	Diff ³³	YES	YES	YES	1a
02.01.04.05	Comp/ Non-comp	Diff	YES	YES	YES	1a

³³ Differentiated appropriations.

4. SUMMARY OF RESOURCES

4.1. Financial resources

4.1.1. Summary of commitment appropriations (CA) and payment appropriations (PA)

EUR million (to 3 decimal places)

Expenditure type	Section No		2011	2012	2013	2014	2015	Total
Operational expenditure³⁴								
Commitment appropriations (CA)	8.1	a	9	39	54			102
Payment appropriations (PA)		b	4.5	34.5	42	17	4	102
Administrative expenditure within reference amount³⁵								
Technical & administrative assistance (NDA)	8.2.4	c	1	2	2			5
TOTAL REFERENCE AMOUNT								
Commitment appropriations		a+c	10	41	56			107
Payment appropriations		b+c	5.5	36.5	44	17	4	107
Administrative expenditure <u>not</u> included in reference amount³⁶								
Human resources and associated expenditure (NDA)	8.2.5		2.1	2.5	2.8			7.4
Administrative costs, other than human resources and associated costs, not included in reference amount (NDA)	8.2.6		0.3	0.4	0.4			1.1

³⁴ Expenditure that does not fall under Chapter xx 01 of Title xx.

³⁵ Expenditure within Article xx 01 04 of Title xx.

³⁶ Expenditure within Chapter xx 01 other than Articles xx 01 04 or xx 01 05.

Total indicative financial cost of intervention

TOTAL CA including cost of human resources			14.4	45.9	55.2			115.5
TOTAL PA including cost of human resources			7.9	39.4	47.2	17	4	115.5

4.1.2. Compatibility with financial programming

- ☐ Proposal is compatible with existing financial programming.
- ☒ Proposal will entail reprogramming of the relevant heading in the financial framework.
- ☐ Proposal may require application of the provisions of the Interinstitutional Agreement³⁷ (i.e. flexibility instrument or revision of the financial framework).

4.1.3. Financial impact on revenue

- ☐ Proposal has no financial impact on revenue.
- ☒ Proposal has financial impact.

4.2. Human resources FTE (including officials, temporary and external staff) – see details under point 8.2.1

Annual requirements	2011	2012	2013
Total number of human resources	18	22	24

5. CHARACTERISTICS AND OBJECTIVES

5.1. Needs to be met in the short or long term

As outlined in Chapter 1 of the Explanatory Memorandum, GMES is an Earth observation initiative. It draws on both space-based (i.e. satellite) and non-space-based facilities, including airborne, seaborne and ground-based (“*in situ*”) installations. Data collected via satellites and *in situ* infrastructure are processed to provide information services in the fields of land monitoring, marine monitoring, atmosphere monitoring, emergency response, security and climate change mitigation and adaptation.

³⁷ See points 19 and 24 of the Interinstitutional Agreement.

GMES is currently co-financed at European, intergovernmental and national levels, based on partnerships between the different players. With the exception of a limited contribution in particular to operation of an emergency response and land monitoring service financed as preparatory action³⁸, this contribution currently consists, in particular, of research and development activities under FP7.

From 2011 to 2013, the envelope available within the Seventh Framework Programme (FP7) will have to be topped up in response to the following needs: First, initial operational GMES services should be provided on a larger scale in order to pave the way for the fully fledged GMES programme to be established under the next multiannual financial framework (from 2014). Second, some of the pre-operational service projects financed under FP7, in particular emergency and land-monitoring services, have reached a degree of maturity that allows a transition to operational services (i.e. on a non-research basis) even before the next multiannual financial framework.

Access to emergency maps should be organised on an operational basis as soon as possible in order to allow civil protection authorities in the Member States to respond more effectively to man-made or natural disasters and promote closer coordination between countries affected in the event of transnational emergencies. Effective delivery of civil protection services has a by no means negligible economic impact as it may be critical not only for protection of individuals' safety but also for preservation of critical economic infrastructure.

Land monitoring services will support policy-makers (including environmental agencies) in formulating, implementing and monitoring compliance of action addressing land use, land cover changes and urban management issues.

Both emergency response and land monitoring services depend on auxiliary activities such as access to data. The datasets acquired for the services should be re-usable by users for further elaboration, i.e. by acquiring multi-user licences within the limits allowed by the budget. Beyond that, the infrastructure necessary to collect the data also needs to be operated.

This proposal is targeted at public and private organisations and businesses providing Earth observation-based services.

5.2. Value-added of Community involvement and coherence of the proposal with other financial instruments and possible synergy

As the Explanatory Memorandum demonstrates, Community financing is the most suitable form of intervention to address these needs.

For pan-European products, Member States cannot sufficiently achieve the objectives of the proposed action, as the inputs from different Member States have to be aggregated at

³⁸ In line with Article 49(6)(b) of the Financial Regulation.

European level. Provision of other services (e.g. emergency maps or thematic land monitoring maps of more limited geographical scope) can be better achieved by the Community for two reasons. First, more coherent and centralised management of input data from space-based or *in situ* sensors will allow economies of scale. Second, uncoordinated provision of Earth observation services at Member State level would lead to duplication and make it difficult or even impossible to monitor implementation of EC environmental legislation on the basis of transparent and objective criteria.

By ensuring greater use of these services throughout the EU by an ever wider range of potential users, the Community can also contribute to maximising the added value of such services and to reaping the full economic and social benefits stemming from strong development of downstream markets, leading to creation of new jobs and new innovative services in the private sector.

At present there are no other financial instruments focusing specifically on the needs addressed by this proposal. However, there will be links between the actions to implement this programme and research activities in these fields funded by the EC Framework Programmes. These links are highly desirable as they demonstrate successful completion of the research phase and phasing-in of an operational stage, which may be granted support from this programme.

The Commission will ensure complementarity and consistency with other Community policies, in particular in relation to competition, transport, the European GNSS programme, protection of personal data, cohesion policy³⁹, INSPIRE and SEIS. In addition, GMES should be a tool for cooperation linked to development, humanitarian aid and emergency situations worldwide and, more specifically, with Africa.

Further, the GMES services are considered essential not only because the more direct users are policy-makers, but also because they stimulate innovation and growth in the downstream sector. GMES is therefore fully in line with the Lisbon strategy.

5.3. Objectives, expected results and related indicators of the proposal in the context of the ABM framework

This proposal is linked to the Community competitiveness, industrial, innovation and entrepreneurship policies and has the following objectives:

- (1) enable initial operational GMES services, tailored to the needs of users, including public policy-makers and private citizens;
- (2) contribute to the sustainability of the observation infrastructure necessary to enable the GMES services;

³⁹ Section 1.1.2 of the Community Strategic Guidelines on Cohesion for 2007–2013 underlines the need to strengthen the links between environmental protection and growth and makes specific reference to GMES.

- (3) create opportunities for increased private sector usage of information sources, thereby facilitating innovation by value-adding service providers.

In particular, development of Earth observation-based services plays a key role in enhancing competitiveness and innovation in industries in this sector and in the downstream markets. Sustainable provision of Earth observation-related services in Europe still requires consistent public intervention. This is not only because of market failures in answering diverse public needs but also because the downstream market is a non-mature market relying heavily on public funding and whose development has, until today, been significantly curbed by uncertainties about the affordability and long-term availability of the basic services and the data they build upon. Achievement of the specific objectives outlined above will therefore contribute to growth and job creation in an innovative sector, the downstream segment of which is made up mainly of SMEs. These services will facilitate access to key data required in policy formulation at local and regional level in fields such as agriculture, including forestry, and water management. For example, they could contribute to improving road network design and maintenance. Ultimately, this will also have an impact on assessing climate change better.

The emergency component is expected to lead to more effective delivery of civil protection services, contributing to avoiding loss of life and mitigating damage to critical economic infrastructure, by allowing better forecasting of the areas subject to environmental risks, access to more timely and accurate mapping services during disasters and better management of the crisis after the event has occurred. The operational objectives, outputs, results and related indicators are summed up in the table below.

Operational objective	Output	Output target indicator	Results	Result indicator	Impact	Impact indicator
1. To enable the provision of emergency response services	1.1. European mapping service for emergency response	Mapping activated on demand at European level	Improved availability and timeliness of map delivery	Demand satisfied within budget available	More timely and reliable access to data and information produced by the action	Degree of satisfaction of relevant user
	1.2. Product integration for emergency response	Dedicated mapping activated on demand	Enhanced availability of dedicated regional mapping service			
2. To enable the provision of land monitoring services	2.1. Periodic land cover mapping service	Pan-EU land cover and hot spot land cover maps service	Enhanced availability of mapping service	Demand satisfied within budget available		
	2.2. Dynamic land monitoring activities	Essential climate variables produced on a daily basis	Steady flow of data			
3. To support take-up of services by users	3. Measures to support take-up of operational services by users	Accompanying measures (including interfaces and training) to stimulate use of information by users	Technical interfaces in place and users aware of services	Enhanced awareness of users and use of services		

4. To provide financial support for GMES space component operations	4. Routine operations of sentinels 1A, 2A and 3A ⁴⁰ and data access-related ground segment operations	Grants supporting sentinel operations	Routine operations of the three sentinels ensured	No disruption of operations	Routine operations ensured over the duration of the action	
5. Acquisition and provision of data	5. Data procurement in support of service operations	Contract for data acquisition/access	Multi-user licences for data	Enhanced data availability and access		

⁴⁰

The Sentinels are space missions developed in the framework of an ESA optional programme co-financed by the EU.

5.4. Method of implementation (indicative)

Show below the method(s)⁴¹ chosen for implementation of the action.

X Centralised management

X Directly by the Commission

X Indirectly by delegation to:

Executive agencies

X Bodies set up by the Communities as referred to in Article 185 of the Financial Regulation

X National public-sector bodies/bodies with public-service mission

X International organisations

Shared or decentralised management

With Member States

With Third countries

X Joint management with international organisations (European Space Agency)

The various actions will be implemented directly by the Commission by means of:

- Grants awarded by means of an open call for proposals;
- Grants awarded to designated beneficiaries identified in the annual work programme;
- Tendering procedures.

⁴¹ If more than one method is indicated please provide additional details in the “Relevant comments” section of this point.

6. MONITORING AND EVALUATION

6.1. Monitoring system

A monitoring system will be put in place to ensure the highest quality outputs and most efficient use of resources. Monitoring will run throughout the life of the programme. It will be based on feedback about the programme from institutional users and beneficiaries, including data review and data collection by means of targeted surveys.

6.2. Evaluation

6.2.1. Ex-ante evaluation

An extended impact assessment integrating *ex-ante* evaluation requirements has been undertaken. Following comparative assessment of the available policy options, the preferred policy option was identified and the associated impact, risks, assumptions and cost-effectiveness were assessed. This proposal is fully consistent with the conclusions of the assessment.

6.2.2. Measures taken following an intermediate/ex-post evaluation (lessons learned from similar experience in the past)

This proposal builds on the experience acquired during development of GMES as a research initiative over the last ten years. This experience proves that, while funding for research is still necessary to continue development of GMES, it has become necessary to support delivery of some key Earth observation services in order to reap the full benefits of the investments made so far and to respond to the needs identified above.

6.2.3. Terms and frequency of future evaluation

Eighteen months after the start of the programme, an external interim evaluation will be undertaken of the results achieved and of the qualitative aspects of implementation of the programme. Two years after the end of the programme, an external *ex-post* evaluation of its results and impact will be submitted.

7. ANTI-FRAUD MEASURES

Administrative monitoring of the contracts, grants and related payments will be the responsibility of the central Commission services and/or EC Delegations in beneficiary countries.

Particular attention will be paid to the nature of expenditure (eligibility), to keeping to the budget (actual costs) and to verifying supporting documents and relevant documentation.

8. DETAILS OF RESOURCES

8.1. Objectives of the proposal in terms of their financial cost

Commitment appropriations in EUR million (to 3 decimal places)

(Headings of objectives, action and outputs should be provided)	Type of output	Av. cost	2011		2012		2013		TOTAL	
			No of outputs	Total cost	No of outputs	Total cost	No of outputs	Total cost	No of outputs	Total cost
OPERATIONAL OBJECTIVE No 1 Emergency response services										
- Output 1.1: European mapping service for emergency response	Service	3	1	1	1	3	1	5		9
- Output 1.2: Product integration for emergency response	Service	1	1	1	1	1	1	1		3
Sub-total Objective 1		2	2	2	2	4	2	6		12
OPERATIONAL OBJECTIVE No 2 Land monitoring services										
- Output 2.1: Periodic land cover mapping service	Service	7	1	2	1	8	1	11		21
- Output 2.2: Dynamic land monitoring activities	Service	1.7	1	1	1	2	1	2		5
Sub-total Objective 2		4.3	2	3	2	10	2	13		26
OPERATIONAL OBJECTIVE No 3 Take-up of the services by users										
- Output 3: Measures to support take-up of operational services by users	Set of accompanying measures	1.7	1	1	1	2	1	2		5

(Headings of objectives, action and outputs should be provided)	Type of output	Av. cost	2011		2012		2013		TOTAL	
			No of outputs	Total cost	No of outputs	Total cost	No of outputs	Total cost	No of outputs	Total cost
Sub-total Objective 3		1.7	1	1	1	2	1	2		5
OPERATIONAL OBJECTIVE No 4 GMES space component operations										
- Output 4: Support for space infrastructure operations	Satellite operations	20	-	-	1	15	1	25		40
Sub-total Objective 4		20	-	-	1	15	1	25		40
OPERATIONAL OBJECTIVE No 5 Access to data for the services	Type of output	Av. cost	2011		2012		2013		TOTAL	
			No of outputs	Total cost	No of outputs	Total cost	No of outputs	Total cost	No of outputs	Total cost
- Output 5: Acquisition of data and support for data access	Dataset	8	1	4	1	10	1	10		24
Sub-total Objective 5		8	1	4	1	10	1	10		24
TOTAL COSTS				10		41		56		107
COSTS FOR RESEARCH ACTIVITIES FINANCED UNDER THE FP7 SPACE THEME ACCOMPANYING INITIAL OPERATIONS				10		15		18		43
TOTAL (INCLUDING FP 7):				20		56		74		150

8.2. Administrative expenditure

8.2.1. Number and type of human resources

DG ENTR calculates the staffing needs for this initiative as follows.

Types of post		Staff to be assigned to management of the action using existing and/or additional resources (number of posts/FTEs)					
		2011	2012	2013	Year n+3	Year n+4	Year n+5
Officials or temporary staff ⁴² (XX 01 01)	A*/AD	11	12	12			
	B*, C*/AST	6	8	9			
Staff financed ⁴³ by Article XX 01 02		1	2	3			
Other staff ⁴⁴ financed by Article XX 01 04/05		0	0	0			
TOTAL		18	22	24			

The DG will seek to rationalise its organisational set up by seeking increased synergies and re-examine its staffing situation in the light of circumstances pertaining at the time and in particular in the light of the findings of the Commission's ongoing HR screening process. It is expected that by exploring these means sufficient internal redeployment possibilities will be identified to cover the majority of staff needed for this initiative. If the full number of staff needed cannot be identified in this process, the user DGs will make a request for the balance of the staff needs in the respective APS exercise.

8.2.2. Description of tasks deriving from the action

- Policy officers (AD/SNE): responsible for programme-related policy design and overall coordination;
- Programme managers (AD): responsible for programme implementation, monitoring and evaluation;
- Assistant programme managers (AST): responsible for assisting programme managers in their tasks;
- Finance and contracts assistants (AST/contract agents): responsible for management of grants and contracts;
- Administrative assistants (AST): responsible for administrative and secretarial support.

⁴² Cost of which is NOT covered by the reference amount.

⁴³ Cost of which is NOT covered by the reference amount.

⁴⁴ Cost of which is included in the reference amount.

8.2.3. Sources of human resources (statutory)

- ☐ Posts currently allocated to management of the programme to be replaced or extended
- ☐ Posts pre-allocated within the APS/PDB exercise for year n
- X Posts to be requested in the next APS/PDB procedure
- X Posts to be redeployed using existing resources in the managing DG (internal redeployment)
- ☐ Posts required for year n although not foreseen in the APS/PDB exercise of the year in question.

The needs for human and administrative resources will be covered in the allocation that can be granted to the managing DG in the annual procedure in the light of budgetary constraints.

8.2.4. Other administrative expenditure included in reference amount (XX 01 04/05 – Expenditure on administrative management)

EUR million (to 3 decimal places)

Budget line (number and heading)		2011	2012	2013	Year n+3	Year n+4 and later	TOTAL
1. Technical and administrative assistance (including related staff costs)							
Executive agencies ⁴⁵							
Other technical and administrative assistance							
- intra muros							
- extra muros ⁴⁶		1	2	2			
Total technical and administrative assistance		1	2	2			

8.2.5. Financial cost of human resources and associated costs not included in the reference amount

EUR million (to 3 decimal places)

Type of human resources	2011	2012	2013	Year n+3	Year n+4	Year n+5
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⁴⁵ Reference should be made to the specific legislative financial statement for the executive agency (or agencies) concerned.

⁴⁶ Technical and administrative assistance related to grant coordination at level of Member States for activity 1 and land monitoring.

						and later
Officials and temporary staff (XX 01 01)	2.1	2.4	2.6			
Staff financed by Article XX 01 02 (auxiliary, SNE, contract staff, etc.) (specify budget line)	0.06	0.14	0.2			
Total cost of human resources and associated costs (NOT in reference amount)	2.1	2.5	2.8			

Calculation – **Officials and temporary staff**

Reference should be made to point 8.2.1, if applicable.

€122 000 per official per year

€73 000 per SNE per year

€64 000 per contract agent per year

Calculation – **Staff financed under Article XX 01 02**

2011 – 1 contract agent

2012 – 1 contract agent + 1 SNE

2013 – 2 contract agents + 1 SNE

8.2.6. Other administrative expenditure not included in reference amount

EUR million (to 3 decimal places)

	2011	2012	2013	Year n+3	Year n+4	Year n+5 and later	TOTAL
XX 01 02 11 01 – Missions	0.023	0.025	0.030				0.078
XX 01 02 11 02 – Meetings and conferences	0.208	0.208	0.208				0.624
XX 01 02 11 03 – Committees ⁴⁷	0.139	0.139	0.139				0.417
XX 01 02 11 04 – Studies and consultations							
XX 01 02 11 05 – Information systems							
2. Total other management expenditure (XX 01 02 11)	0.350	0.352	0.357				1.059
3. Other expenditure of an administrative nature (specify including reference to budget line)							
Total administrative expenditure, other than human resources and associated costs (NOT included in reference amount)	0.350	0.352	0.357				1.059

Calculation – **Other administrative expenditure not included in reference amount**

⁴⁷ Specify the type of committee and the group to which it belongs.

Maximum of 20 two-day missions per year at an average daily cost of €750 each= €30 000
6 two-day meetings involving an average of 30 participants at €1 044 (€860 travel + €92 per diem * 2 days) = €187 920
3 committee meetings: €860 per participant * 54 participants (per year) = €139 320

The human and administrative resources needed will be covered within the allocation that can be granted to the managing DG in the annual procedure in the light of budgetary constraints.

8.2.7. Implementation – human resources

To calculate the human resources necessary for this action the following analyses were undertaken:

- Identification of the implementation mechanisms for delivery of the various outputs;
- Identification of the main broad categories of tasks required by the implementation mechanisms;
- Identification of the number of times that the task is repeated over the duration of the action;
- Estimation of the staff requirements in full-time equivalents (FTE) per task per year.

Summary description of implementation mechanisms

Operational objectives	Output	Implementation mechanisms
1. To enable the provision of emergency response services	1.1. European mapping service for emergency response	Procurement to establish rapid service mapping on demand; other mapping on demand covering different phases of the response cycle; reference mapping; map validation and control; data archiving, referencing and dissemination functions. Management of the procurement cycle. Follow-up of service. Coordination of other relevant service providers.
	1.2. Product integration for emergency response	Call for proposals for grants targeted at relevant entities in this field focusing on specific information for end-users at regional level on the basis of data provided at EU level. Management of call for proposal cycle. Follow-up of implementation of grants. Coordination needed between the different civil protection organisations.
2. To allow provision of land monitoring services	2.1. Periodic land cover mapping service	Activities at European level: Procurement to establish the following services at European level: image pre-processing; access to reference data; multiple land cover and land cover change products; map validation and control; data archiving, referencing and dissemination functions. Management of the procurement cycle. Follow-up of the service. Coordination of other relevant service providers.

		Activities at regional level: Call for proposals for grants targeted at relevant entities in this field with a view to deriving European products from aggregation of inventories existing in Member States using a common object-oriented model. Follow-up of implementation of grants. Coordination needed between the relevant organisations.
	2.2. Dynamic land monitoring activities	Procurement to establish a service for production, on a daily basis, of a set of bio-geophysical parameters in real time and at global level. Management of the procurement cycle. Follow-up of the service. Coordination of other relevant service providers.
3. To support take-up of services by users	3. Measures to support take-up of operational services by users	Procurement for provision of a service aimed at stimulating use of data and information by end-users and to “plug” the GMES services to the user-specific environment and information flow. Management of the procurement cycle. Follow-up of the service. Coordination of other relevant service providers.
4. and 5 To provide financial support for GMES space component and data access	4. Routine operations of sentinels 1A, 2A and 3A[1], data access-related ground segment operations and data access agreements with data owners	Funding for ESA-operated activities possibly under joint management. Management of joint management agreement. Procurement of in situ data and management of the procurement cycle. Follow-up of relevant activities.

Human resources required per output and task

Output	Broad task category	No of tasks	2011 (FTE)	2012 (FTE)	2013 (FTE)
1.1. European mapping service for emergency response	(a) Procurement design, publication, evaluation and contracting	1	1		
	(b) Follow-up of the contracted mapping service	2		0.5	0.5
	(c) Coordination of European mapping	3	0.25	0.5	1
	(d) Financial processing and administrative follow-up of the activity	3	0.5	0.5	0.5
	<i>Total 1.1:</i>		1.75	1.5	2
1.2. Product integration for emergency response	(a) Grants – Call for proposals design, publication, evaluation and contracting	3	0.75	0.5	0.5
	(b) Follow-up of grants for specific mapping activities	15	0.25	1	1

	(c) Coordination at European level of relevant operators	3	0.5	0.5	0.5
	(d) Financial processing and administrative follow-up of the activity	15	1	1.5	1.5
	<i>Total 1.2:</i>		2.5	3.5	3.5
	Total objective 1:		4.25	5	5.5
2.1. Periodic land cover mapping service	(a) Procurement design, publication, evaluation and contracting	3	1		
	(b) Follow-up of contracted services	9	0.5	1	2
	(c) Grants – Call for proposals design, publication, evaluation and contracting	3	0.25	0.5	0.5
	(d) Follow-up of grants	9	0	0.5	0.5
	(e) Coordination at European level of relevant operators	3	0.5	0.5	0.5
	(f) Financial processing and administrative follow-up of procurement and grants for the activity	18	1.5	2.5	3
	<i>Total 2.1:</i>		3.75	5	6.5
2.2 Dynamic land monitoring activities	(a) Procurement design, publication, evaluation and contracting	1	0.75		
	(b) Follow-up of contracted services	2	0.25	0.5	0.5
	(c) Dissemination and accompanying measures	3		0.75	0.75
	(d) Financial processing and administrative follow-up of the activity	3	0.75	0.75	0.75
	<i>Total 2.2:</i>		1.75	2	2
	Total objective 2:		5.5	7	8.5
3. Take-up of operational services	(a) Procurement design, publication, evaluation and contracting	1	1		
	(b) Follow-up of contracted services	2		0.5	0.5
	(c) Coordination activities	2		0.5	0.5
	(d) Financial processing and administrative follow-up of the activity	2	0.25	0.5	0.5
	Total objective 3		1.25	1.5	1.5

4. and 5 GMES space operations and data access	(a) Preparation of joint management agreement with ESA	1	1		
	(b) Operational supervision of agreement	3		1	1
	(c) Coordination at national/Member State level	3		0.5	0.5
	(d) Administrative and financial monitoring of the agreement	3		0.5	0.5
	Total objective 4 and 5		1	2	2
Management, expert advice and overheads	(a) Management – Head of Unit	3	1	1	1
	(b) Financial coordination	3	0.5	0.5	0.5
	(c) Legal advisor	3	0.5	1	1
	(d) Space specialist	3	1	1	1
	(e) Users interface – contact person	3	1	1	1
	(f) Secretariat	3	2	2	2
	Total overheads		6	6.5	6.5
Total human resources required			18	22	24