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Annex to the :

Communication from the Commission

**‘Global Monitoring for Environment and Security (GMES):
From Concept to Reality’**

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ANNEX A: OUTLINE OF THREE PILOT SERVICES, CANDIDATES FOR FAST TRACK INTRODUCTION

Three candidates have been identified for 'Fast Track' treatment. The detailed description below is consistent with the description already discussed with the Member States. In each case, the services will be defined in the light of the planned workshops during the autumn.

- EMERGENCY RESPONSE

The objective is to reinforce the European capacity to respond to crises and emergencies associated with natural and man-made disasters. The proposal is a contribution to the "EU Action plan for providing rapid response capabilities to deal with disasters" (Council 31.01.2005), established after the tragic tsunami events of December 2004.

In the long run, the proposed service will guarantee that Europe can provide adequate information system capabilities to support early warning, urgent assistance, relief operations, humanitarian aid, reconstruction wherever and whenever they may be required around the world. However, at this stage the focus will remain on the provision of services aimed at strengthening preparedness and response capabilities of a range of institutions at national, EU and international levels. This requires a rapid mapping capability after disastrous events occur and preparatory services to collect and map spatial and socio-economic data in areas at risk. Integration with Galileo positioning services will provide the basis for digital maps.

In the short- to medium-term, the service will focus on hazards and disasters, such as:

- meteorological-driven hazards, e.g. storms, fires, floods;
- geophysical hazards, e.g. earthquakes, tsunamis, volcanic eruptions, landslides and subsidence;
- deliberate and accidental man-made disasters, e.g. urban fires, chemical incidents on industrial sites;
- humanitarian disasters.

- LAND MONITORING

Land is a key natural asset which value results from its surface as well as from the presence of the other natural elements (soil, water, climate, fauna and flora) and their combination with man made assets (activities, infrastructures and settlements). Sustainable development policies related to land and its resources require long-term monitoring and an integrated information system based on horizontal integration of environmental, economic and social dimensions, and vertical integration related to the need for actors at the various levels from global to local level to integrate sustainability considerations in their own decision processes.

The objective of the proposed GMES pilot service is to deliver timely, relevant core information on land use and land cover changes for a number of targeted policy areas at

global, European, national and local scale. In the short-term the proposed service will contribute to:

- land cover and land use mapping at European scale for implementation, review and monitoring of EU policies;
- more detailed land cover and land use mapping of urban and Natura2000 zones, in support of the EU Member States' obligations in the context of Climate Change policies, for Europe's spatial development perspective and the urban and biodiversity environment thematic strategy; and
- delivery of a pan-European digital elevation model required for the spatial integration of different data layers and the implementation of natural risks and EU environmental policies such as the Water Framework Directive and the Air thematic strategy.

A number of downstream services will use these core services as input to deliver specific information products. Services will also be progressively extended to mapping at global scale for climate change modelling and the global dimension of EU environment and development policies.

- MARINE SERVICES

The proposed marine monitoring services address the requirements from national and European policies, international conventions, as well as European and international agencies (e.g. EEA, ICES, WCRP, UNFCCC) for information products and indicators on the marine environment. This is particularly significant in the context of the implementation of the 6th Environmental Action Programme Marine Thematic Strategy and the future development of a coordinated European Maritime Policy, both requiring operational ocean monitoring and information systems. Operational agencies responsible for marine meteorology, weather forecasting, maritime safety, and environmental monitoring are intermediate users whose mission stands to be enhanced by operational marine services. This is particularly the case for coastal systems, which are strongly dependent on larger scale information and data streams. In the short to medium-term, the objective is to provide general information, structured at the European level, on the state of the oceans, including:

- global and regional data sets; monitoring and indicators (e.g. global and regional mapping of ocean climate and variability, regular bulletins and indicators on the health of the ocean, input into the reporting requirements of international conventions and agencies, regular provision of boundary conditions to higher resolution regional and coastal models);
- operational ocean analyses and forecasts (e.g. ocean current, temperature, salinity fields, over global and regional seas);
- operation, validation and maintenance of in situ observing networks.

These marine core services should underpin other relevant downstream services, tailored for specific applications or problems.

ANNEX B: PROCESS FOR THE IMPLEMENTATION OF THE GMES “FAST TRACK” SERVICES

The roadmap for the implementation of the three GMES “fast track” services includes the following milestones:

2005:	For each “fast track” service, user workshop focused on service requirements and on implementation roadmap
2006: (First quarter)	Finalisation of the Terms of Reference of the “fast track” services, based on the outcomes of the workshops
2007:	First FP7 calls for proposal, starting with the development of the three “fast track” services based on their respective Terms of Reference
2008:	Pre-operational validation of the three “fast track” services

After the 2005 user workshops, a small Implementation Group will be established for each “fast track” service. These Groups, in open cooperation with the relevant user community(ies), will be in charge of supervising and validating the implementation of the “fast track” services, and of reporting about their progress to the GMES management structure.

These Groups will especially be responsible to organise regular progress reviews during the development period, and to propose the service validation.

Topical workshops and conferences will be organised, where appropriate, during this implementation period, in order to improve the user awareness about the “fast track” services and to consolidate and enlarge their user base, with a specific emphasis on regional issues.

ANNEX C: LIST OF PROPOSED INITIAL SERVICES

The Commission and the European Space Agency have demonstrated the potential capability of some eleven different *GMES initial services* at the Earth & Space Week exhibition, in Brussels in February 2005.

- marine and coastal environment (including pollution, oil spills, etc)
- land use / land cover state and changes (including soil sealing)
- humanitarian and development aid
- risk management for floods and forest fires
- risk management for subsidence and landslides
- air pollution (local to regional scales)
- water quality
- forest monitoring
- food security and early warning systems
- global change issues
- maritime security (including maritime transport and coastal area surveillance, with sea ice monitoring).

These constitute a potential series of developments, starting with the three fast track services. It is not excluded that, in the longer-term, further potential services may be identified, for example on the basis of research projects currently starting or under negotiation.