Provisions for GMES in the Multiannual Financial Framework 2014-2020.

A NEREUS Position Paper, the Network of European Regions Using Space Technologies.

October 2011

*As **voice of the European Regions**, NEREUS serves as an advocate for the regions in matters of space uses and also as a direct channel to the regional users of space technologies (such as local authorities, SMEs, universities and research institutes and citizens). The network is the key interface between the regional level and national and European institutions. NEREUS currently unites 26 European regions and 33 Associate Members with the common objective **to spread the use and understanding of space technologies** across Europe for **the benefit of regions and their citizens**.*

GMES provides essential data and services needed by regional and local authorities to implement the wide range of directives imposed by European Union legislation passed down via national governments. Without GMES, local and regional authorities will be far less able to deliver the required services laid down in numerous EU Directives presaging a wider failure of Commission societal and economic policies.

Through economies of scale, services derived from GMES are significant engines for growth for the regions through provision of high added-value, technology-based services with a high proportion of delivery coming from the local SME sector. Regional research driven clusters of regional authority-academic-business (especially SME) partnerships, with expertise in GMES applications, are emerging in regions with intent to exploit and utilise space technologies, especially GMES and Galileo/EGNOS. Failure to deliver GMES presages significant loss of potential for economic growth.

A key premise of GMES has been that it will provide uniform levels of services and opportunities for exploitation for all the Member States and regions of the European Union. But without sustained funding for GMES, European users of operational services will be left with a fragmented, mainly commercially-delivered, service from providers already in the field, including substantial non-European sources. The likelihood-that such a service will be ill-suited and unaffordable to most national and regional authorities-needs to be given serious consideration.

If, as is being proposed by the European Commission, GMES is funded and used only by a certain number of countries, it will increase inequalities between EU countries by denying non-participants the capacity provided by GMES for informed territorial and crisis management and excluding them from the opportunities for economic growth that will arise through development of innovative GMES services.

NEREUS considers that, from the regional perspective, GMES provides a compelling opportunity for economic growth and is a vital tool for territorial management. NEREUS strongly urges the European Commission to ensure sustainable funding within the framework of the Multi Financial Framework of 2014-2020 in order to secure the timely delivery of Europe's GMES flagship programme.

In the following paragraphs, NEREUS looks at some examples of regionally-specific applications of GMES and examines the impact of cancellation or extended delay of GMES that will result from excluding funding for GMES from the MFF budget.

NEREUS, through its Earth Observation-GMES Working Group, has already identified many emerging applications of GMES for regional and urban economies and citizens.[1]GMES is already being used for mapping coastlines, regional areas and urban conurbations and for managing water resources and agricultural land use. GMES plays a key role in ensuring safety and exploitation of the oceans and

[1] 25 Uses of GMES in the NEREUS Regions. June 2010.

coastal waters and for monitoring air quality for the benefits of citizens' health. Energy conservation in urban zones, global food security, understanding the impact of climate change at regional levels and civil protection against the hazards of forest fires, floods, landslips or ocean storms, all draw on GMES space technology.

Through the inter-regional collection of GMES uses, numerous examples of shared common interests between different regions in GMES applications are emerging. For example, risks of forest fire are high priority for southern European regions among others, marine environment monitoring and exploitation of marine resources concern all regions in coastal zones, maritime security concerns regions where shipping has high economic priority, air pollution from traffic emissions is an emerging issue in urban conurbations, adaptation and mitigation to climate change at regional level takes many forms and crosses many regional boundaries. This evidence points to the capacity of the GMES project to enhance social cohesion between regions across the Union.

1. **Air Quality Services.**

GMES provides daily (3-day) air quality forecasts and historical records for ozone, nitrogen dioxide, sulphur dioxide and aerosols for the major cities and regions of Europe. The forecasts form the basis for managing health risks to vulnerable citizens from air pollution. The historical data records support regulation of the EU's Air Quality Directives that are imposed on regional authorities by national governments. A fully operational Air Quality Service cannot be sustained without GMES.

2. **Community Water Policy.**

The Water Framework Directive (2000) and the Ground Water Directive (2006) define the Community water policy. GMES is a major data source for seasonal mapping of snow and glacier coverage in mountain regions, contributing to regional hydrological GIS services for managing water resources. Loss of a GMES operational service undermines the Ground Water Directive.

3. **INSPIRE**

The Infrastructure for Spatial Information in the European Community, is a major deliverable of the Lisbon agenda and a key source of integrated geospatial information for regional planning and territorial management. GMES is the principle data source of the required high resolution spatial data, without which INSPIRE will be seriously impaired.

4. **Emergency Services and Civil Protection:**

The pre-operational GMES Emergency Response Service has been in use around the world for the past three years. In the past 12 months alone, there have been 91 emergency rapid responses supported by this service, of which 60% have been in the European regions. Crises associated with flooding are frequently supported by this service. The floods in Poland and Hungary in the spring of 2011 perfectly illustrated the need for support during the crisis and for evolution monitoring as the flooding subsided, neither of which could have been supported without GMES. Loss of this GMES service will increase the risks to lives and livelihoods of European citizens.

5. **Agricultural Services:**

Without provision of the GMES Sentinel satellites, Europe's service provider industry will lose its leadership role to international competition, in providing commercial services for precision farming and monitoring illegal de-forestation, with regional SMEs among the largest losers.

6. **Marine Environment Services:**

GMES provides information on the state of ocean and marine ecosystems in the form of forecasts and analyses for the global ocean and the European regional waters. The application areas of these services include maritime safety, the marine environment and coastal regions, marine resources, seasonal meteorological forecasting and climate monitoring.

7. **Controlling illegal activities:**

Future GMES Security services are currently being validated through exercises aimed at fighting illegal immigration and trafficking. From 2014 onwards, GMES will be an important tool for controlling the number of illegal immigrants entering the EU via its coastal regions from North Africa as well as reducing the death toll of illegal immigrants at sea.

8. **Energy Management**:

GMES technology provides data on wind strengths and direction needed for identifying preferred sites for renewable energy wind farms and, using near-real-time wind forecasting, optimising wind turbine outputs. Night mapping of light emissions from cities, monitoring of energy reflection from surfaces (pavements, facades, roofs) and thermal emissions from buildings, support urban
energy conservation measures.

9. Maintaining the Urban Atlas.

Already one of the successes of EU coordinated action, the Urban Atlas continues to require high resolution remote sensing data to supplement other more conventional mapping data sources. The identification of urban hot-spots as a causal link with high death rates among the elderly during heat waves further supports the need for an urban mapping service, including temperature monitoring, to be supported from GMES.