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# EC contribution to R&D in GMES

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# GMES in a nutshell

- **Earth observation is a powerful, advanced technology**  
→ space and ground-based (“in situ”) capacities monitor the Earth
- **GMES is an EU-led initiative**  
for an autonomous and operational European Earth observation capacity
- **EU Need for information in support of:**
  - **European policies:** environment & climate change, CAP, Maritime Policy, CFSP/ESDP...
  - **EU international commitments:** protocols and conventions (eg Kyoto, Montreal, CLRTAP..)
  - **National or regional «adaptations»** of these policies or commitments
- **GMES aims to provide relevant information**  
**not only** to policy-makers at all levels and but also many other users (national authorities/agencies, private industry, researchers, European citizen..)



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# GMES Architecture

**OBSERVATION  
INFRASTRUCTURE**

Space Infrastructure

In Situ Infrastructure

**GMES  
SERVICES**

**GMES Services**

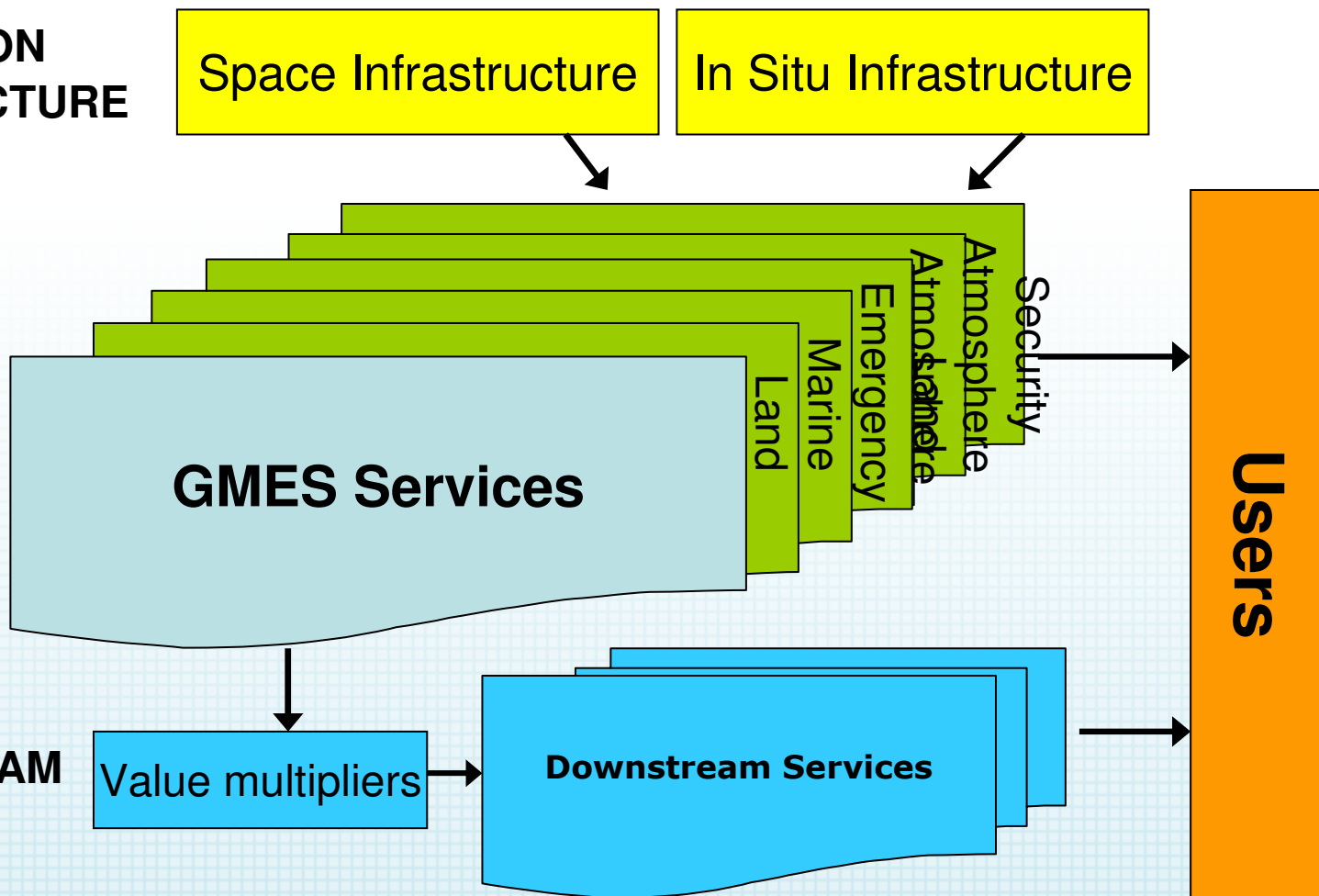
Security  
Atmosphere  
Atmosphere  
Emergency  
Marine  
Land

**DOWNSTREAM  
SECTOR**

Value multipliers

**Downstream Services**

**Users**





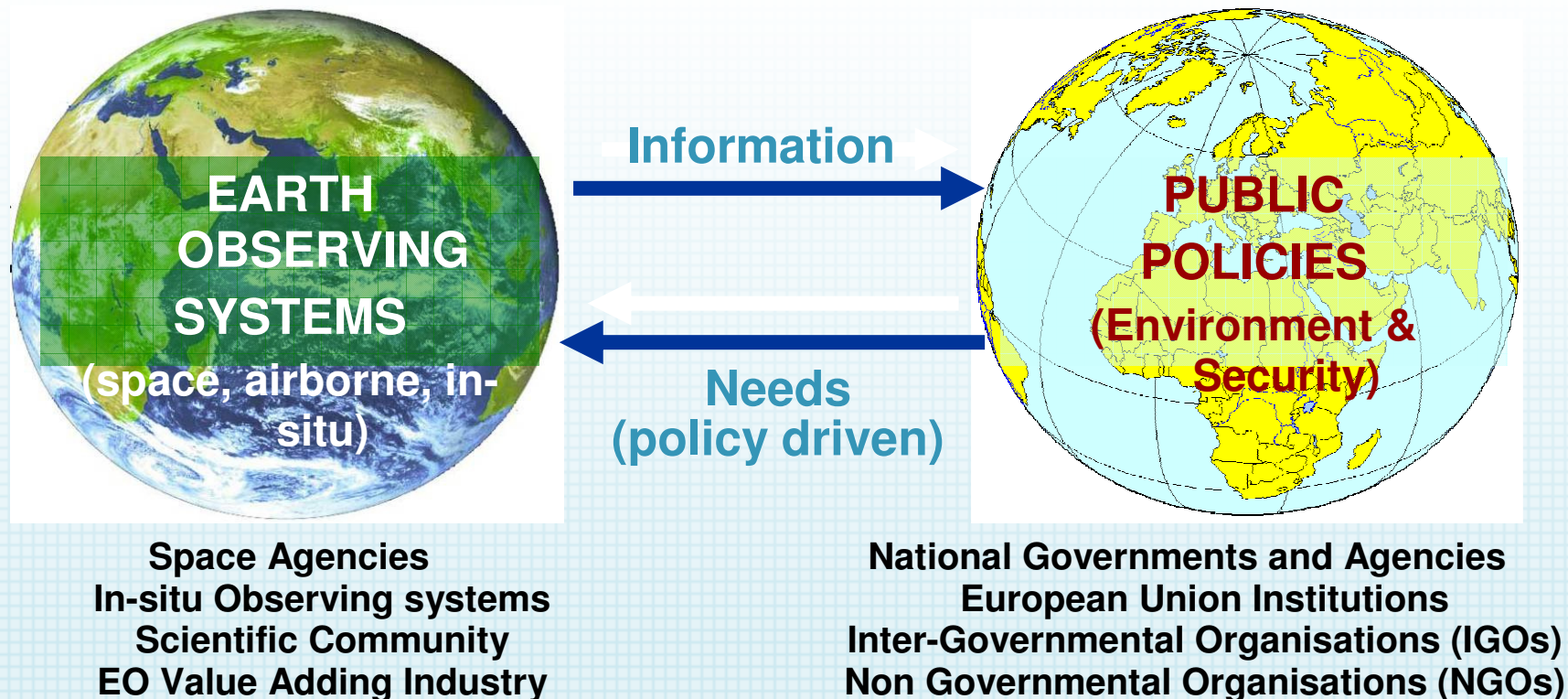
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# What is the objective?

.....to provide information services to policy-makers and other users





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# GMES projects under FP7-SPACE

- 5 core services
  - Atmosphere: **MACC**
  - Emergency response: **SAFER**
  - Land: **geoland2**
  - Marine: **MyOcean**
  - Security: **G-MOSAIC**
- In addition to main GMES services, additional projects are co-financed by the EC under the FP7 to
  - shaping GMES services
  - bringing quality services to citizens
  - monitoring natural hazards
  - taking on the climate change challenge
  - supporting the cooperation with Africa in the domain of environmental monitoring.

**Overall budget: ~560 M€ in the period 2007-2013**



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# GMES → GEO

- **GMES will represent in GEO a coherent position of all GMES stakeholders regarding the contribution of Europe to GEOSS.**
- **The involvement of GMES in GEO will help to leverage other contributions to GEO at European and National level.**
- **GMES will contribute to GEOSS based on a *system-of-systems* philosophy.**
- **GMES will contribute to the long-term availability of a set of interoperable European capabilities (infrastructures, services, data) with both European and global reach ;**
- **GMES will foster the development of value-added services including a combination of global data and service elements**





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**GMES**



**GEO**

**Relevance of GMES services to GEO Societal Benefit Areas**  
*(number of stars correspond to level of relevance)*

	Disaste rs	Healt h	Ener gy	Clima te	Wat er	Weath er	Ecosyste ms	Agricu lt.	Biodi v.
<b>Land</b>	*	*	*	*	*		**	***	**
<b>Emergen cy</b>	***	*							
<b>Marine</b>	*	*	*	**	**	*	**		**
<b>Atmosph ere</b>	*	**	*	***		**			



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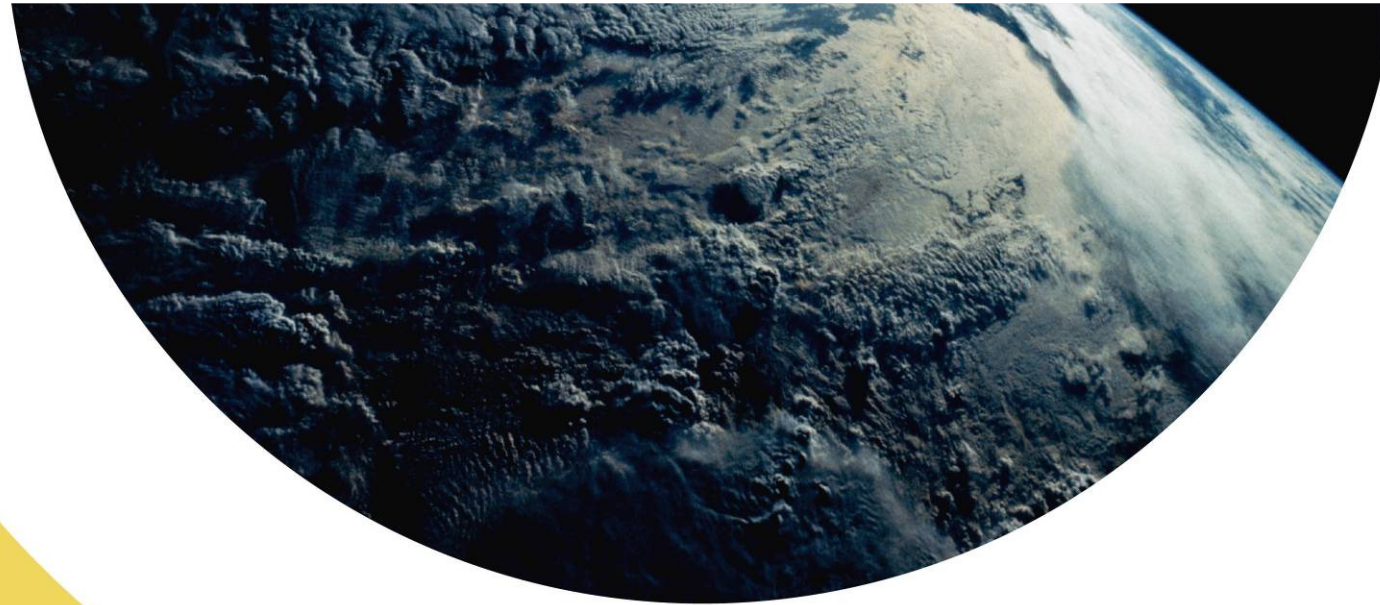


**GEO → GMES**

## **GEO is an integral part of the International Cooperation strategy of GMES:**

- **Improve the access to global capacities and datasets**
- **Synchronize GMES services responding to global needs with other initiatives**
- **Improve GMES support to developing countries**
- **Foster new international cooperation opportunities**
- **With its federating role, GMES will be instrumental for GEO but at the same time will benefit from it through access to worldwide data feeding its services, hence consolidating its decision-making capacity.**





# Implementation of the GMES Regulation



European Commission



# **Proposed activities for the implementation of the GMES Regulation 2011-2013**

# Overall approach of technical implementation

## 3 steps :

### 1. Preparatory phase

- Consultation of stakeholders
- Consolidation of the scope of activities
- Preparation of Annual Work Programs
- Definition of implementation scheme for each component and specific organisational arrangements with institutional actors
- Preparation of technical specifications for the procurement

### 2. Procurement phase

### 3. Monitoring and evaluation phase

# GIO Preparatory phase

- Need to anticipate preparation as much as possible -> timing issue for 2011 budget appropriation
- Preparation of annual work programme in progress
- First step: internal Working Groups launched to assist GMES Bureau in GIO implementation:
  - **Land service WG:** DG ENTR + DG ENV + EEA + DG CLIMA + DG JRC + DG ESTAT + DG REGIO + DG ENER + DG AGRI + DG RTD+ DG AIDCO + DG DEV
  - **Emergency Response service WG:** DG ENTR + DG ECHO + DG RELEX + DG DEV + DG JRC + DG RTD
- Letters sent to DG ENV, JRC. Discussion required with DG BUDG on budget implementation
- Technical work in progress with JRC and EEA

# Proposed implementation scheme

- **Institutional coordination**
  - **Land service :**
    - Continental+Local component: coordination EEA
    - Global component: could be JRC
    - Acces to Ref. data: could be ESTAT
  - **Emergency Response service WG:** political coordination to MIC, technical coordination to JRC  
Service procurement
  - **Space component:** ESA
  - **User uptake:** could be DG ENTR

# Work Programme 2011

## ACTIONS

GIO1-2011: GMES emergency management services  
– Mapping

GIO2-2011: GMES emergency management services  
– Early Warning Systems

GIO3-2011: Pan-EU Land Cover monitoring service

GIO4-2011: Space Component

Support to GMES-related Policy measures



## GIO1-2011: GMES emergency management services – Mapping

- Mapping in support to crisis management inside and outside EU
  - ‘Response’ phase: on-demand production and delivery in rush mode of EO data, damage assessment and reference maps over crisis area. Service available 24/7/365
  - On-demand production in non-rush mode of preparedness/prevention and recovery maps in support to other phases of the disaster cycle
  - Validation and Quality Control
- Implementation: Procurement procedure

## GIO2-2011: Early Warning Systems

- Focus on the sustainability of the Early Warning Systems (EWS) – European Flood Alert System (EFAS) at EU level
- Support to forecast activities
  - Provision of numerical weather forecasts
  - Run EFAS in operational mode
  - Prepare results for dissemination

## **GIO3-2011: Pan-EU Land Cover monitoring service**

- Post-processing of space data
- Production of 5 HR layers – artificial surfaces, forest and agricultural areas, wetlands and water bodies
- Validation and quality control
- Cataloguing, Archiving and dissemination
- Implementation: European Environment Agency (EEA) coordination – Delegation Agreement

## **GIO4-2011: Space Component**

- GIO funding will be included in the revised version of the existing **EC-ESA Delegation Agreement**
- The emphasis will be dedicated to the preparation of initial operations of Sentinel-1, -2, and 3 and their data generation, management, distribution
- Implementation: **EC-ESA Delegation Agreement** (amendment including GIO funding)