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# **“Fast track” services**

## **Approach & workshop reports**



# GMES Pilot Services

## The "fast track" approach

- *Objective: concentrate on a first set of services to be operational by 2008*
    - *User driven: political priority & compliance with user requirements*
    - *Technically mature*
    - *Based on existing capacities and structures*
  - *Preliminary selection submitted to GAC in June 2005*
    - *Support to crisis/emergency situations*
    - *Land monitoring*
    - *Ocean forecasting*
- Sampling different system characteristics and architectures*



# “Fast track” workshops

## General information

- Three workshops held in Brussels on
  - October 20-21, 2005, for Land Monitoring
  - October 27-28, 2005, for Marine Core Service
  - November 7-8, 2005, for INSCRIT (Crisis/Emergency situations)
- Attended by invited participants (74 for Land, 77 For Marine, 92 for INSCRIT) from:
  - **A majority of EU 25+ countries**
  - **EC Directorates General (Agriculture, Environment, Joint Research Centre, Research, Transport & Energy, Enterprise & Industry) and Maritime Policy Task Force + Council**
  - **European Agencies and Organisations: ECMWF, EEA, EMSA, ESA, EUMETSAT, EUMETNET, EuroGeographics, EuroGOOS, EUSC...**
  - **ESA/GSE & EC/IPs**
- Plenary & splinter group sessions on:
  - **Objectives & requirements of “Fast Track” Service**
  - **Implementation issues**
  - **Conditions for sustainability**



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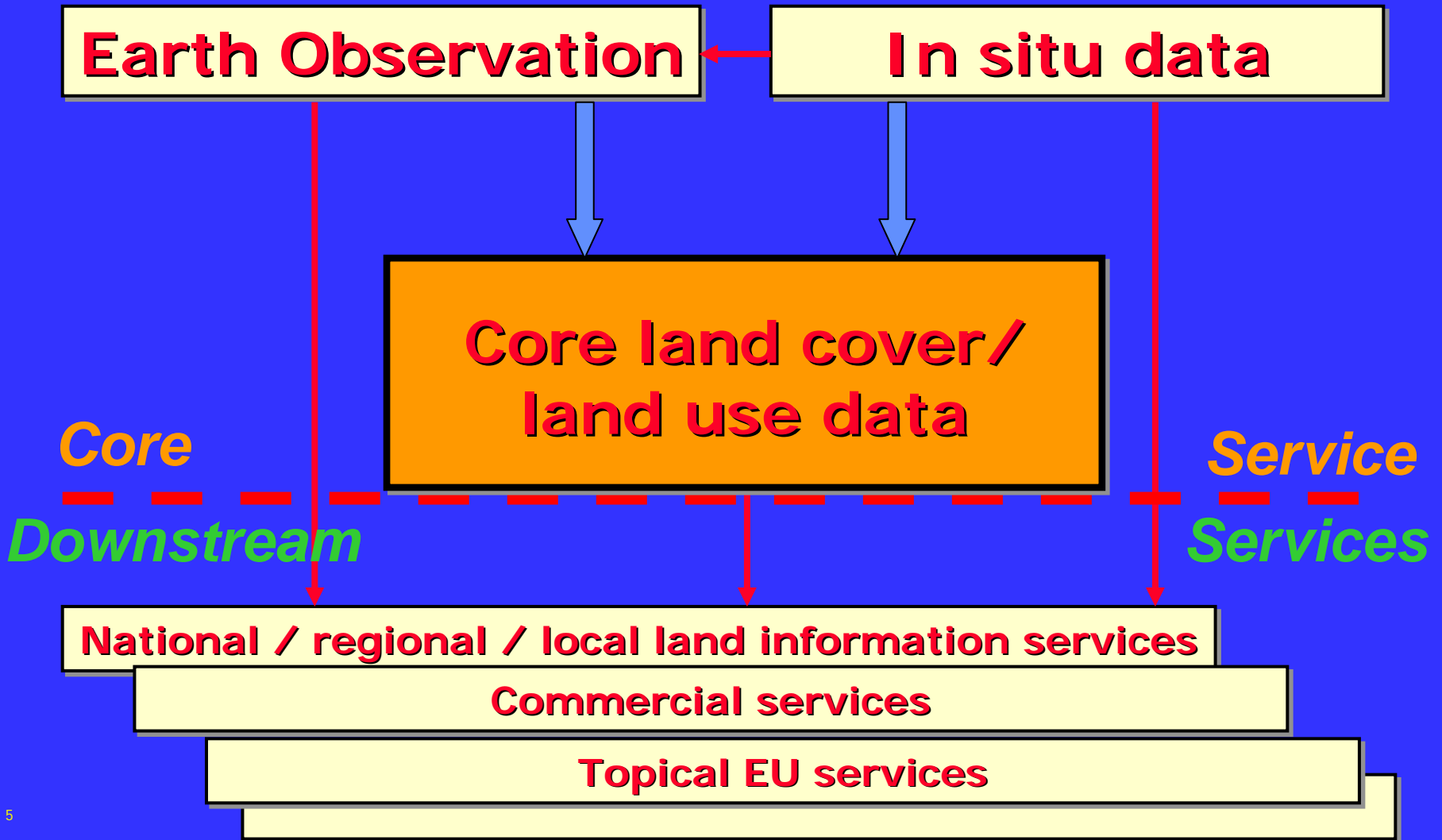


# Main conclusions

## GMES Pilot Service Land Monitoring



# Proposed GMES service on Land Monitoring





# Main requirements of the Core Service

- **Ortho-rectified satellite images and mosaics** for **continental** (high resolution) and **local** (very high resolution) **scales**
- **In-situ data** necessary for satellite data processing, **calibration and validation** of information
- **Main products:**
  - **3-5 yearly updates of core land cover / land use data** with minimum **mapping units of 1-5 ha**
  - Land cover / land use data of **500 functional urban areas** ( $\geq 100,000$  inh.), minimum **mapping units 0.1 ha**
  - **Annual low resolution updates and elevation dimension** t.b.d. until 2008
- **Data dissemination service**



# Next steps 2006-2008 ("Fast Track Service")

## Main building blocks of the GMES pilot service Land Monitoring:

- FP6 Integrated Project **GEOLAND** (2004-2006)
- ESA funded GMES project **GSE Land** (2005-2008)

## Coordination required with:

- **Other land-related GMES projects** (e.g. RISE)
- **EEA/Eionet CORINE** Land Cover (2004-2008)
- **LUCAS** survey (2006-2007)
- **National** land cover / land use inventory **programmes** (2005-2008)
- **Urban Audit**
- **COGI** (for consultation on data procurement and internal EC use)



# Long term sustainability and added value of GMES

- From "what is available" to "what is needed"
- Upfront **assessment of what is required**
- Key element = **data availability of both space and situ-component**
- **Coordination** between European and National/Regional/Local land monitoring programmes and **INSPIRE**
  
- Guaranteed **continuity of service**
- **Centralised data procurement and meta-information**
- **Harmonized European products** for further use at all levels (global/national/local)
- **Cost-efficiency** (business model still to be developed)
- Integration of information infrastructures  
→ **Geospatial one-stop-shop**



# Main conclusions

- Well represented user community confirmed their present and future requirements for land information at European, national / regional and local levels
- Users ready to commit under conditions to be further refined
- Technical specifications and cost-efficiency of products and services need further clarifications
- Identified key elements for long term sustainability of GMES service are:
  1. Data availability of both space and in-situ component
  2. Integration with existing or planned land monitoring initiatives



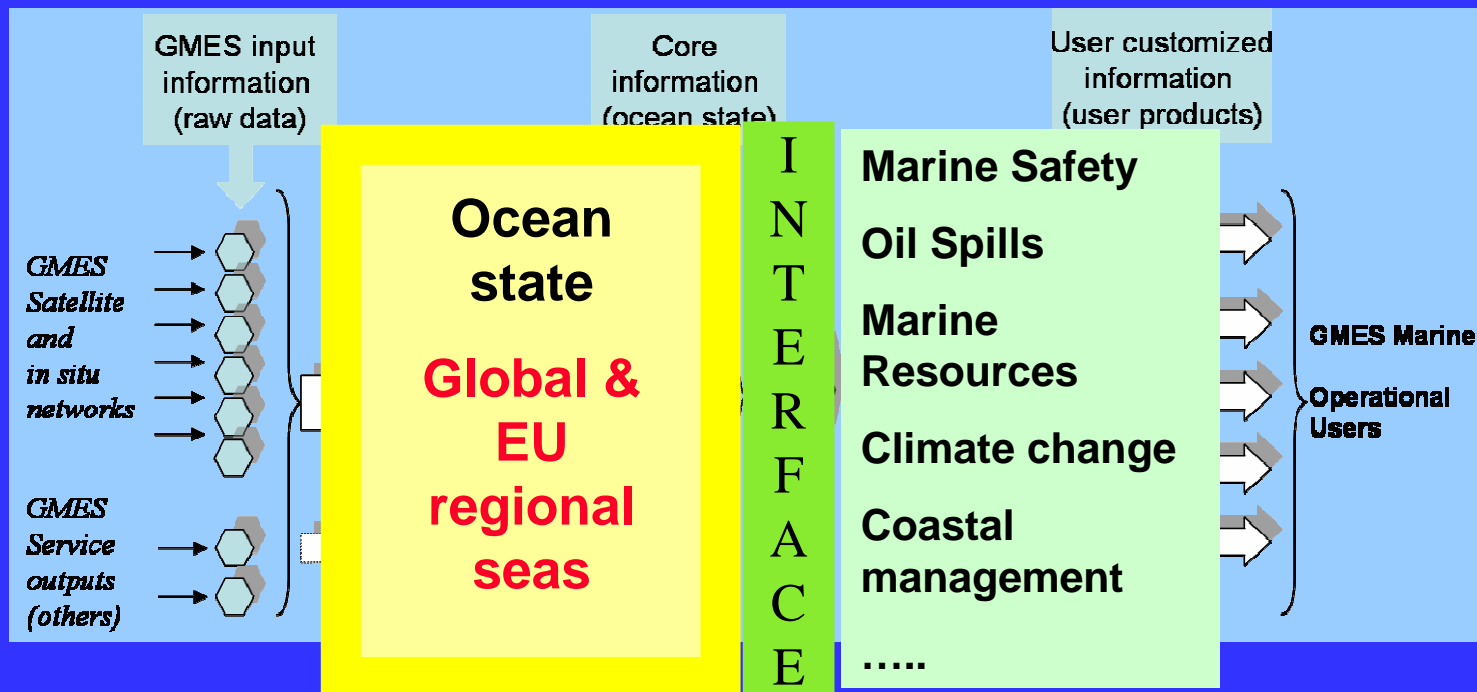
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# Main conclusions

# Marine Core Service



# "Fast track" approach for Marine Core Service (MCS)



To be implemented by 2008

- Mature components of the Core Service (physical ocean & primary ecosystem state variables)

+

- Their interface with downstream services

→ MCS as a backbone to downstream services



- **Product generation & delivery**
  - **Systematic reference information on the state of the ocean/seas**
    - **Observational and model data**
    - **Real time predictions**
    - **Re-analyses**
    - **Ocean scenario simulations (with climate modeling centers)**
  - **For the global ocean & European regional seas, with downscaling capacity based on specific needs**
- **Other activities**
  - **development and operations of observing systems, modeling & forecasting facilities, data management systems**
  - **connection with Downstream Services: marine safety, oil spill monitoring, coastal management....**
  - **Integration of existing national services capacities**



## MCS baseline information delivered to:

- Intermediate users (incl. downstream service providers)
  - Final users

- **Meteorological services:** providers & users of MCS
- **Some Member State environmental agencies/authorities:** willing to test/assess the MCS products with an interfacing downstream service
- **EMSA & EEA:** willing and waiting to test and use the MCS products
- **Private sector:**
  - interested by products
  - need to **better define the boundaries of the MCS**
- More users to be involved in the implementation & operation processes



# MCS Implementation Approach: a System of Systems

- MCS should **integrate**
  - **Global and regional systems**
  - Components with **interfaces** (data acquisition and processing, validation and control, ...)  
Derived from **existing national & regional capacities and networks** (e.g., Seadatanet), as well as **Mersea and GSE projects**
- **Distributed, cooperative & coordinated approach:**  
Operators or consolidated groups (**of the order of 10...**)
  - ⇒ With **capacity to commit resources**
  - ⇒ Linked by a **service level agreement** to political ownership entity
  - ⇒ **Linked with downstream services:** network of providers, contractual approach (to be organised)



- ***In situ* component**
  - Even more important for oceanography than for Weather Prediction
  - Mechanisms / organisation for operational work are needed
- **Space component**
  - Continuity and international coordination of satellite data are essential
  - Endorsement of **ESA GMES Space Component Programme Proposal, consistent with the Marine Service requirements**
    - ❑ AATSR-class SST
    - ❑ 2-4 altimeters required to initialise ocean mesoscale
    - ❑ Ocean colour - monitoring of ecosystem viewed as increasingly important.
    - ❑ SAR for sea-ice characteristics (core service) - Also to be used for ocean pollution monitoring (downstream service)



# Main conclusions

## INSCRIT

### Information Service in Response to Crisis, Disasters & Emergencies



# Disaster Risk Management Cycle





# Requirements

Europe must address the “anywhere, anytime”  
in the long term

## ■ EU 25+ (incl. Mediterranean Basin) level

- ❑ Strong demand from EU National Civil Protections
- ❑ Main service requirements
  - ❑ reference maps  
available within 6 hours over crisis area
  - ❑ damage maps  
available within 24 hours & daily updated before 5 pm
  - ❑ forecasts of evolution of situations to be made available

linking with other hazard management components beyond rapid response (preparedness and alert)

integrating remit of forecast and alert centers (hydromet / meteo/seismic...)



## ■ World level

- ❑ **Enhanced EU capacity to respond to crises worldwide**  
(Humanitarian assistance, Development Assistance, Rapid Reaction mechanisms, Civil protection...)
- ❑ **Service requirements**
- ❑ **reference maps**  
pre-disaster overview (hours), details (one day)
- ❑ **damage assessment maps**  
available **several days after the event**
- ❑ monitoring **evolution of situations** for relief operations
- ❑ **support to reconstruction** maps

**Based on priorities in terms of needs for EU assistance**



## 1. Satellite missions & data

- INSCRIT heavy user of Very High Resolution data
- ESA GMES programme and relevant space missions in MS must answer INSCRIT requirements
- Coordination mechanisms needed for emergency tasking, data acquisition, analysis and distribution

## 2. The Charter

An INSCRIT effort raises two questions:

- Does the Charter needs to be adjusted?
- Should the EU get involved via GMES-INSCRIT in adjusting to expanding needs?



## 3. Reference mapping in the context of INSPIRE

- ❑ For EU25+ reference mapping is called for **covering whole territory** (national level, EU level)
  - Does it require a **process similar to INSPIRE?**
- ❑ For World, selection of **critical areas** (e.g. large flooded basins, tectonically active areas etc...) .
  - Systematic mapping according to preset plan



# Institutional set-up

- For Europe 25+ INSCRIT

  - draws from existing competences & links with National Civil Protection via the EC/MIC (Monitoring & Info Center) channels

- For World EC INSCRIT

  - draws on dedicated nodes (existing or to be established)

  - links Community (Rapid Reaction, ECHO, AID, etc.) & National activities (CP - maybe via MIC -, NGO... )

- An INSCRIT Service Office coordinates at EU level

- **Interface** with needs and capabilities associated with **Second Pillar will grow**

  - **Role of EUMS & EUSC**



# Recommendations

- Set up a (small) follow-up group – **steering group for INSCRIT** (representative of stakeholders) – **EC / ENTR**
- Prepare **action plan** for approval by stakeholders and, in the case of EU25+, competent authorities - **EC**
- **Federation of current activities** funded at EC, ESA and MS levels
- Foresee **specific funding in FP6** to reach maturity of development in 2008 (operations, economic model, institutional set-up, partnership) - **EC**
- A major effort is to be set up to put **continuity into motion beyond 2008** - **all**
- Secure **continuity in space data provision and infrastructure** - **ESA-EC-MS**



# Cross-cutting issues

- Concept of **Core Service of European scope / dimension**
- Link with **GMES governance (dealt with by GAC)**
  - Ownership of GMES
  - Role and responsibilities of EC and Countries
  - Management structure and funding mechanisms
  - Open access to GMES data
- **Implementation**
  - Consistency between ESA-coordinated space component and EU-led service requirements
  - **Operational 'public' system architecture**
- **Funding**
  - Structure to secure continuity after 2008



# General Action plan

short (implementation)  
to long (sustainability) terms

## Short term (implementation target 2008)

- Continue development activities based on on-going projects
- Reinforce the integration of service components
- Clarify the impact of Core Service on existing downstream services  
→ Service Implementation Groups

## Long-term (sustainability)

- Consolidate infrastructures
- Improve cost estimate and identify resources
- Elaborate on the organisation: operators, agreements
- Clarify the political ownership and policies
- Link to European regions

**A fully agreed long-term vision is needed**