Rezultate, proiecte si activitati viitoare pentru sustinerea programului european GMES

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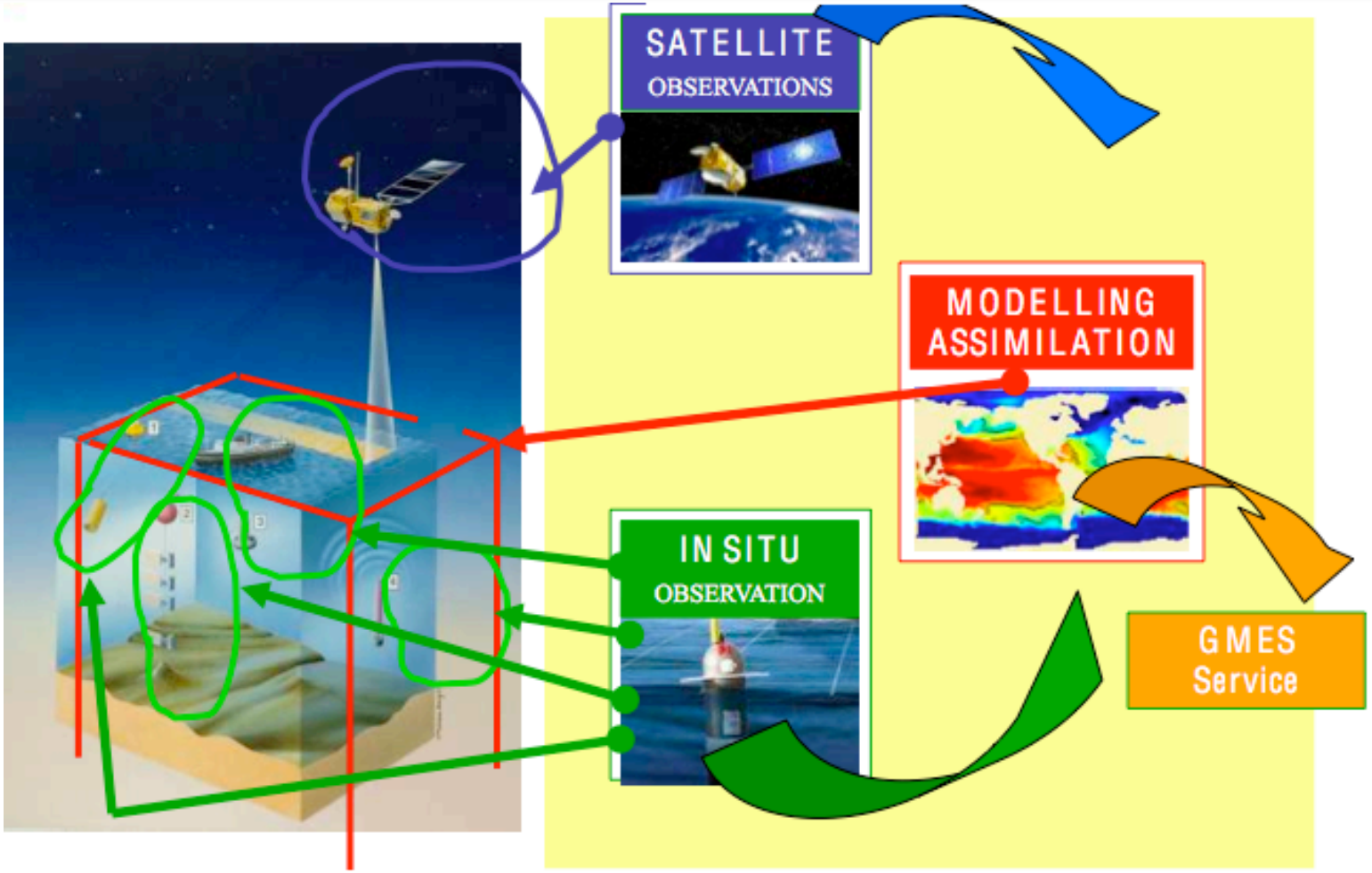
Political agenda

- Endorsement by EU Gothenburg Council June 2001
  - Launch Initial Period of GMES
  - Political engagement of supplying tangible services by 2008
- 2004-Report on the GMES initial period
- 2nd Space Council -June 2005: GMES identified as a “Flagship” of the European Space Policy
- GMES part of the Lisbon Strategy

GMES – the content

- **GMES aims to develop information and support services :**
  - to **European policies**: environment, CAP, security, maritime…
  - to **UE international commitments:**protocols and conventions
  - to **national or regional "adaptations"** of these policies or commitments
- **GMES is based on an integrated system logic:**
  - Overall **"information chain":** from observations to information asked by the users
  - **"System of systems"** with mutualisation of certain elements and challenge of continuity of infrastructures necessary for building services

An integrated system



GMES services

- **Three main services groups**
  - **Forecasting**: expanding the meteorology concept ocean monitoring, air pollution, continental surfaces, climate surveillance
  - **Geographic information**: land management living resources and marine environment, urban zones, coastal zones
  - **Emergencies management**: support to interventions natural, weather-related and technological risks, security
- **Based on**
  - a specific **organization depending on the objective** (monitoring, intervention, ...)
  - **infrastructures & associated means**(observation spatial and in situ, processing, archiving...)

EUROPEAN COMMISSION

GMES Bureau

From Global to local

Real Time

Forecasting

Atmosphere, Ocean

Global to Regional

Crisis management

Risks, security

Regional to Local

Generic

Specific

Climatology

Atmosphere, Ocean & Continental surfaces

Global to Regional

Prevention & post-crisis

Risks, security

Regional to Local

Geographic information

Management of land and resources

Global ⟺ Continental ⟺ Local

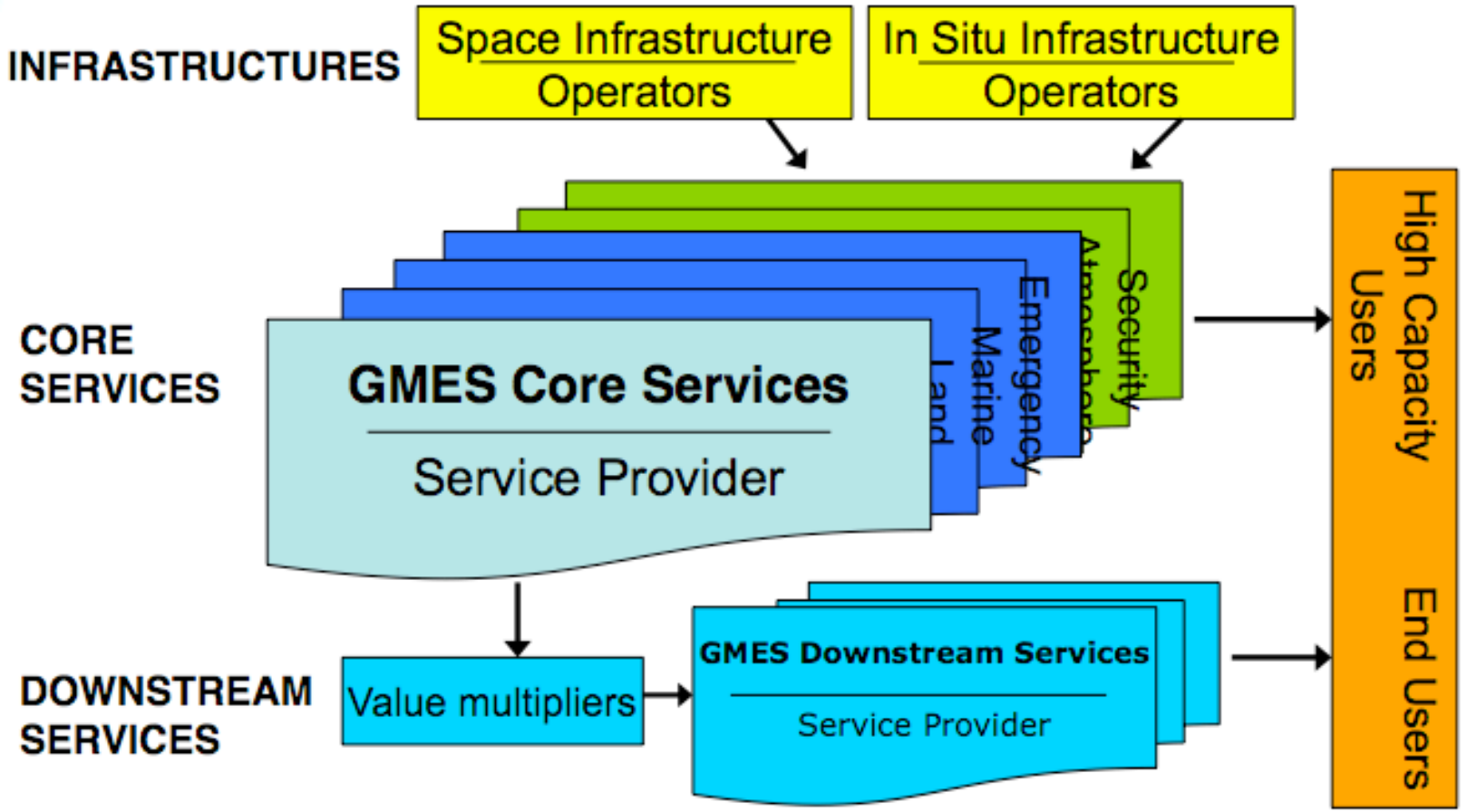
Periodic

A community approach

European added value is clear for:

- Coherent policy monitoring EU and Member States
- Information more quickly available -> improved decision-making cycle
- EU compatibility of products for use at different geographic levels (i.e regional)
- Harmonization of “geospatial” information (Inspire)
- Long-term guarantee of operational services -> from research projects to sustainable services ·
- Enhanced take up of space technologies by innovative SMEs

Architecture



From concept to reality

- **Implement as of 2008 an autonomous GMES European capacity**
  - **Fast track services: Land, Marine and Emergency response**
  - **Other developments: Atmosphere and Security**
  - **R&D funding through FP 7**
- **Associated challenges**
  - **Maximum use of existing EO systems**
  - **Support to development of new capacities if needed**
  - **Harmonize ongoing initiatives**
  - **Sustainable governance and finance**

Romanian Space Agency

- Established in 1991, ROSA become in 1995 an independent public institution under the authority of the Ministry of Education and Research
- Mission*:
  - Coordinate the national space research and applications programs
  - Promote space development
  - Be the Government representative in the international space cooperation
  - Develop specific project oriented research through its own centres
  - Coordinate the Inter-ministerial group on Security Research
    - *Law 40/93, Law 1/07, Govt. Decisions 923/95 and 1574/2004

European Space Agency

- On 17 February 2006 Romania strengthened its relations with ESA by signing the European Cooperating State Agreement, becoming the third European country to join this status. Hungary was the first in April 2003 followed by the Czech Republic in November of the same year.

- The ceremony took place in Bucharest with the participation of Calin Popescu-Tariceanu, Prime Minister of Romania, Jean-Jacques Dordain, ESA Director General, Anton Anton, Romanian Secretary of State for Science and Technology, Marius-Ioan Piso, President and CEO of the Romanian Space Agency, and cosmonaut Dumitru Dorin Prunariu, Chairman of the Board of the Romanian Space Agency.

European Space Agency

- During the coming months Romania will define with ESA the specific areas and projects for cooperation, and the budget for the next five years.
- Major participation will be in ESA's space science programme and the ESA/EC joint GMES (Global Monitoring for Environment and Security) initiative.
- Other areas of cooperation will include ESA's microgravity and exploration programme and technology activities.
- Participation in GMES will strengthen the country's use of Earth observation data for agricultural planning, crop forecasting and flood monitoring.
- Law No. 1/2007
- Public support – around 25 MRON / 5 years

ROSA – vision on GMES

- Integration of space and in-situ observations for enabling user driven / defined services offering reliable and timely information on security and environment in an operational way to support policy making
- Expertise and applied research work is needed to exploit existing results and mature means for enabling better exploitation EO capacity to serve user needs
- Data and services display, access and use rights is an important issue addressed at European level by INSPIRE
- Raise public awareness on GMES importance and possible impact

Main components of GMES

- Infrastructure : data acquisition and pre-processing - space and in-situ
- Core services : main, basic, intensively used products - e.g. land cover -addressing “big” users - EU and Worldwide organizations
- Downstream services : addressing very specific user needs - very specialized service providers

The GMES infrastructure

- Mainly should be composed of Space, Airborne and in-situ systems for data acquisition an pre-processing
- Also includes data processing centers and distribution networks
- Challenges: related to real time transmission of raw data and information products
- Situation in Romania:
  - EO data receiving stations : mostly no existing
  - In-situ systems - very few examples - started to develop data access - practically
  - Data distribution networks are only build inside some organizations;
  - GRID systems - under development

The core services

- Three fast track services to be established by 2008
  - Emergency
  - Marine
  - Land ·
  - Atmosphere and Security also envisioned (already included in the firs FP7 Space call)
- Addressing common needs for data and services
- Situation in Romania:
  - No real core services already established
  - Important steps are made with support from the National R&D Programs

Downstream services

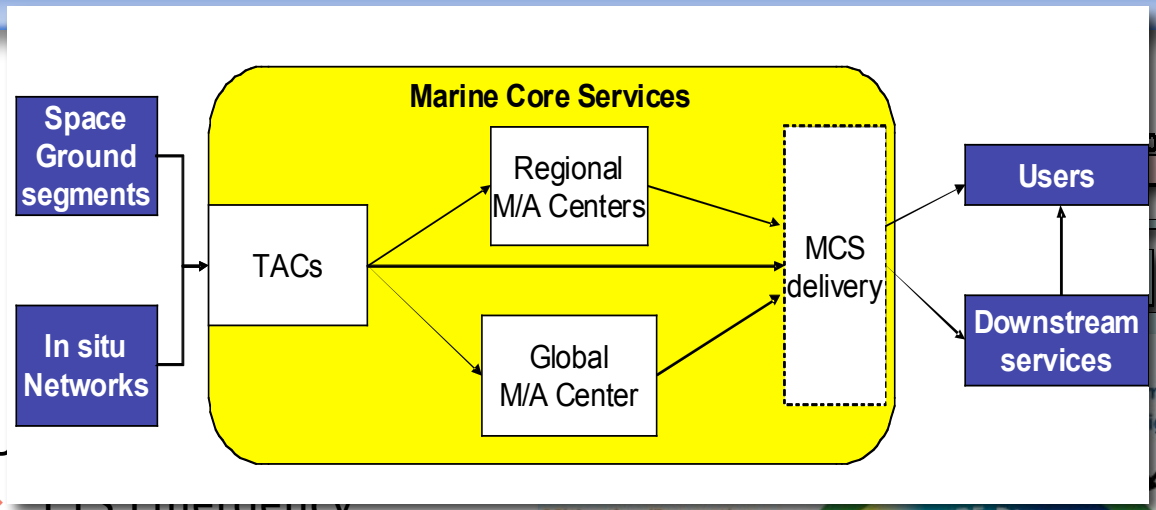
- Very specific products and services established according to identified needs
- Permanent communication between users and service providers (SLA - Service Level Agreements)
- Situation in Romania:
  - No real examples of services / products delivery according to user defined needs
  - Actual “users” use internal capacity to satisfy their needs
  - Data / products / services market is now starting to develop

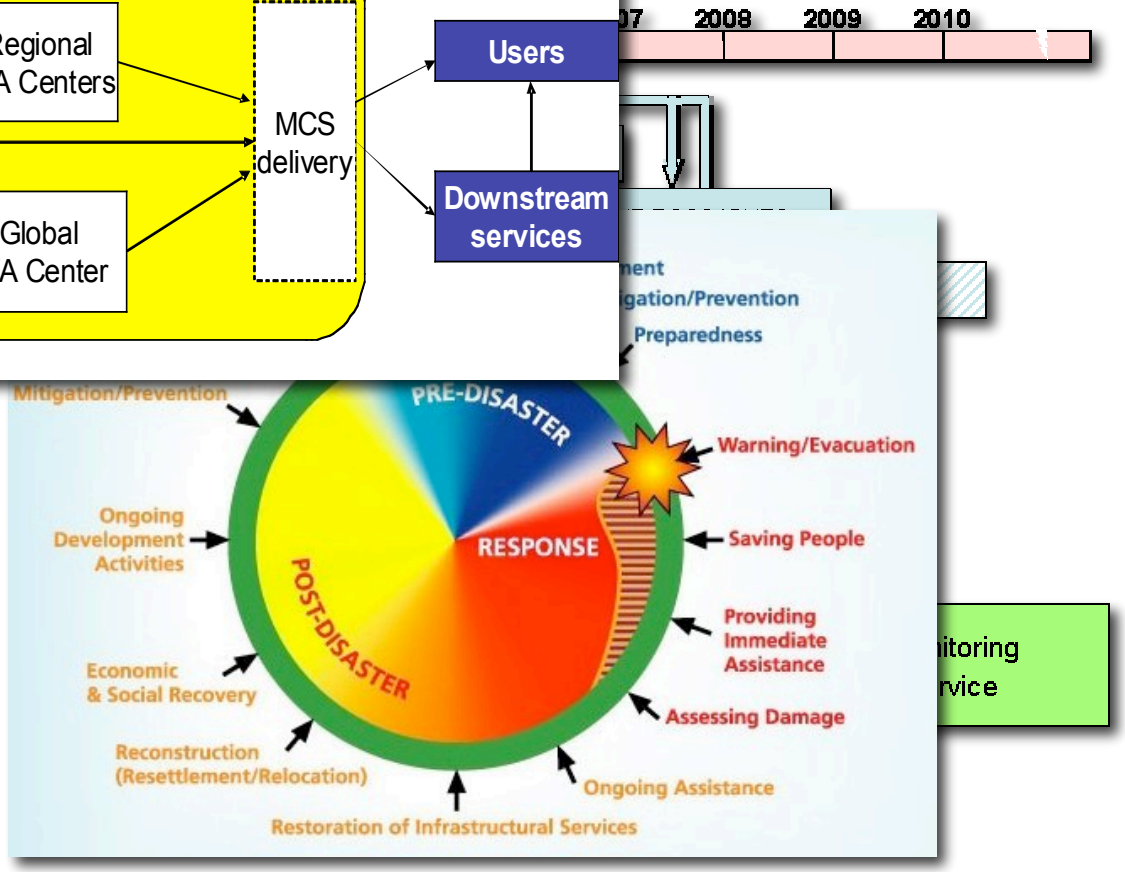
Running projects

GMES related projects included in the new National RTD CEEX Program (2006 -2008 and PNCDI II)

- GOLIAT – Nanosatellite mission and developments in formation flying, including networked environment
- GEOINT – Centre for Geospatial intelligence
- LUCIUS: Building a National Network for **GMES** Applications Support by Setting Up a Land Use Land Cover Information Unified System
- INSPAM: Spatial Data Infrastructures with Applications in Environmental Protection (INSPIRE)
- SPIM: Centre for disaster monitoring by space technology
- MARKS – Knowledge management system for space-related activities
- BANG – **GNSS** / **Galileo** applications, Location based Services
- SIGUR – Emergency response services
- TANACO – echipamente si sisteme de testare a echipamentelor de navigatie in medii complexe
- SPACE21 – strategie in domeniul spatial

Future projects





- EU
  - FTS Emergency response (SAFER)
  - FTS Land Management (Geoland2)
  - FTS Marine core service
- ESA – PECS
  - ROKEO

Concluding remarks

- GMES is no more a “story”
- real life examples confirms feasibility of GMES component services
- FTSs will be the first “tangible” results starting with 2008
- “platform” and motivation for many projects
- many programs funding GMES projects: PNCDI II, FP7, PECS
- Romania: very much work to do

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