



*Building the ERA of knowledge for Growth:
SPACE-related R&D*

**Proposals for the 7th Research
Framework Programme (2007 – 2013)**

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Ecole Polytechnique, 17 novembre 2006



GMES: the challenge

Gothenburg Summit (2001):

- *... the next phase of GMES, [should be] aimed at achieving by 2008 an operational and autonomous European capability for GMES, based on a sound cost/benefit assessment ...*
- *... the Commission [should] contribute to focusing GMES on users' needs by assessing in detail its own needs for GMES services ...*
- **Council Resolution 2001/C 350/02 (Nov 2001)**



Space in FP7: building on the experience of FP6

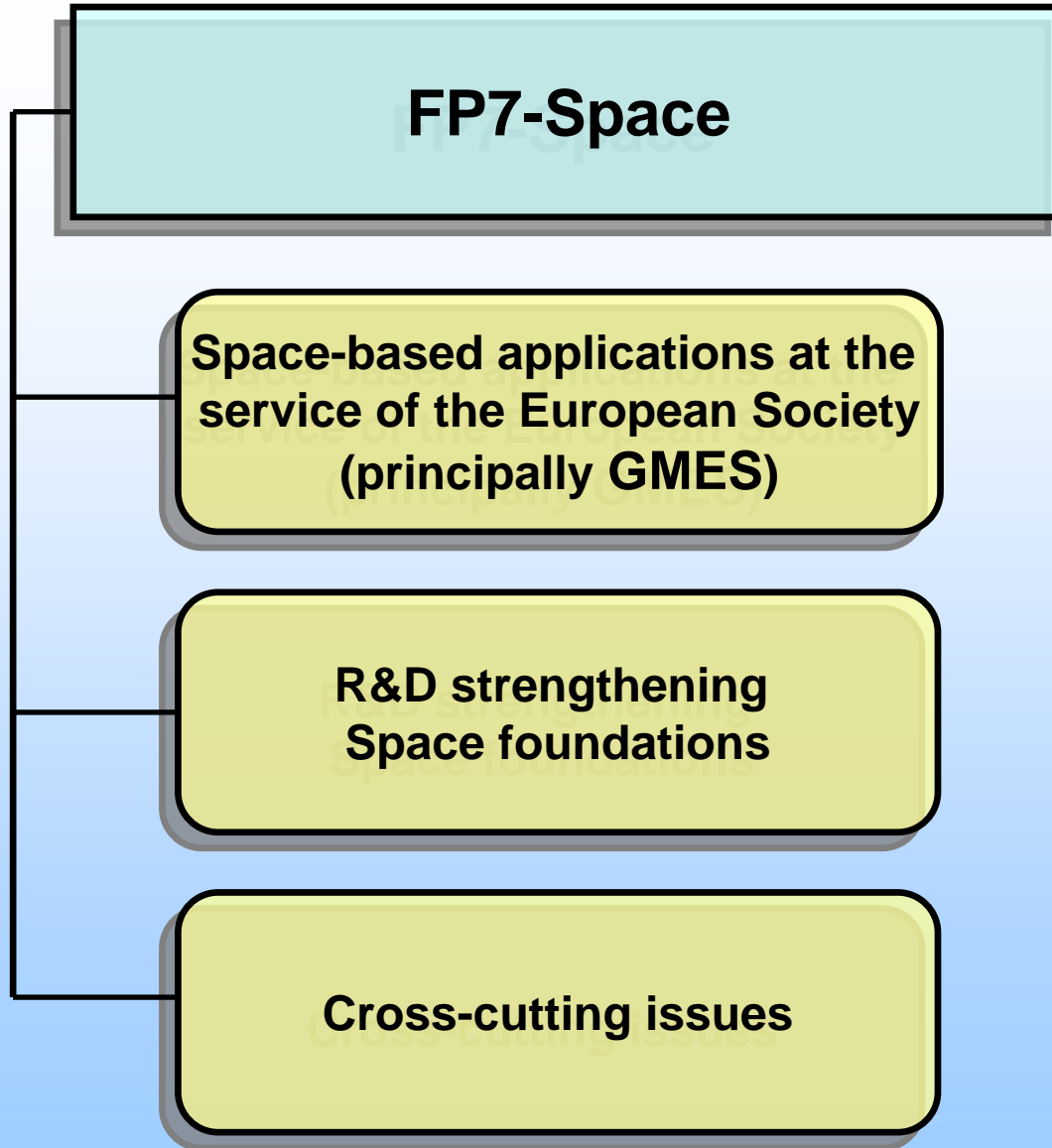
- **Large increase in budget for Space (and Security)**
- **Space was a new activity in FP6, we have learnt a lot:**
 - **Better mutual knowledge of European space stakeholders**
 - **Better understanding of the FP6 « new instruments »**
 - **More realistic view of what is achievable for the development and validation of an operational GMES service**
- **FP7 should build on experience from FP6 to ensure that GMES is successful, in particular building on the foundation of GMES Fast Track Services.**

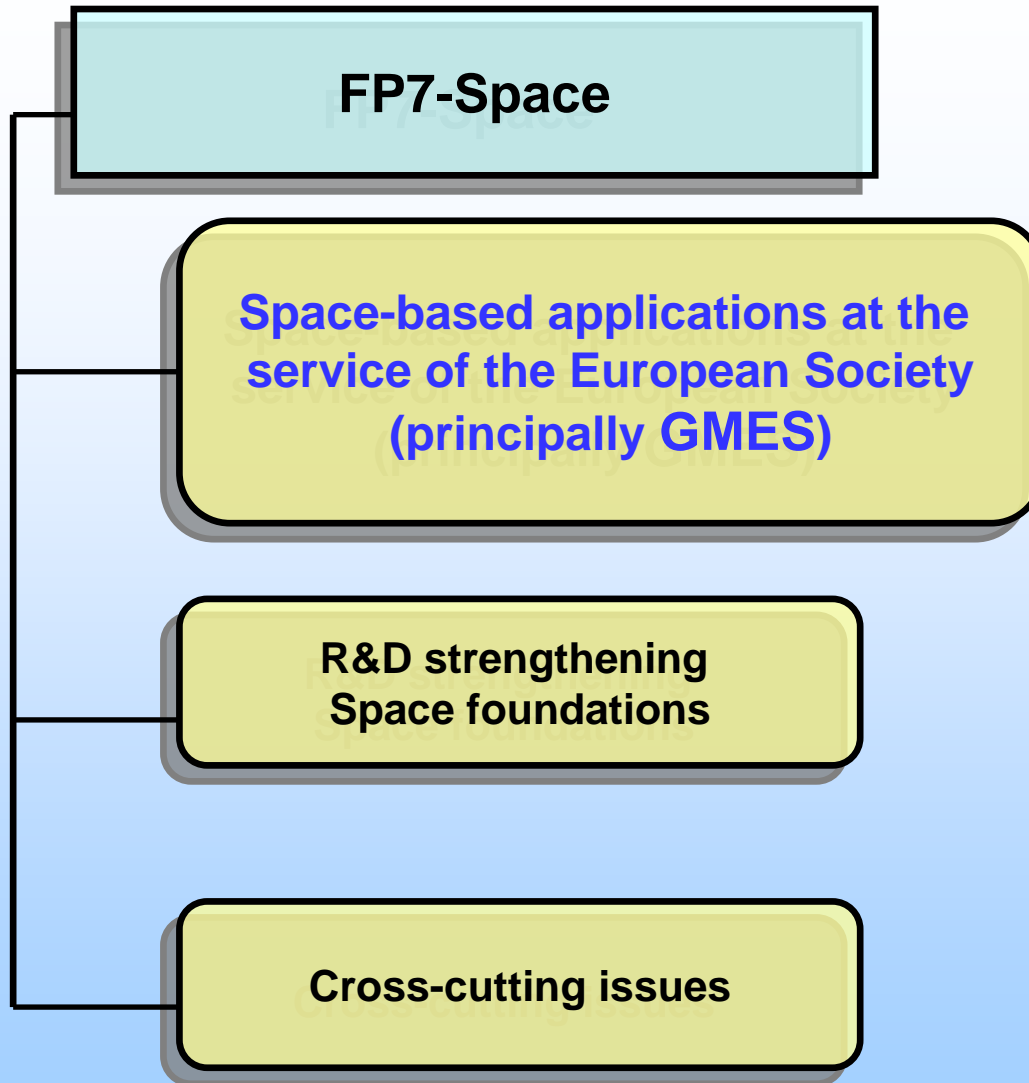


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Space in FP7: indicative distribution of resources

- **€1.4 billion for FP7 Space theme**
- **About 85% for GMES (€1.2 billion), including for dedicated space infrastructures**
- **About 15% for strengthening space foundations and cross-cutting issues**



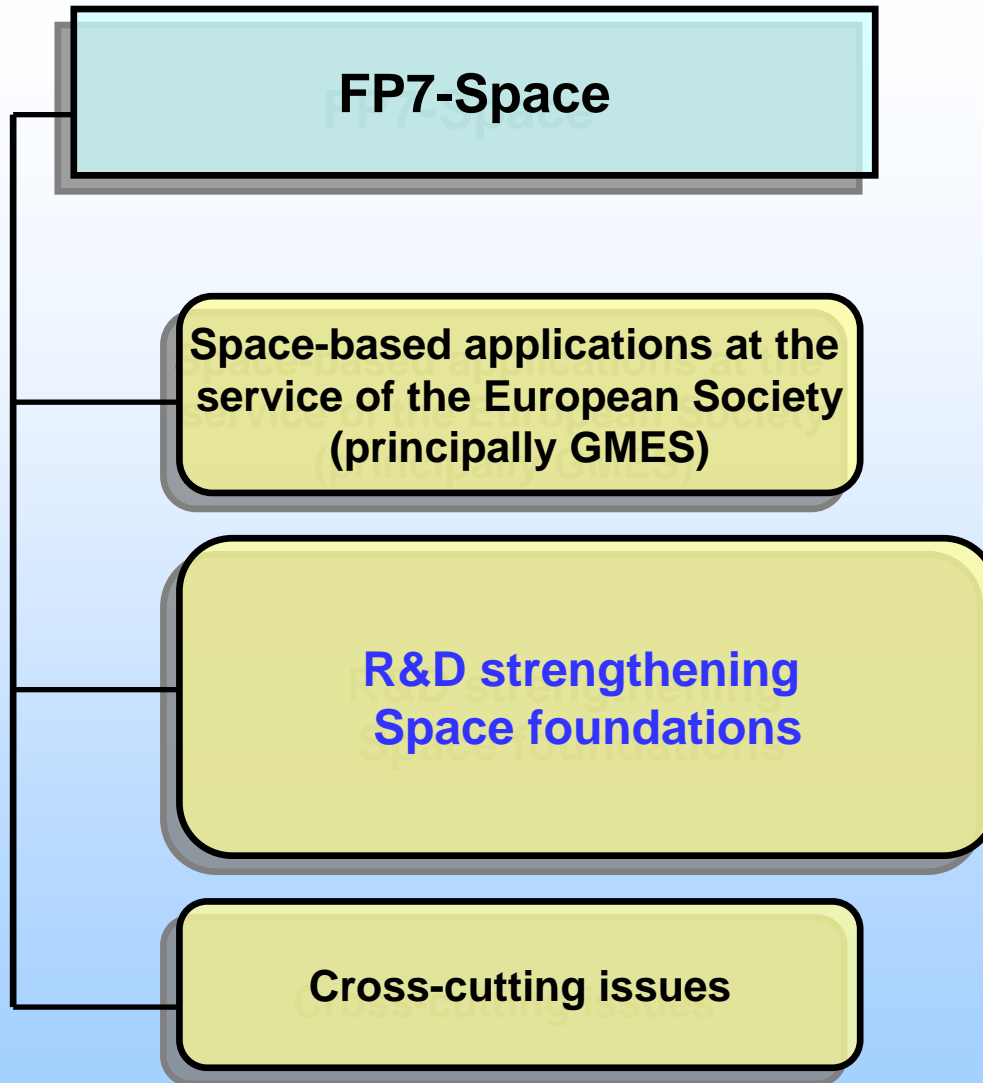




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Space-based applications at the service of European society (GMES): overview

- Development and validation of pre-operational GMES services, starting with the Fast Track Services
- Integrating Earth Observation with SatCom and SatNav technologies (esp. for prevention and management of emergencies)
- Support to the coordinated procurement of data (space and in-situ) for related projects in FP7
- Development of dedicated space infrastructures for GMES (→ESA)

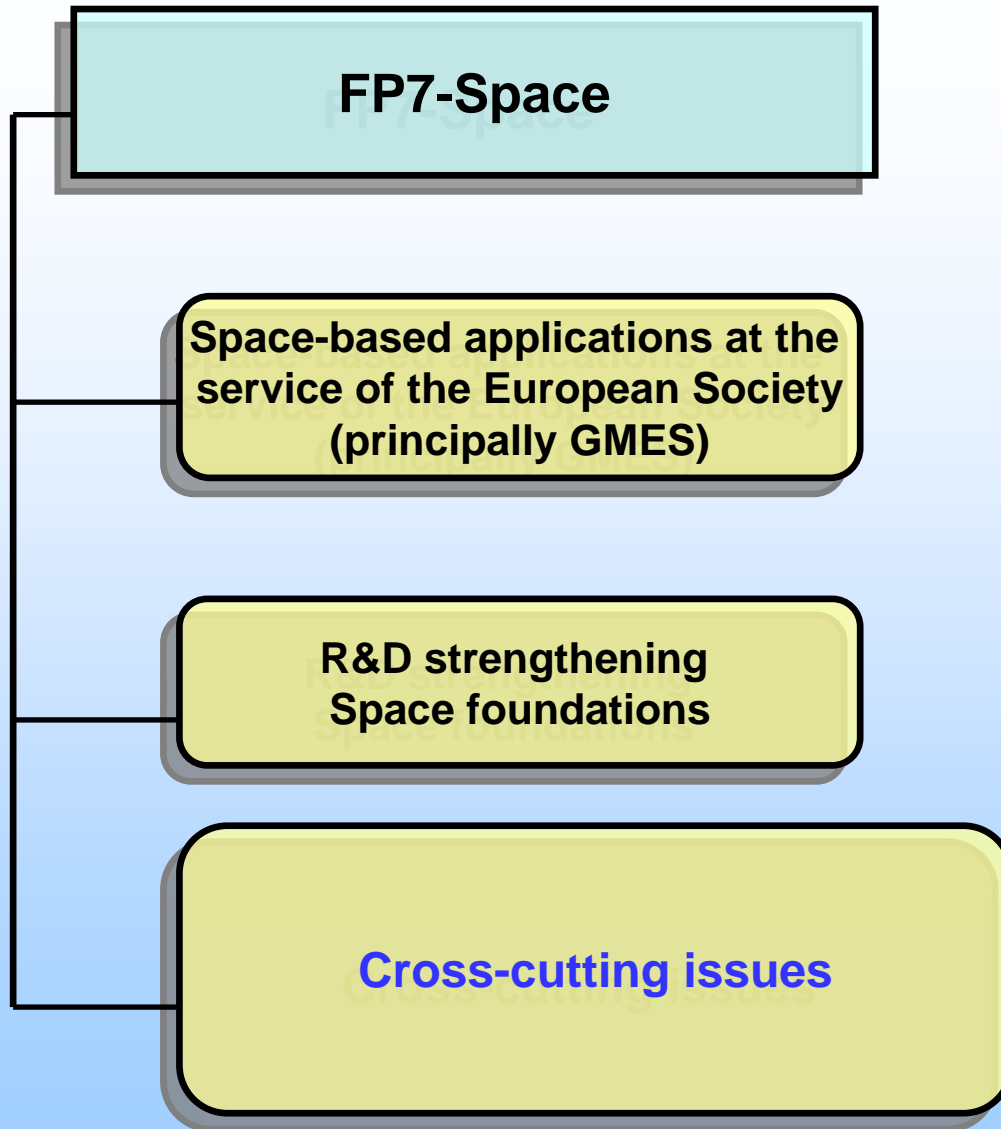




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Strengthening space foundations: overview

- **Space science and exploration**
- **Space transportation and critical technologies (for Non-Dependence)**
- **Reducing the vulnerability of space-based systems**





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Horizontal/cross-cutting issues: overview

- **International cooperation**
- **European Research Area Networks (ERA-NET)**
- **Integration of SMEs**
- **Dissemination**



GMES: from concept to reality

- The next EU flagship for Space after Galileo (*2nd Space Council, June 2005*).
- An EU-led initiative, in which the Commission will manage actions for identifying and developing *services* relying both on in-situ and remote sensing data and ESA will implement the *space component*.
- R&D for GMES in FP7 should:
 - Make best use of, and harmonise, existing systems;
 - Support the development of new capacity where needed;
 - Explore condition for long-term sustainability.



BACKUP SLIDES



GMES: serving a range of Community policies

- observation of the state and evolution of the global environment
- monitoring for the EC 6th Environmental Action Plan
- support to EC Common Policies (Agricultural, Fisheries and Regional Development)
- aid to civil protection for prevention, monitoring and assessment of natural and man-made hazards
- assistance to development and humanitarian aid
- support to the EU Common Foreign and Security Policy (CFSP) and other policies relevant to European citizens' security



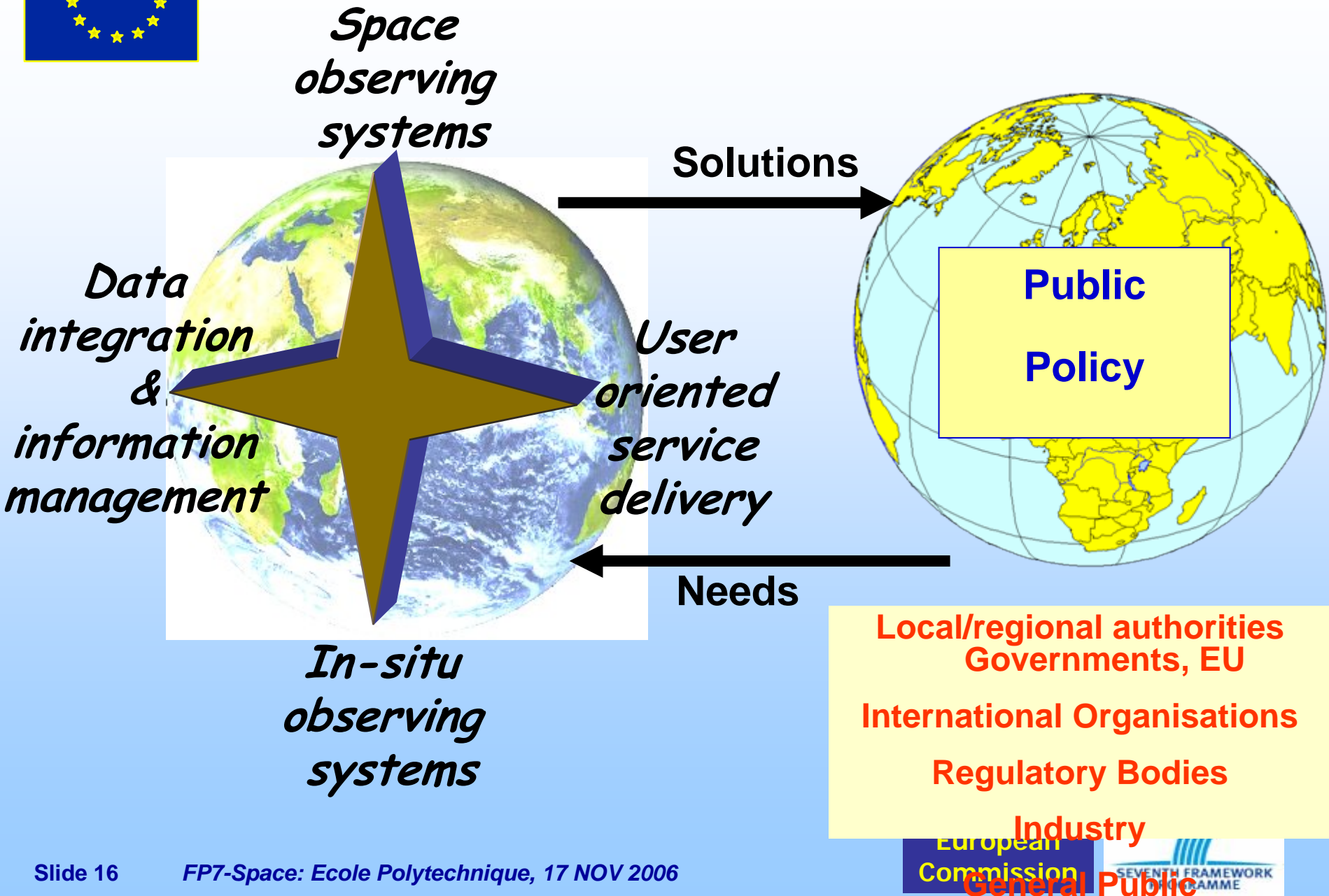
GMES: from projects to ... services

A user driven approach:

- Existing demand at EU level will be progressively aggregated.
- The Commission has set up (June 2006) a GMES Bureau, operating within the Commission, to strengthen the management of GMES (replacing the former 'GMES Programme Office').
- The Bureau has the potential to form the core of an embryonic GMES management body and could progressively work also on behalf of other EU institutions and agencies
- The Commission will also strengthen the relations between the 'GMES Advisory Council' and other bodies in related areas (e.g. GEO).

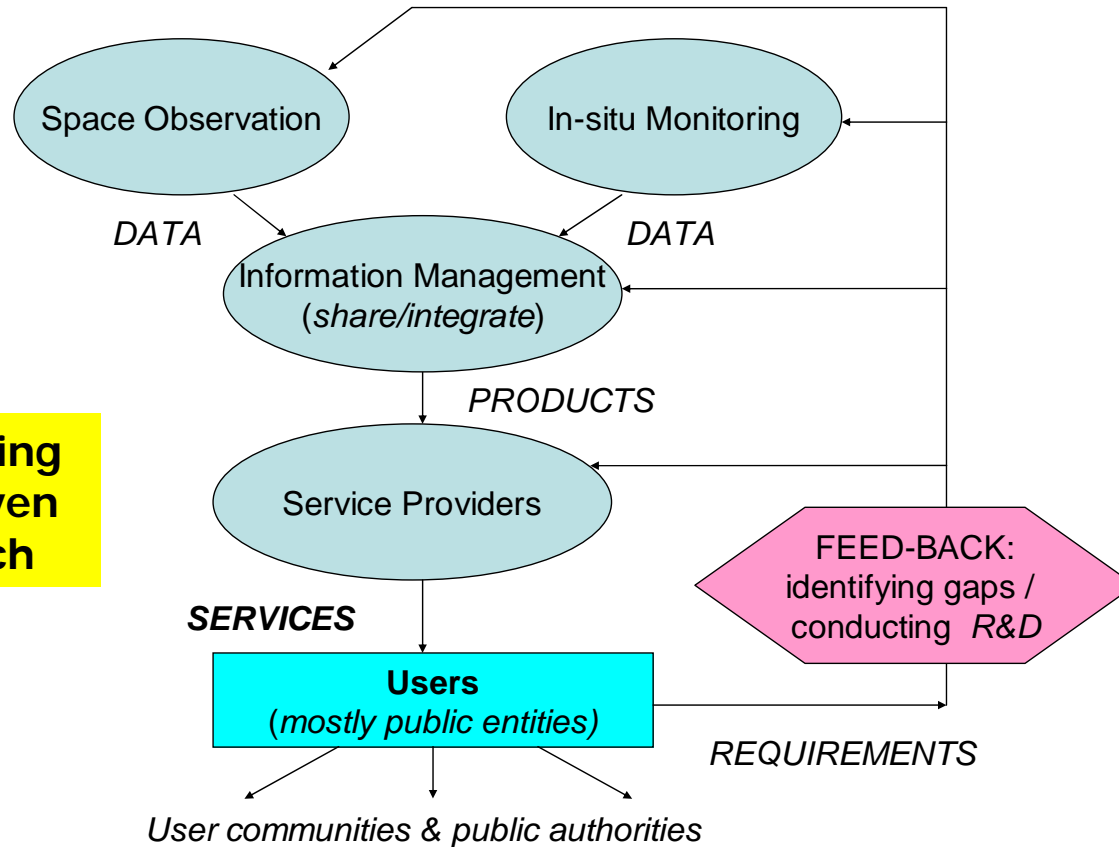
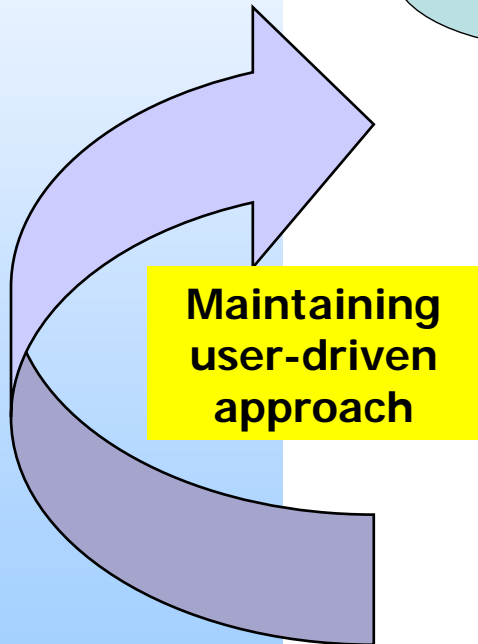


GMES components





GMES: implementation through Services





EUROPEAN COMMISSION

Community Research

GMES: Capacity building in projects...

Inputs from

Data Providers

Space

Level 1 products / sensor

Airborn

Level 1 products / sensor

In-situ

Level 1 products / sensor

Production by

Service and/or Thematic Centres

2003



Land Cover & Vegetation

2005

WATER

2003



OCEAN

2004



ATMOSPHERE

2004



RISKS

2005



SECURITY

Outputs for

Users

Coastal zone

Fisheries

Fleet nav.

Forest Fires

Flood

Cities

Agri.

Civil Protection

European Commission





GMES: Why a Community approach?

There is a clear EU added value from factors such as:

- Coherent monitoring of EU and MS policies
- Europe-wide compatible products for further use at all levels
- Geospatial inter-operability (*c.f. draft INSPIRE Directive*)
- Faster receipt of information enabling more timely decisions at user level
- Data sharing (e.g. satellite images) by several applications (and several regions)
- Robust and enhanced continuity of services, reducing downstream investment



GMES funding sources so far

➔ European Commission

**FP5 & FP6 “ Global Change” area (DG RTD), ±100 M€ within FP6
"Aeronautics & Space" area (DG ENTR), ±40 M€ Information
Society Technology, and JRC direct actions**

➔ European Space Agency

ESA: ±80 M€ for 2003-2007– Earth Watch line

- ***GMES Service Element (2002-2006)***
 - Service Consolidation
 - Scaling-up Services
- ***GMES Preparatory Activities (2005-2007)***
 - Socio-economic studies, Sentinel studies



The next phase of GMES: user led services

- It is now necessary to evolve from a collection of *projects*, which explore user requirements ...
- ... to an integrated set of initial *operational services*, matched by user commitment,
- starting with a first set of pilot services (“fast track”) to be delivered by 2008.



GMES ... from projects to services ...

- Move from laboratory prototypes to operational scenarios
- From short and mid-term to long-term agendas
- Integration of infrastructures
- Integration of data and information provision
 - ➔ **Procurement and delivery side**
- Linkage of existing capacities and structures
- Sustainable operational scenarios
- Dependence on multiple staggered funding sources, incorporating both public and private funding



GMES Fast Track Services

- The choice of pilot services should be based on existing and mature capacities and structures, on user uptake and on conditions for long-term sustainability.
- The first three candidate pilot services (“fast track”):
 - ✓ *Information for Crisis (Emergency) Management*
 - ✓ *Land Monitoring Services*
 - ✓ *Marine Core Services*
- They explore different system characteristics and architectures of GMES
- Monitored by “Implementation Groups” (user-led)

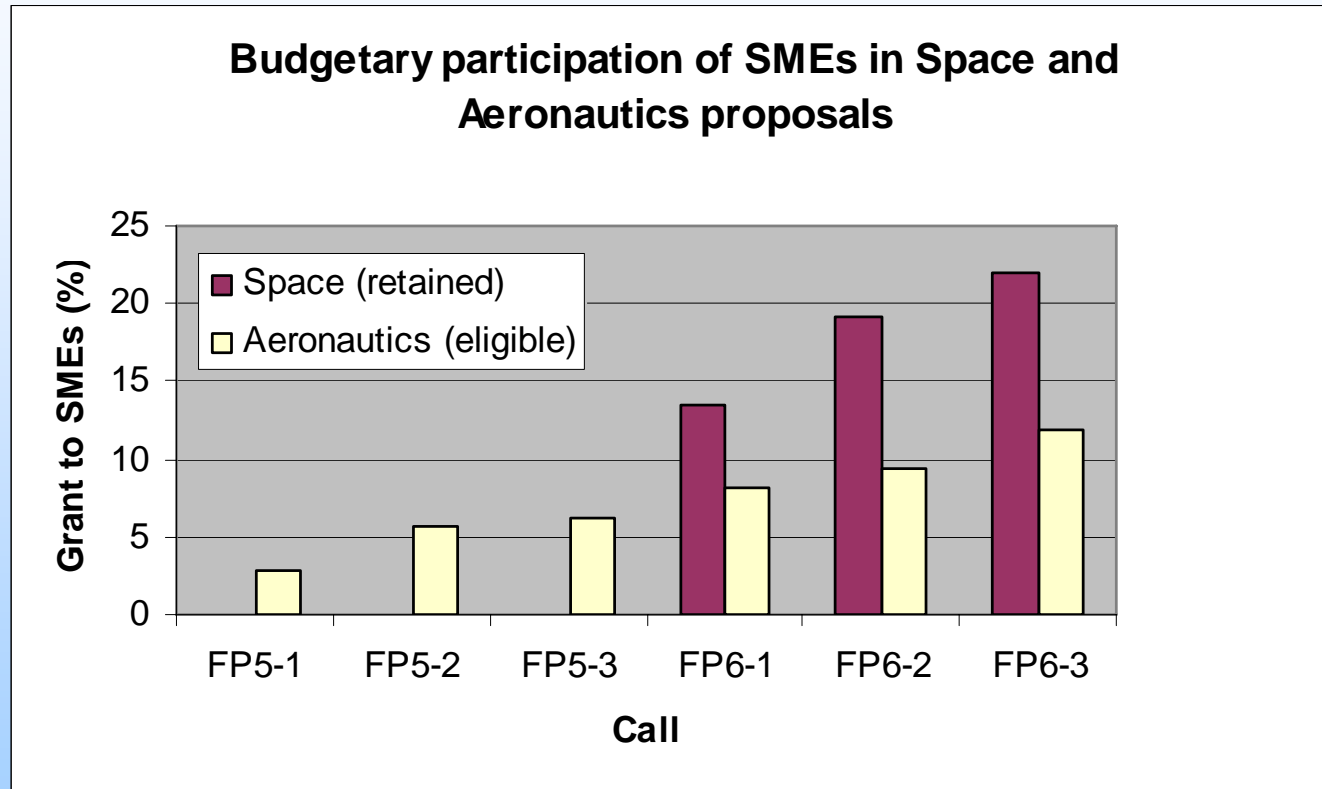


GMES Bureau: main tasks

- ***identification of strategy for GMES, becoming the focal point for the coordination of the Commission's GMES-related activities and the consolidation of user needs;***
- ***development of GMES pilot services, starting with the fast track services; and***
- ***support to the management of on-going and future research and technology development activities.***



FP6-Space: Evolution of SME participation





FP6-Space: analysis of SME participation

- Very strong participation of SMEs in STREPs (49%)
- Satcom IPs: 39% in 3rd call (22% in 1st + 2nd)
- GMES IPs: 16% in 3rd call (6% in 1st + 2nd)
- Grant/SME has progressed over Call 1, 2 and 3: k€ 93, 162, 233



Useful Web addresses

- GMES web site
 - <http://www.gmes.info>
- Space web site
 - <http://ec.europa.eu/comm/space>
- ESA web site
 - <http://www.esa.int/esaLP/LPgmes.html>
- Cordis
 - <http://cordis.europa.eu/en/home.html>