



# **Global Monitoring for Environment and Security**

**Status December 2006**

**Peter BREGER  
Unit H3**

**Enterprise and Industry DG – European Commission**



# GMES - Global Monitoring for Environment and Security

- To provide, on a sustained basis, reliable and timely information related to environmental and security issues in support of public policy makers' needs
- An EU led initiative, in which ESA will implement the space component and the Commission will manage actions for identifying and developing services
  - GMES Communication - COM(2005)565
- Fulfills objective of a European Space Policy to make Space a tool to serve the policies of the Union , its Member States and its citizens
  - European Space Policy – Preliminary Elements COM(2005)208 final



# GMES First steps

- Endorsement by EU Gothenburg Council June 2001 - Launch Initial Period of GMES
- Initial Period (2001-2003) results in Final Report (available at <http://www.gmes.info>) and Commission Communication [COM (2004) 65 final] (3 Feb. 2004)
- Projects for pre-operational services (2001/2 onwards) (realisation via EC-FP6, ESA GSE – together 250M€)
- *From Concept to Reality* [COM(2005)565] (16 Nov 2005)  
Strategic dimension of GMES, place within GEOSS process, GMES at the service of the EU



# FP6-Space: Overview of call content

## 1st Call

## 2nd Call

## 3rd Call (2005)

GMES

- ✓ Ocean and marine
- ✗ Risk management
- ✓ Landcover
- ✓ Security (NoE)

- ✗ Water resources
- ✓ Atmosphere
- ✓ Risk management

- ✗ Water resources
- ✓ Security
- ✓ Data harmonisation
- ✓ Long-term sustainability of GMES

SATCOM

- ✗ Transport applications
- ✗ Tele-education/medecine
- ✓ Rural area applications

- ✓ Mobility applications
- ✗ Convergence with GMES
- ✗ Convergence with Galileo
- ✓ Tele-education
- ✓ Tele-medecine

- ✓ Convergence with GMES
- ✓ Convergence with Galileo

~Σ 142M€





# 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

2004 & 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



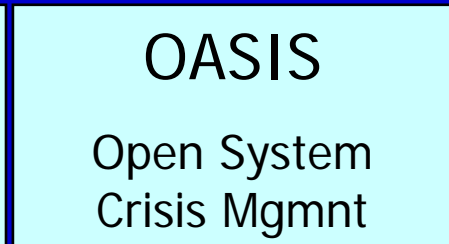
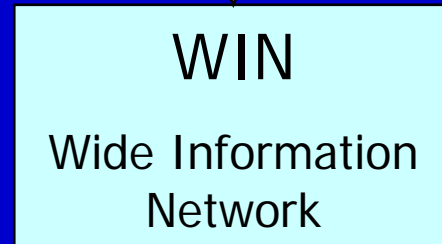
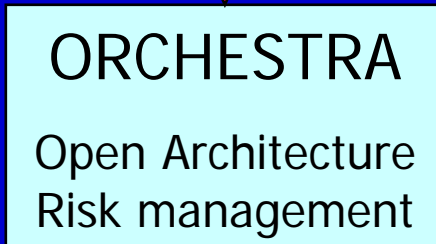
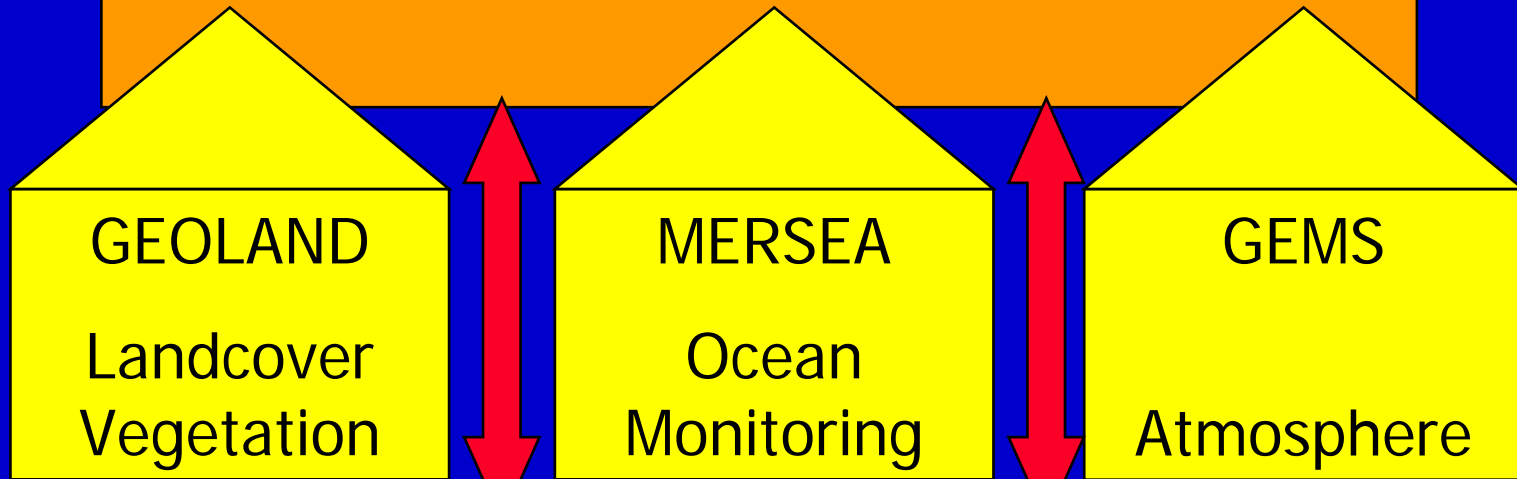


# HALO Support Action

SSA

HALO - Harmonised coordination  
of the Atmosphere, Land and Ocean integrated  
projects  
of the GMES backbone

IP





# Propose for negotiation (GMES Integrated projects)

Area	Instrument	Subject	Acronym	Mark /30	EC cont. (M€)
GMES	IP	Security	LIMES	25.0	12.9
GMES	IP	Long Term Sustainability	BOSS4GMES	25.0	13.3
GMES	IP	INSPIRE	HUMBOLDT	26.0	8.3
					34.5

**After 3rd call, funding of these 3 IPs covers the FP6 stated goals of Integrated Projects in all application fields, with exception of « Water » (available ±32.5M€ -> 34.5M€)**





## Propose for negotiation (SATCOM Integrated projects)

Area	Instrument	Subject	Acronym	Mark /30	EC cont. (M€)
GMES	IP	Convergence with GMES	TANGO	25.0	5.2
GMES	IP	Convergence with GALILEO	SISTER	25.0	5.8
					11.0

**After 3rd call, funding of these 2 IPs covers the FP6 stated goals of Integrated Projects in all fields, end-to-end services and convergence GMES/GALILEO (uses 11M€ of available ±12.5M€)**







# Traditional Instruments

User network  
(Land,Europewide)

Atmospheric  
monitoring over  
China

GMES Panel

GMES CA	GMES SSA	GMES STREP
GNU		
		AMFIC
	DRAGONESS	
		SCHEMA
SEOS		MONRUK
	GOCINO	
	CASCADOSS	
	NAVOBSPLUS	

- = User federation
- = International Co-op.
- = Training/Education

Open Source  
software for  
GMES

SATCOM Panel

	SATCOM SSA	SATCOM STREP
	AFSAGA	
		NETAdded





# GMES management (2004 – 2005)

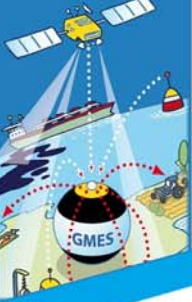
## GMES Programme Office

- operational management of GMES using mechanisms foreseen in EC/ESA Framework Agreement. Populated in part by seconded experts from Member States and EEA, EUMETSAT, EU Satellite Center, EU Council.

## GMES Advisory Council

- long-term strategy, political and financial support Brings together EU/ESA Member States, the European Commission and ESA, plus other stake-holders, on an ad-hoc basis: (e.g. EEA, EUMETSAT, ECMWF, European Maritime Safety Agency, EU Satellite Centre, EU Council etc.), representatives of end-users, industry, service providers, research organisations, academia.



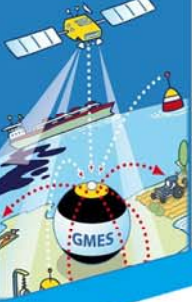


# Mid 2006: Establishment of GMES Bureau to coordinate EC actions

Unit in DG Enterprise and Industry – European Commission headed by Valere MOUTARLIER

An EU-led initiative, in which

- the Commission will aggregate user needs and manage actions for identifying and developing *services* relying both on in-situ and remote sensing data and
- ESA will implement the *space component*.




User DG  
Steering Board

Users needs at  
EU level

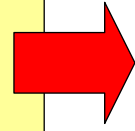
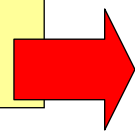
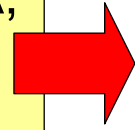
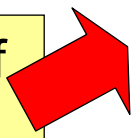
Unit H7 includes Staff  
delegated from  
DG ENTR, JRC, EEA,  
DG ENV, DG AGRI  
  
Operational supply  
coordination  
  
User needs aggregation

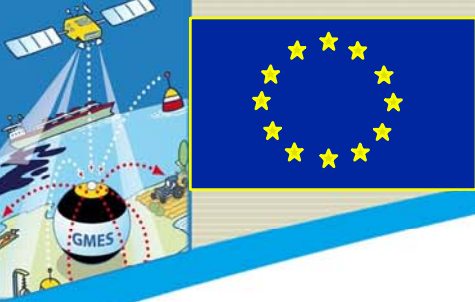
EU Space  
Policy  
development  
  
Industrial policy  
  
Unit H2

GMES Space  
Component 

GMES  
Governance 

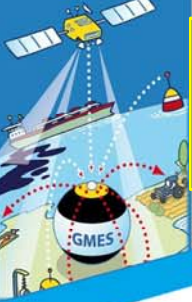
'Space' Theme  
Framework  
Programme 7  
Implementation  
  
Unit H3





# Political agenda

- **2<sup>nd</sup> Space Council - June 2005: GMES identified as a 'flagship' of the European Space Policy**
- **GMES part of the Lisbon Strategy**
- **GMES aims to develop information and support services :**
  - To **European policies** : environment, CAP, security, maritime...
  - To **EU international commitments**: protocols and conventions
  - to **national or regional «adaptations»** of these policies or commitments



# 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 faced in FP7**
  - Maximum use of **existing EO systems**
  - Support to development of **new capacities** if needed
  - **Harmonise ongoing initiatives**
  - **Sustainable** governance and finance



European  
Commission

## FP7-Space

**FP7**

Space-based applications at the  
service of the European Society  
(principally GMES)

R&D strengthening  
Space foundations

Cross-cutting issues



# 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.





European  
Commission

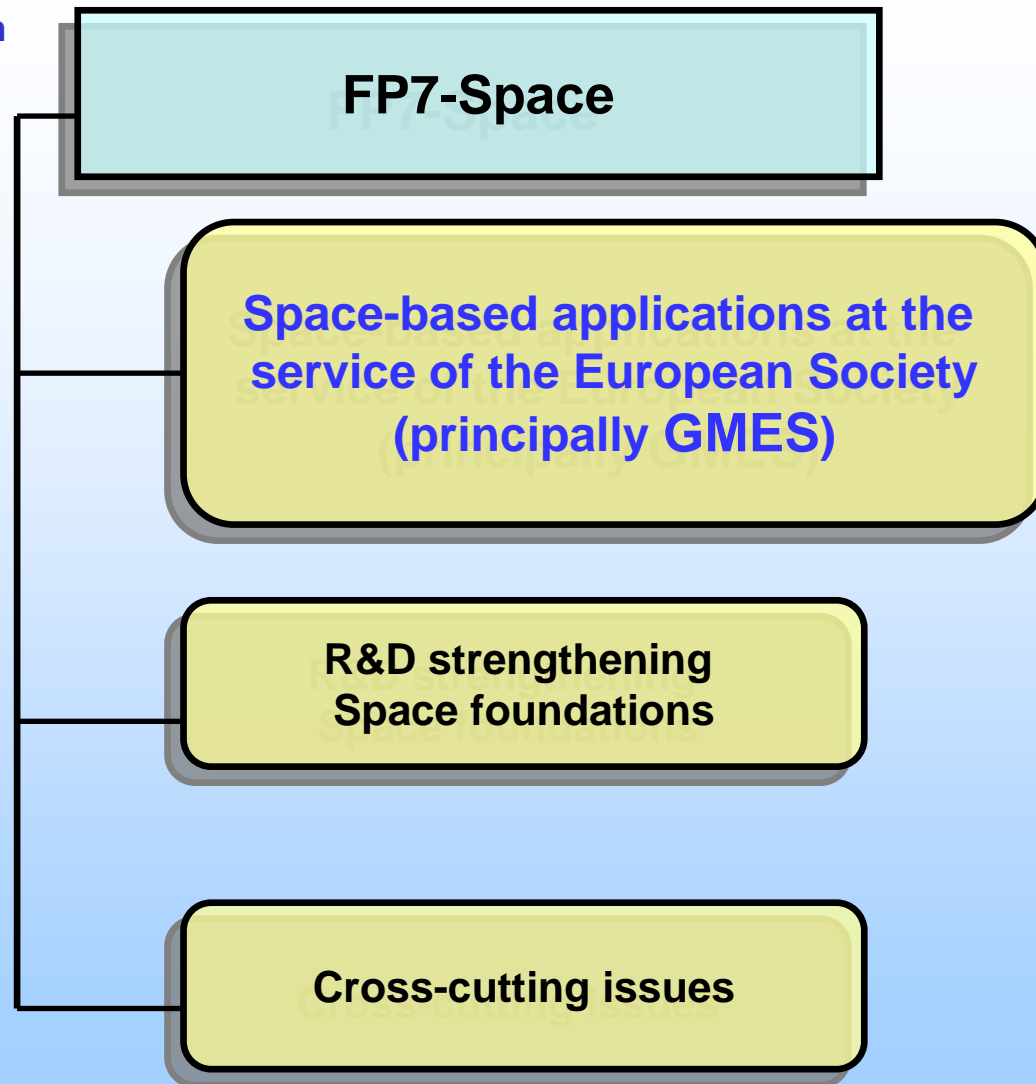
DRAFT

## 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



European  
Commission





European  
Commission

## Indicative breakdown of resources

**DRAFT**

- Of € 1.2 billion foreseen for space-based applications:
  - ➔ **About €650Mio foreseen for space infrastructures (ESA)**
  - ➔ **About €150Mio foreseen for « data procurement of data »: both space-based (ESA) and in-situ (EEA?)**
  - ➔ **About €400Mio foreseen for space-based applications projects (Commission)**



European  
Commission

**DRAFT**

# 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)



European  
Commission

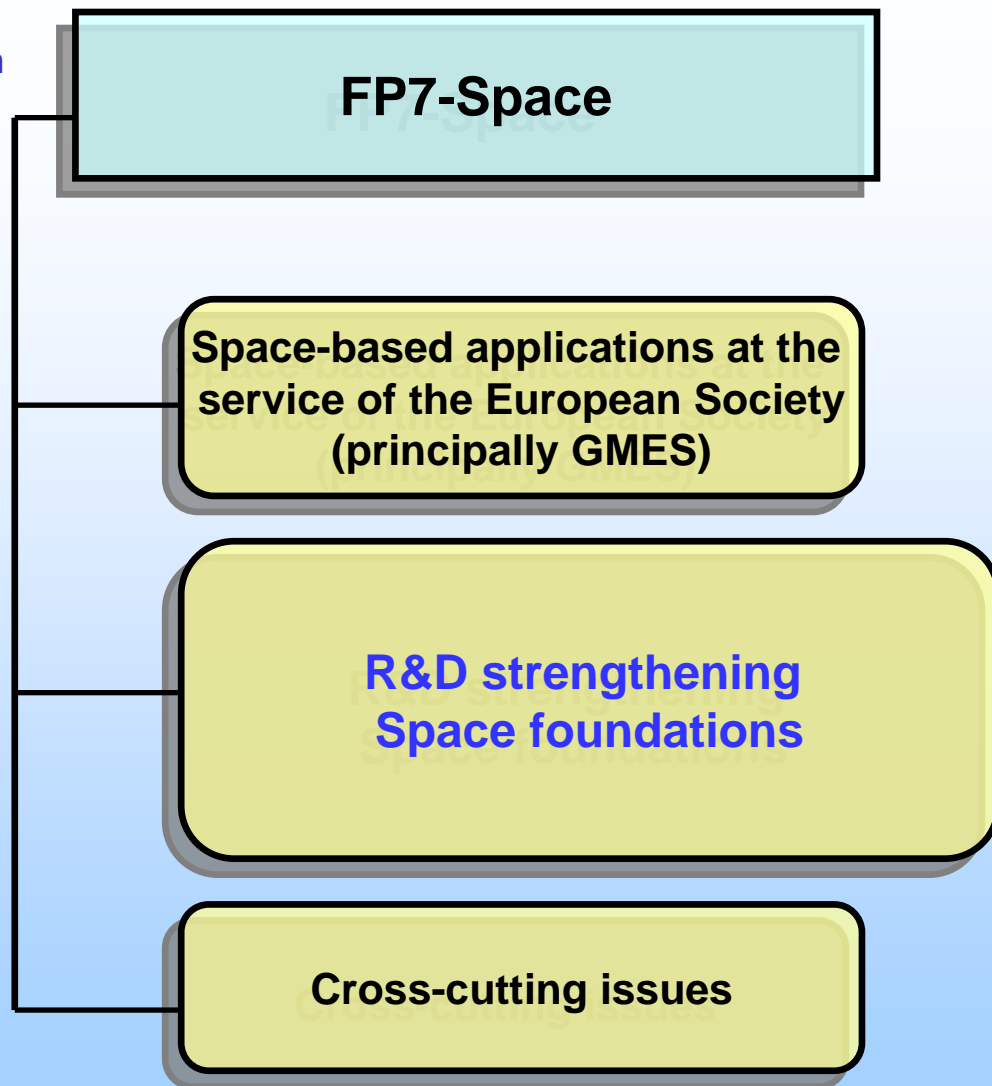
**DRAFT**

## Some priorities

- **Development of Fast Track Services**
- **Development of pre-operational GMES pilot services in new application fields (e.g. Atmosphere, Security)**
- **Data procurement for service projects through separate 100% funded Support Action**



European  
Commission





European  
Commission

**DRAFT**

## Breakdown of resources

- **€150-180 Mio foreseen for « strengthening space foundations »**
- **No precise earmarking of funds foreseen between topics**



European  
Commission

**DRAFT**

# Strengthening space foundations: overview

- Support to research in space science and exploration
- New concepts in space transportation, space technologies and critical components (for Non-Dependence)
- Research into reducing the vulnerability of space-based systems





European  
Commissi

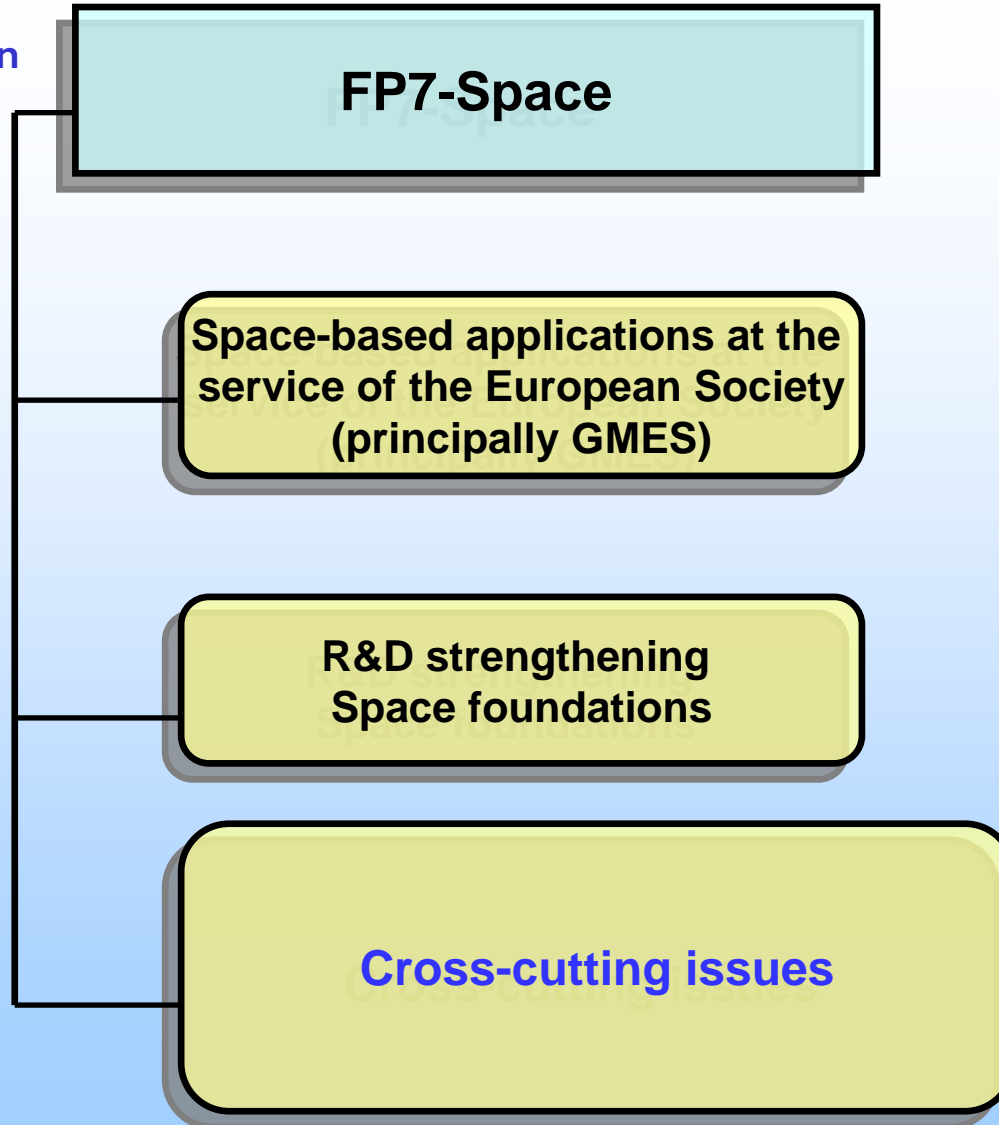
**DRAFT**

## Some priorities

- **New FP7 activity in these areas: should ensure complementarity with the extensive activities already undertaken by ESA/member states, e.g. ESA road-maps**
- **Focus on upstream aspects of research (innovative launch/propulsion technologies, optimal preparation of scientific payloads)**
- **But also downstream aspects (effective exploitation of data produced by missions, contribution to the sustainable provision of critical components)**



European  
Commission





European  
Commission

**DRAFT**

# Horizontal/cross-cutting issues: overview

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



European  
Commission

**DRAFT**

# Priorities for the first Call (2007)

- Development and validation of pre-operational GMES Fast Track Services (Ocean, Land, Emergency)
- Development and validation of further pre-operational GMES Services (Atmosphere, Security)
- Basic Space science, technology and transportation

AND

- Support to the coordinated procurement of space-based data for GMES related projects in FP7 (→ ESA)

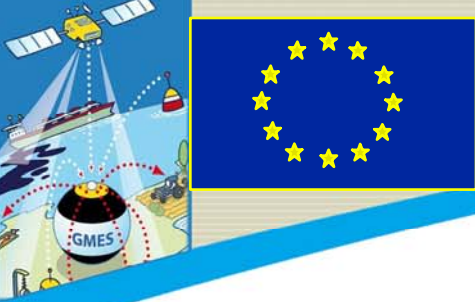


European  
Commission

**DRAFT**

## Timing 1st call

- **Publication December 2006**
- **Deadline May/June 2007**
- **Evaluation July-September 2007**
- **First contracts early 2008**



# Thank you.

2001

2007

