

THE EUROPEAN SPACE POLICY



Hélène-Diane Dage
Space Policy and Coordination Unit, DG-Enterprise
and Industry, European Commission



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European Space Policy: why

This first European Space Policy (April 2007) provides a European identity to space – a true milestone for the development of space policy in Europe:

- Space helps us understand the fragility of our planetary systems and their complex interrelation.
- Space gives us the tools to address many other challenges of the 21st century. It is essential and urgent to make effective use of these tools in the implementation of a wide range of policies.
- Space-based systems provide improved weather forecasts, satellite broadcasting and advanced navigation services; they open up new opportunities in tele-education and tele-medicine.



European Space Policy: why

- Space systems are critical to key areas of the economy: communication systems, electrical power grids, and financial networks all rely on satellite timing for synchronisation.
- Satellite communications will bring benefits for every citizen by providing cost-effective solutions for services such as high definition TV, broadband or mobile TV, in particular for remote and rural areas.
- Space also contributes to the knowledge-based society, providing the tools for understanding our planet, its origins, its environment, the Solar System and the Universe. Space can contribute to European cohesion and identity, reaching citizens across all countries.
- Space also provide valuable support to European external policies, particularly humanitarian aid and sustainable and development policy.

Strategic objectives in support of Europe's global role in space

In the ESP, convergence among Member States, ESA and EC has been achieved on a variety of Strategic Objectives, recognising the strategic importance of space assets for Europe's ambition to fully play its role at a global level, by

- developing and exploiting space applications serving Europe's public policy objectives and needs of European enterprises and citizens, including in the field of environment, development and global climate change
- meeting Europe's Security Strategy & Common Foreign and Security Policy needs as regards space
- protecting against disruption space capabilities

Strategic Objectives(2)

- **ensuring a strong and competitive space industry which fosters innovation, growth and the development and delivery of sustainable and cost-effective services**
- **ensuring an independent access to space**
- **maintaining and developing technological expertise as well as knowledge in space-based science and space exploration, which contribute to the knowledge-based society**
- **securing unrestricted access to new and critical technologies, systems and capabilities**



Space and economy/competitiveness

- Awareness raising of the socio-economic benefits of space and its contribution to the Lisbon objectives
- The evolution of European user needs requires the development of integrated space systems, seamlessly linking satellite and terrestrial telecommunications, positioning and monitoring in areas of strategic, economic and societal value.
- Industrial policy to ensure a strong, autonomous and competitive space industry which fosters innovation, growth and the development and delivery of sustainable, high quality, cost-effective services.

Progress on European satellite navigation programmes: Galileo, EGNOS

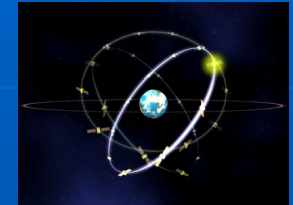
- Agreement of Transport Council November 2007 on modified GALILEO governance and financing structure:
 - Full public financing, additional resources from EU budget
 - Full operational capacity targeted for 2013
 - Division of responsibilities between EC, GSA and ESA
- In-orbit validation on track with successful launch of Giove B on 27 April 2008
- **Transfer of EGNOS infrastructure from ESA to EC in 2009**



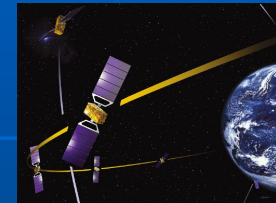
Galileo – an incremental approach



Full Operational Capability
27 (+3) Galileo Satellites



In-Orbit Validation
4 satellites plus
ground segment








Galileo System Testbed v2
GIOVE Satellites



Galileo System Testbed v1
Validate critical algorithms



Galileo – 5 services

Open Access	Free to air; Mass market; Simple positioning	
Commercial	Encrypted; High accuracy; Guaranteed service	
Safety of Life	Open Service + Integrity and Authentication of signal	
Public Regulated	Encrypted; Integrity; Continuous availability	
Search and Rescue	Near real-time; Precise; Return link feasible	

Space and security

- Long Term sustainability of space activities: preparation of a Programme for a European Space Situational Awareness (SSA) capacity
- Maritime surveillance, especially with the new EMSA – European Maritime Safety Agency:
 - LRIT
 - CleanSeaNet Satellite Service: Oil Spill Monitoring
- GMES services in support to EU external action
- GMES PREVIEW (PREvention, Information and Early Warning pre-operational services to support the management of risks)
- **GMES Respond:** an alliance of European and International organisations working with the humanitarian community to improve access to maps, satellite imagery and geographic information

GMES

GMES is a joint initiative of the European Commission and ESA. Its objective is to provide relevant information to policy-makers and other users, particularly in relation to environment and security



**Space Agencies
In-situ Observing systems
Scientific Community
EO Value Adding Industry**

Information →

← **Needs
(policy driven)**



**National Governments and Agencies
European Union Institutions
Inter-Governmental Organisations
(IGOs)
Non Governmental Organisations
(NGOs)**

GMES Services

Three Service areas based on **Earth systems**:

- **Land Monitoring**: initially European land cover & urban spots
- **Marine Monitoring**: sea state & ecosystem characteristics over global ocean & European regional seas
- **Atmospheric Monitoring**: atmospheric composition for air quality (European) and climate forcing (global), ozone monitoring (global) and solar energies

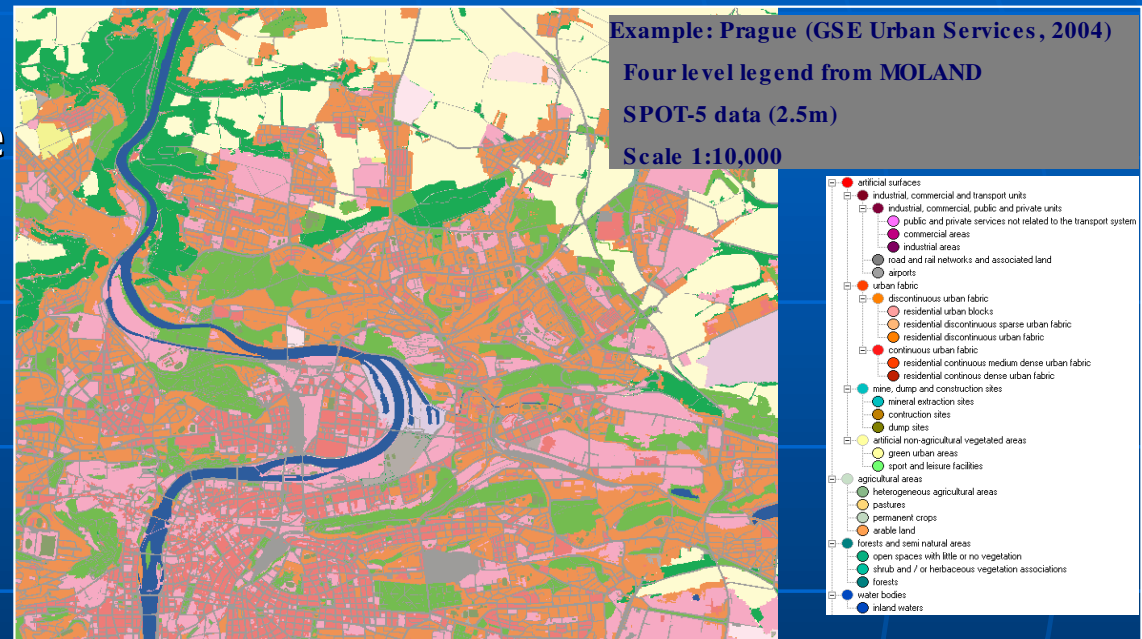
Further, **horizontal components**:

- Emergency Response
- Climate Change

Land Monitoring Service

Main information over Europe

- 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

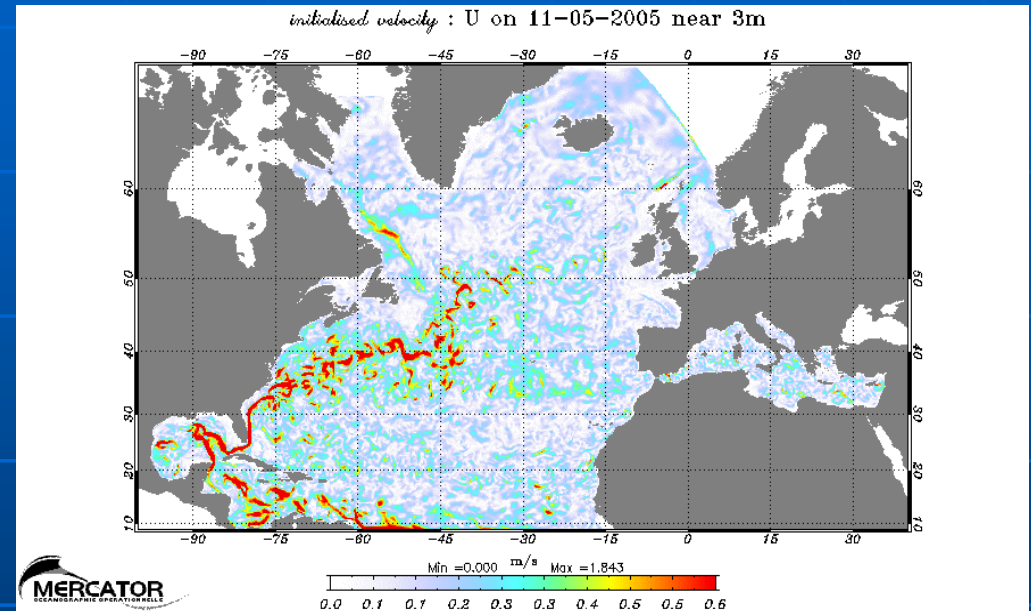


- **Addition of a global component**
- **Evolution to extend the user base: agriculture, forest, soils, water resources**

Marine Core Service

Systematic reference information on the state of the ocean over global ocean & European regional seas

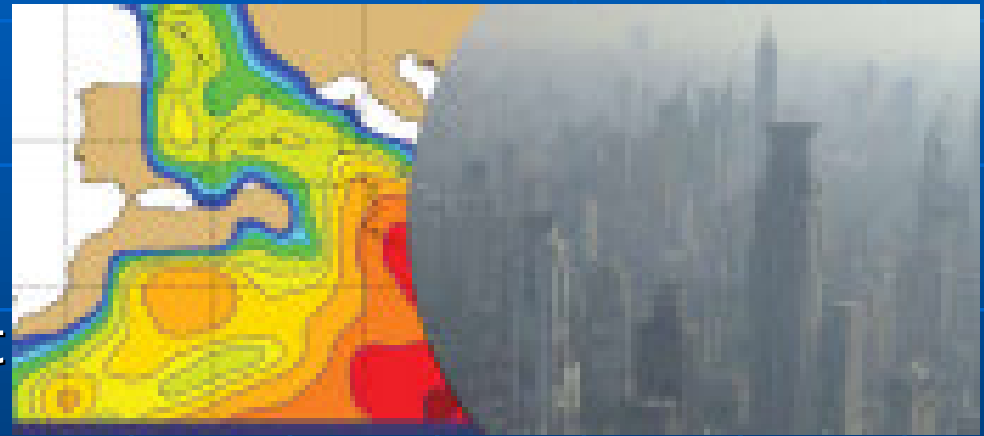
- Observational and model data
- Now- and forecasting
- Re-analyses
- Ocean scenario simulations (with climate modelling centres)
- Evolution towards marine resource & coastal zone management
- Component of the EU Maritime Policy



Atmosphere Service

Main information within & outside Europe

- Air quality
- Climate forcing
- Stratospheric Ozone & UV
- Renewable energy support



Pilot service starting later, but maturing quickly

- User workshop in December 2006
- Implementation group set up in June 2007
- Strategic Implementation Plan due for mid-2008 (on track)

Space and climate change

- GMES contributes to monitoring the status and long-term evolution trends of the main parameters driving the Earth climate, identified as Essential Climate Variables (ECVs) by GCOS, through the acquisition and analysis of (long-term) observation time series.
- The GMES observation and core service components are designed to contribute to this monitoring of Earth systems.

More information:

http://ec.europa.eu/enterprise/space/index_en.html

