

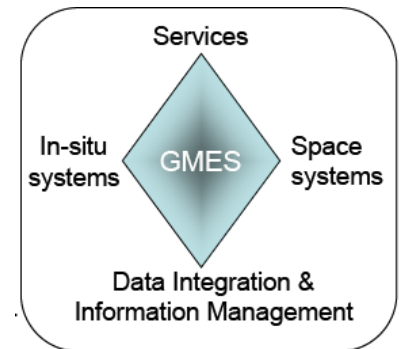
Harmonised access to Earth Observation Ground Segments: facilitating GMES service deployment

Yves Coene, Spacebel s.a.
VRI workshop, Brussel, 10 April 2008



Structure of Presentation

- Spacebel in brief
- Our activities related to GMES
 - ◆ Harmonised access to EO data
 - ◆ Other activities
- Conclusion

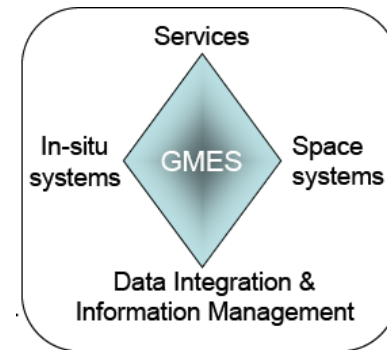


Spacebel in brief

- Created in 1988
- Provides IT solutions for aerospace
 - ◆ Microsatellite mission analysis and definition
 - ◆ On-board software
 - ◆ Ground infrastructure incl. test systems
- Participated to well-known space programs:
 - ◆ PROBA, SMART-1, ISS Space Station, Spot 5, ...
- Sites in Angleur, Hoeilaart, Toulouse

Spacebel role in GMES

- Involved in all aspects of the "GMES diamond":
 - ◆ EO data access
 - ◆ In-situ data access
 - ◆ "Services" through provision of infrastructure:
 - ☞ "Data integration and information management infrastructure" to support provision of services
- "EO data access" and "service provision infrastructure" are main contributions based on long track-record with ESA EO G/S department (ESRIN).



GMES Services Architecture

■ GMES Downstream services

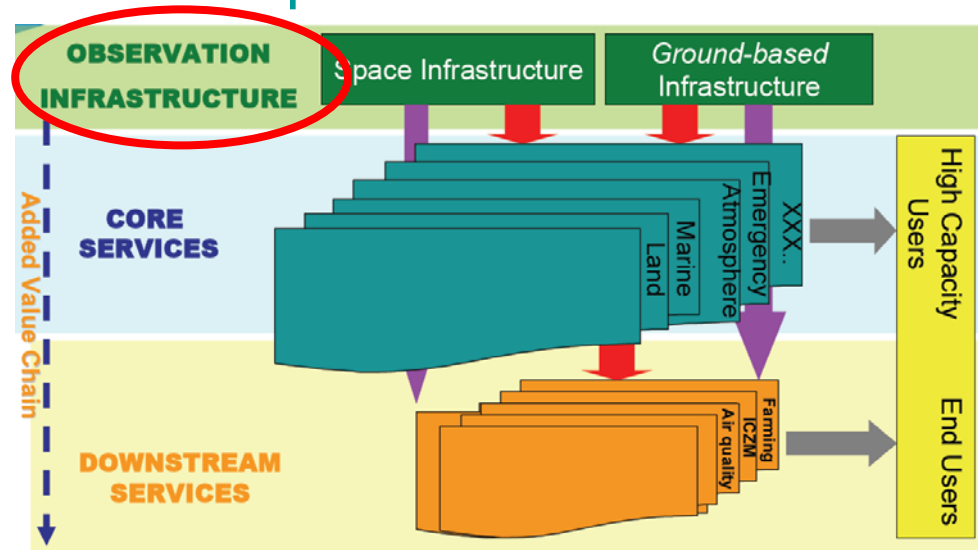
◆ Benefits for society in terms of improved

- ☞ Farming
- ☞ Environment monitoring
- ☞ Land management
- ☞ Security
- ☞ Health etc.

■ GMES Core services

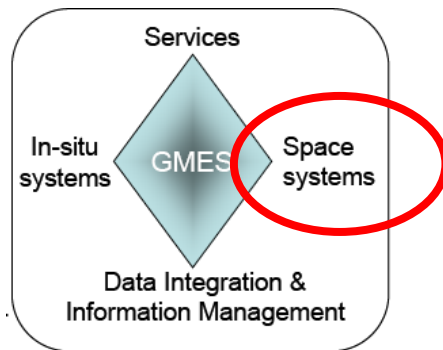
- ◆ Fast track
- ◆ Pilots

■ GMES Services require access to Observation infrastructure: EO and Insitu data



Harmonised access to EO data

- Heterogeneous Missions Accessibility (ESA HMA-I)
 - ◆ Interoperability standards for an across-missions harmonised data access
 - ◆ Provide harmonised access to EO data for GMES services via a "DAIL" (Data Access Integration Layer)
 - ◆ Interfaces based on open standards: SOA, W3C, OASIS, ISO, OGC etc.



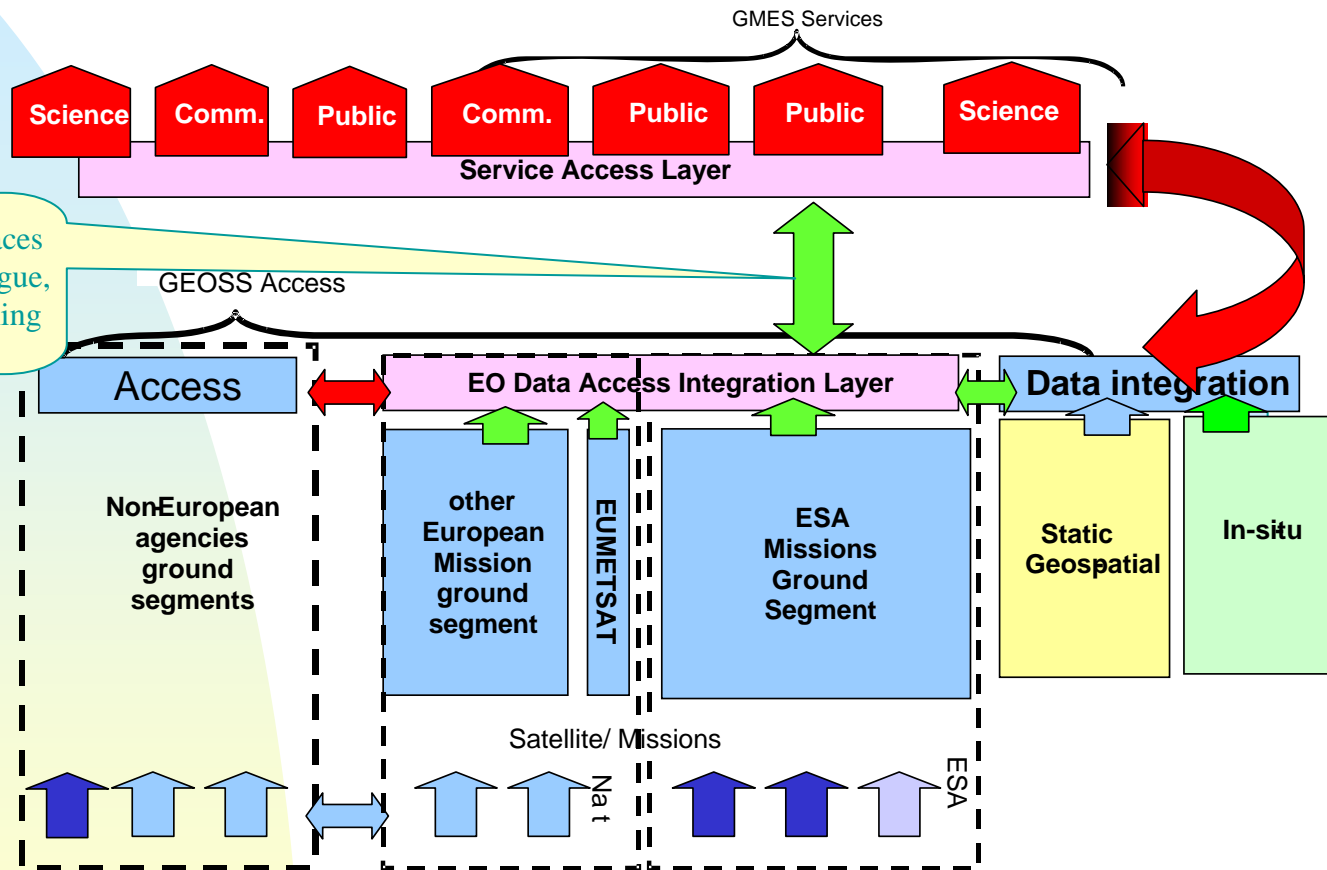
HMA Partners and GMES Contributing Missions



<i>Partner</i>	<i>Contributing Mission</i>
ASI with the support of Alcatel Alenia Spazio	Cosmo-Skymed
CNES with the support of Spot Image	Pleiades, Spot
CSA with the support of MDA	Radarsat 2
DLR with the participation of Infoterra GmbH	Terrasar
EUMETSAT	Meteo Missions
EUSC	User
ESA	ERS, ENVISAT, Sentinels



Harmonised access to EO data



Harmonised access to EO data

- Heterogeneous Missions Accessibility (ESA HMA-I)
 - ◆ Open consensus-based process:
 - ☞ ESA, CNES, DLR, EUMETSAT, ASI, MDA (CSA)
 - ☞ Participation of JRC and FAO.
 - ☞ Results published at OGC as "best practices" and as CEN Workshop Agreement.
 - ◆ Spacebel Activities:
 - ☞ Implementation of DAIL prototype based on SPACEBEL's SSE software and definition of user management, security protocols for HMA Web services.
 - ☞ In charge of ESA HMA Testbed project
 - ☞ Responsible for operational implementation of DAIL
 - ☞ Support ESA in FP7 GIGAS Support Action (for GMES, GEOSS, INSPIRE)

HMA Prototype scenario: emergency response

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Americas
Asia-Pacific
Europe
Middle East
South Asia
UK
Business
Health
Science/Nature
Technology
Entertainment

Last Updated: Wednesday, 16 August 2006, 15:22 GMT 16:22 UK

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Crisis talks on Lebanon oil spill

An action plan to tackle the massive oil spill off Lebanon's coastline caused by the conflict is due to be discussed in Greece on Thursday.



Officials from the UN, the EU and the International Maritime Organisation (IMO) are meeting to agree a way to halt the spread in the Mediterranean.

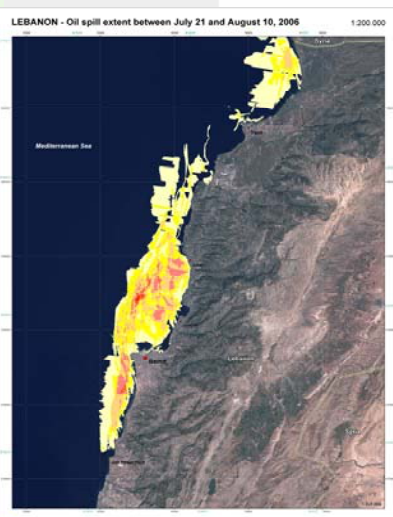
Officials have warned of an increased risk to public health

MIDDLE EAST CRISIS **In Depth**

LATEST NEWS

- ▶ Palestinian rocket kills Israeli
- ▶ Lebanese leader rejects UN court
- ▶ Rivals 'agree new Palestinian PM'
- ▶ Hamas: No recognition of Israel

FEATURES AND ANALYSIS



the sea following Israel's bombing of a power

covers 170km (105 miles) of Lebanon's coastling out to sea.

lists and health officials have warned that the direct threat to marine life and could increase t among people living in the affected areas.

up to 10 years for the affected coastline to say.

Harmonised access to EO data

- Other EO data interoperability projects
 - ◆ ESA CoMu: Multimission Mission Planning interfaces
 - ◆ EUMETSAT: MTG Phase A
 - ◆ MUSIS, MUSIS UGS (Military)
 - ◆ ESA Flexsys: access to VITO infrastructure via HMA-compliant catalogue and ordering standards.

Other activities in GMES

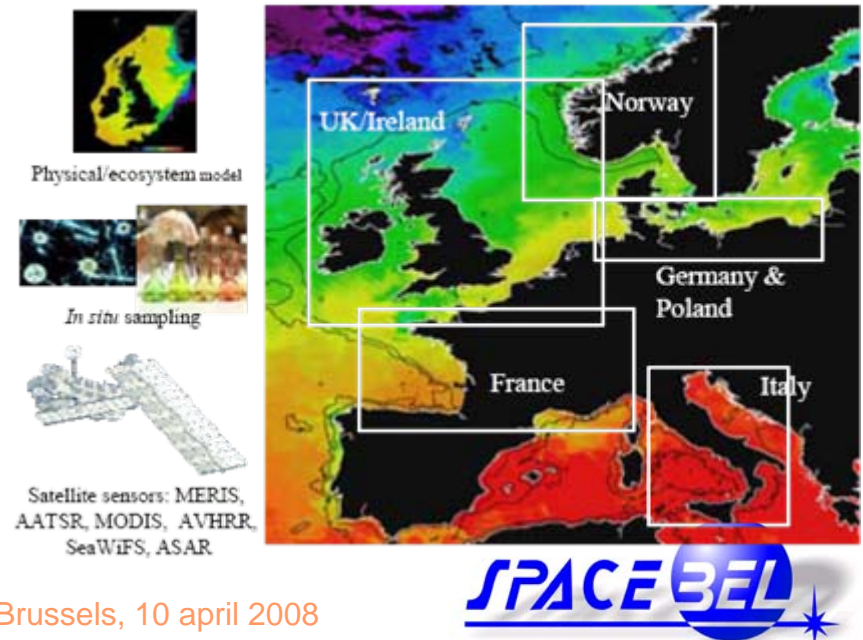
■ FP6 BOSS4GMES

- ◆ "Building Operational Sustainable Services for GMES"
- ◆ Spacebel role:
 - WP16: Analysis of reusable architecture block for FTS service architecture (with Thales)
 - WP24: Prototypes of access to FTS services (with Astrium-F)
- ◆ <http://www.boss4gmes.eu>

Other activities in GMES

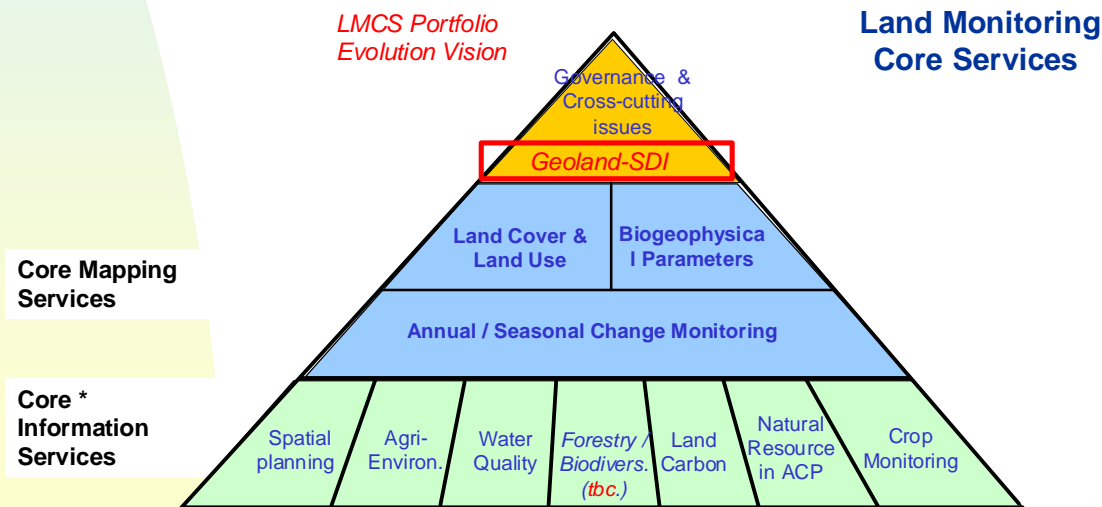
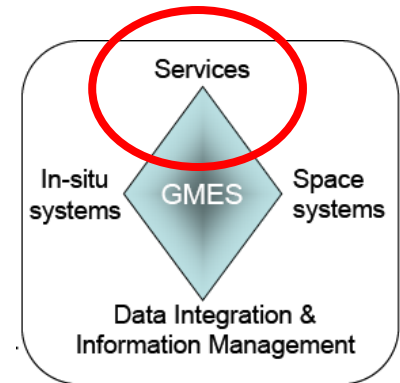
■ FP6 InterRisk

- ◆ "Interoperable GMES services for environmental risk management in marine and coastal areas of Europe"
- ◆ Role: service provision infrastructure based on Spacebel's SSE software.
- ◆ <http://interrisk.nerisc.no/>

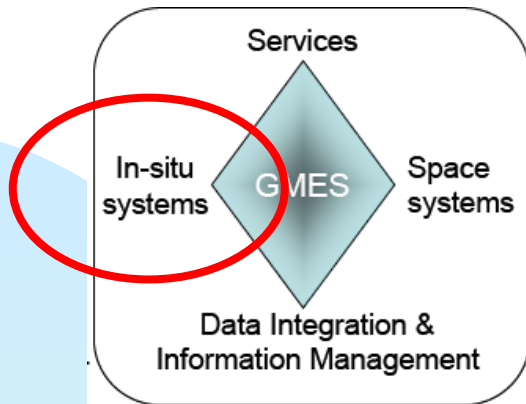


Our other activities in GMES

- FP7 GEOLAND2 (Land Monitoring Core Service)
 - ◆ Coordinator: Infoterra-G
 - ◆ Start: September 2008
 - ◆ Role SPACEBEL:
 - ☞ Portal (SDI) for access to FTS Land (LMCS) products to be deployed at VITO.
 - ☞ Derived from ESA SSE Portal.

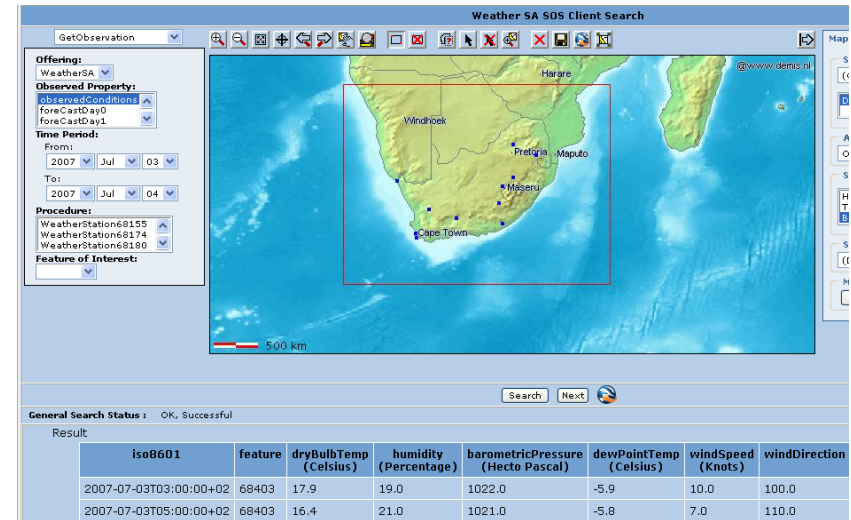


Other activities in GMES

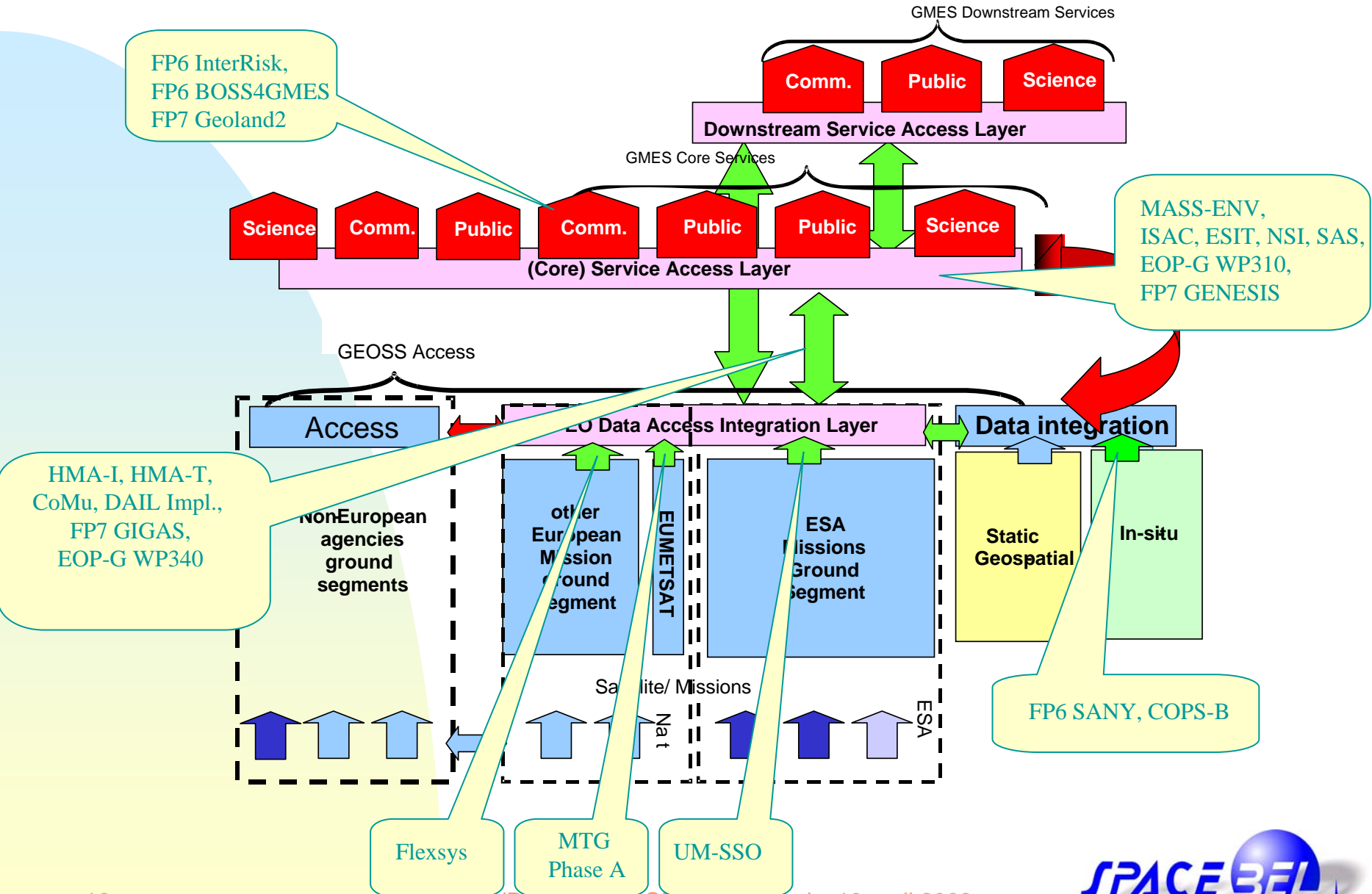


■ FP6 SANY

- ◆ Coordinator: ARC (Austria)
- ◆ "Sensors Anywhere"
- ◆ <http://sany-ip.eu/>
- ◆ Subject:
 - ☞ Harmonised access to (in-situ) sensor networks
 - ☞ Definition of standards for access to sensor networks based on OGC SWE.
- ◆ Spacebel role:
 - ☞ Subproject leader: "Decision Support Systems & Data fusion"
 - ☞ Contributes to "Architecture" subproject



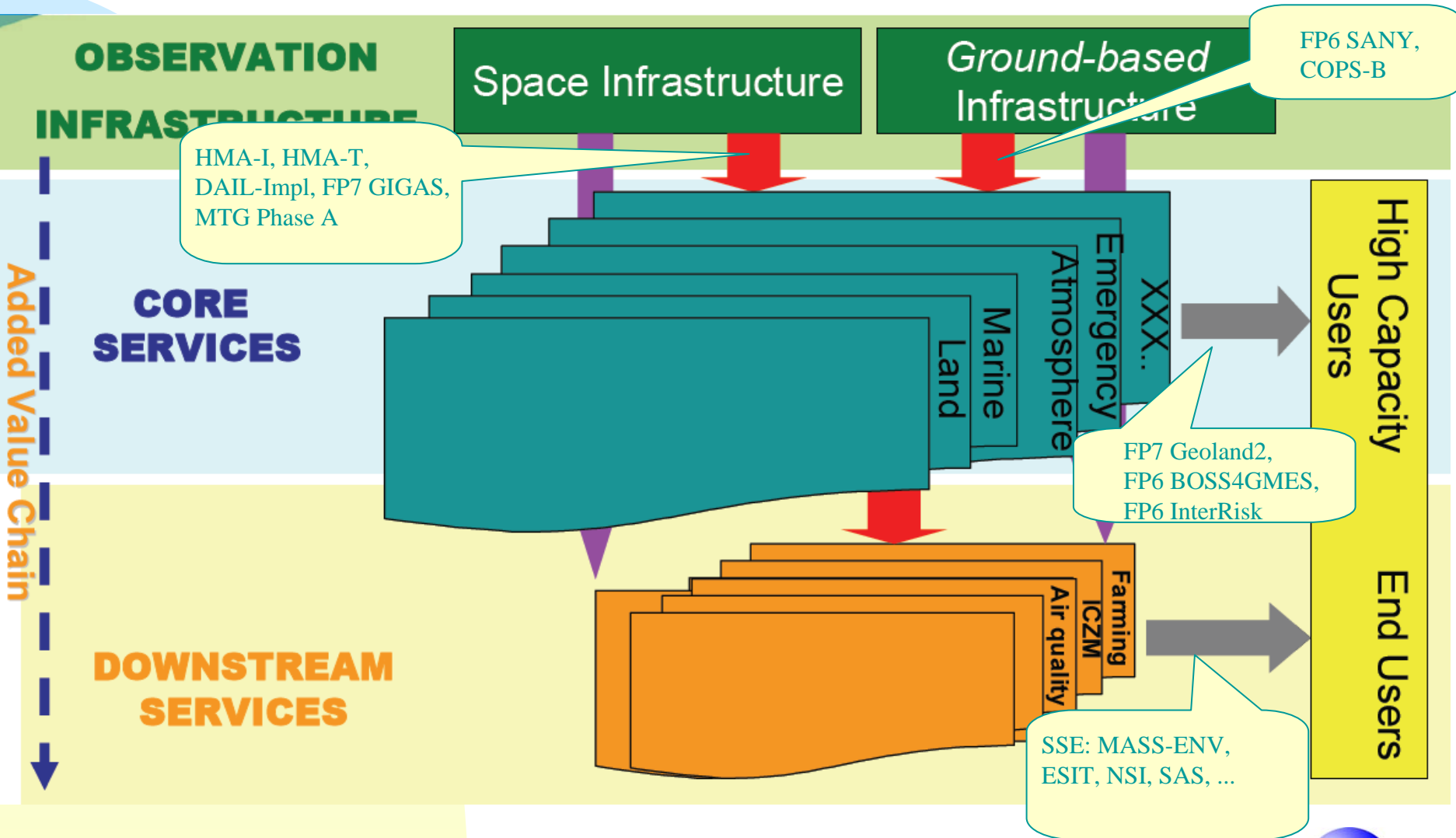
Other SPACEBEL activities in GMES



Conclusion

- EO data (and in-situ data) is start of GMES added value chain.
- GMES service deployment benefits from simplified access to EO data through HMA specifications.
- SPACEBEL:
 - ◆ Contributes as one of main players to the definition and implementation of the GMES service interfaces with the EO Ground Segments (HMA EO-DAIL)
 - ◆ Provides expertise in SOA-based interoperability in EO domain
 - ◆ Participates to several other GMES projects and supports service provision through infrastructure derived from it's SSE software)

Conclusion - SPACEBEL & GMES



More information

- HMA and SSE information
 - ◆ <http://www.youtube.com/watch?v=DvhJM2cw2T4>
 - ◆ <http://services.eoportal.org>
- Contact information
 - ◆ www.spacebel.be
 - ◆ Yves.coene@spacebel.be

