

**European Space Research
& Development**



Das FP7 Weltraum Programm: Inhalte der 2. Ausschreibung

Peter Breger

Space Research and Development Unit

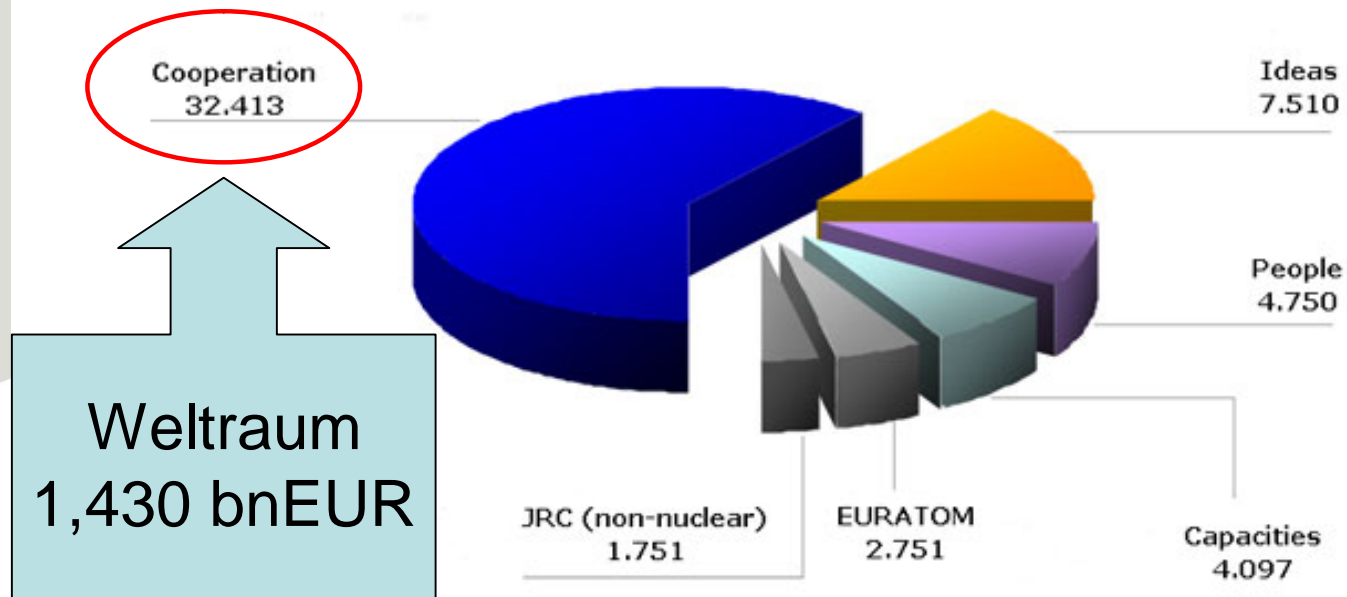


European Commission
Enterprise and Industry

FP7 Budget Übersicht

Das 7. RP ist mit einem Budget von 50,521 Milliarden Euro (ohne Euratom) ausgestattet. Seine effektive Laufzeit beläuft sich von Anfang 2007 bis Ende 2013 auf effektive sieben Jahre.

F7 Budget (in Mio. EUR)



Policy Context – Application driven

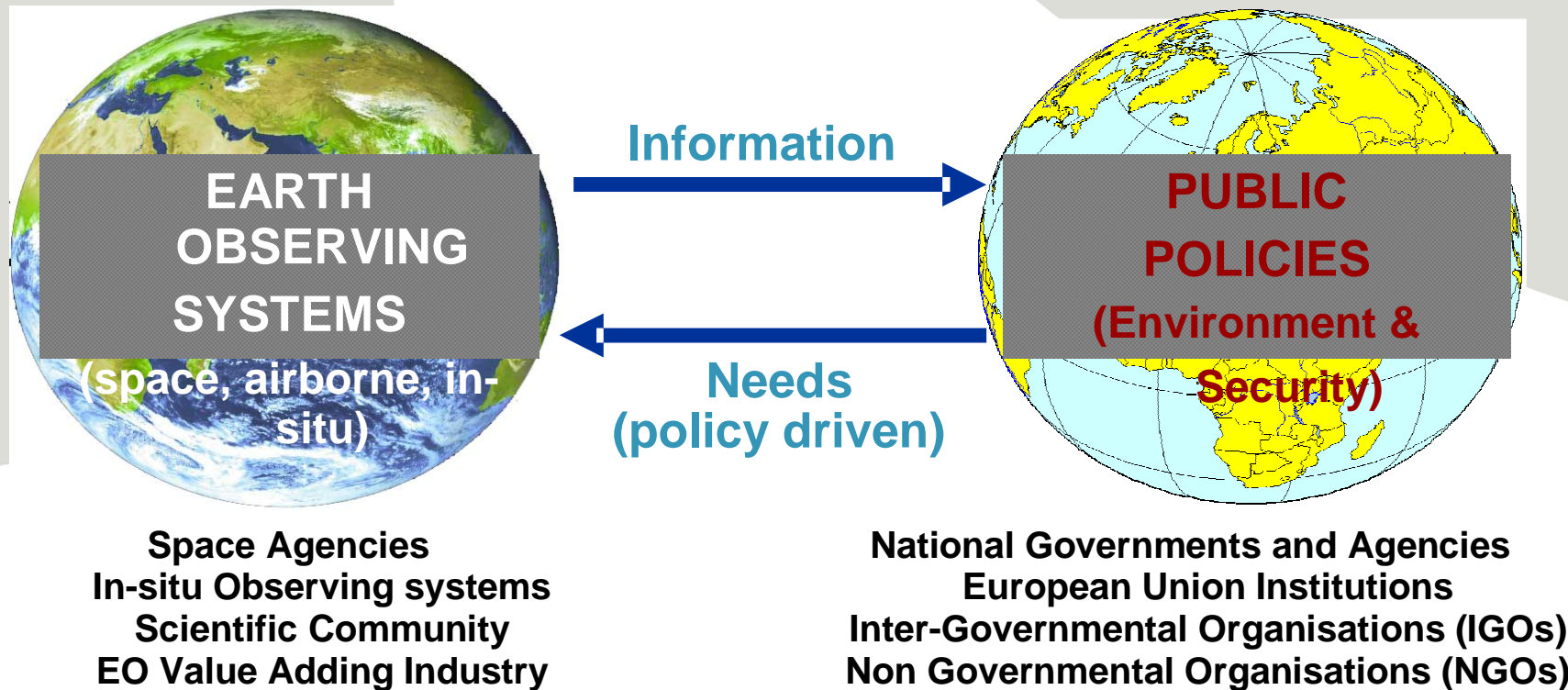
The EU Flagship activities for Space

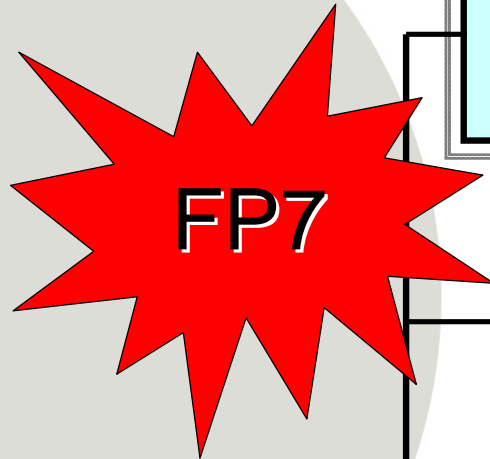
- **Galileo** – a global positioning system for Europe
 - ... public sector governance of the European GNSS programmes ...
 - ... the Commission should be fully responsible for the overall management of the programmes as the European GNSS Programme Manager...
 - ... the European Space Agency (ESA) should act as procurement agent for Galileo...
 - ... the European Community should have the ownership of all the tangible and intangible GALILEO and EGNOS assets ...
- **GMES** « Global Monitoring for Environment and Security »
 - An EU led initiative, in which ESA will implement the space component ...
 - ... and the Commission will manage actions for identifying and developing services

GMES Objectives

... started with Baveno Manifesto in 1998 ...

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.





FP7-Space

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

R&D strengthening
Space foundations

Cross-cutting issues

Space Applications (focus: GMES)

- Development of multipurpose **core services**
 - § Fast track + Pilot services (1st Space call)
 - § Pilot services in new application fields (future calls)
- Development of **downstream services (2nd Space call)**
- Coordinated data provision (**from space, in-situ**)

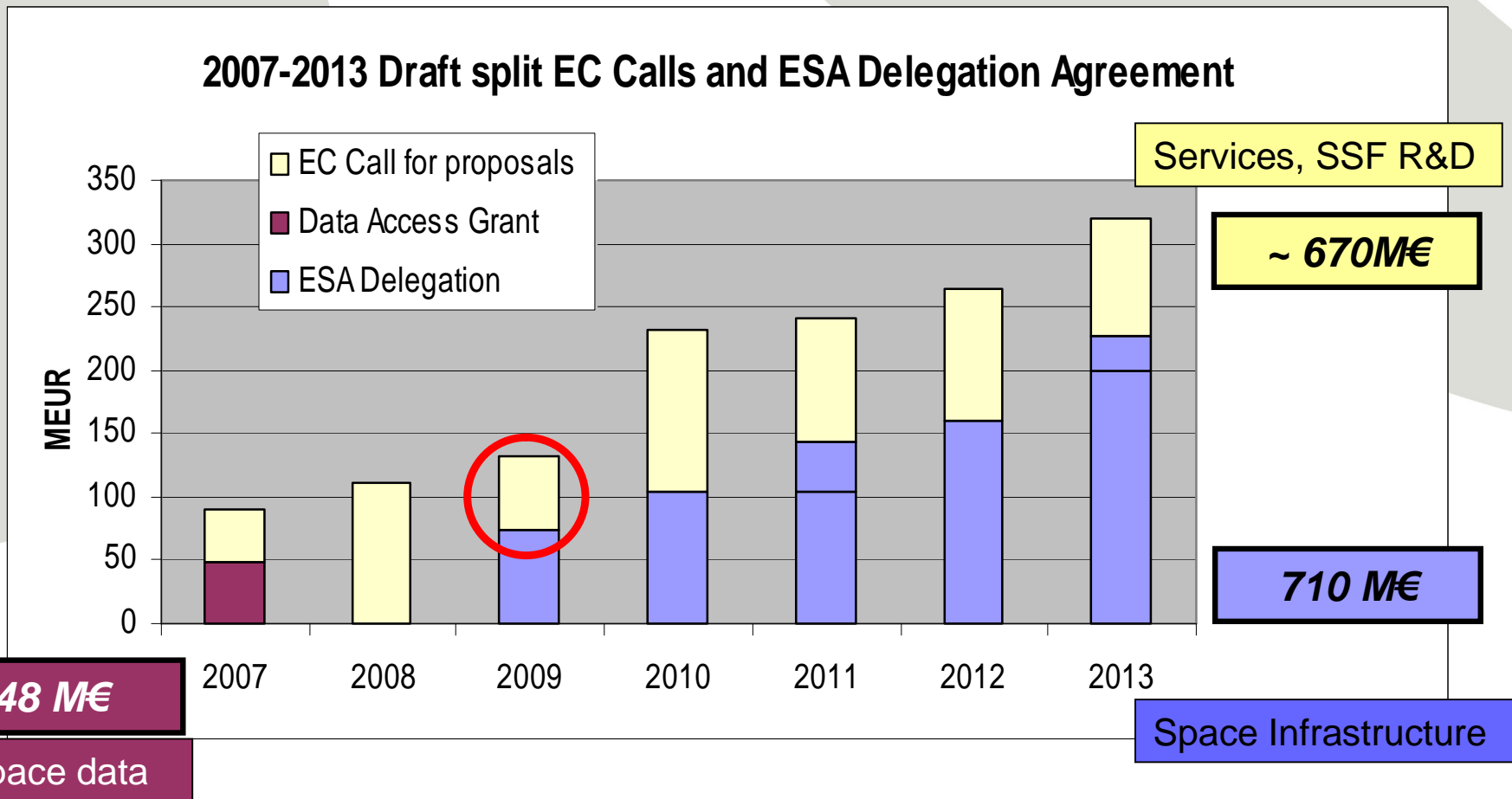
Strengthening Space Foundations

- New FP7 activity: ensure complementarity
 - § With extensive activities already undertaken by ESA/member states
 - § Enabling wider participation of different actors
- Focus on upstream research:
 - § Innovative launch/propulsion technologies
 - § Optimal preparation of scientific payloads
- And downstream research:
 - § Effective mission data exploitation (space science)
 - § Technology transfer R&D towards sustainable provision of critical components

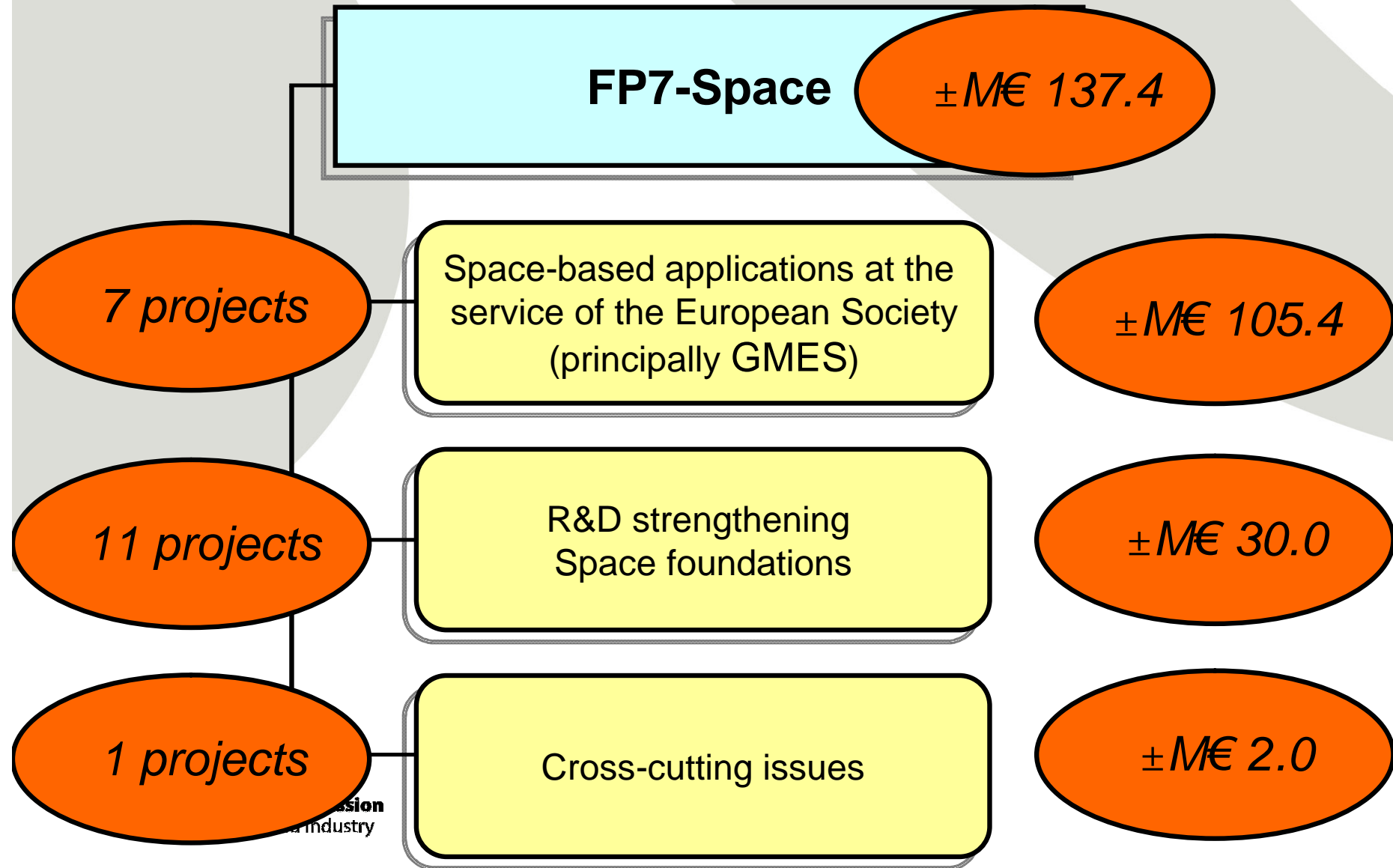
FP7 Space: % distribution at a glance

- Space-based applications at the service of European society (GMES) (85% of budget, i.e. 1.2 billion)
 - § About **30%** for services development (EC)
 - § About **10%** for data procurement (space based and in-situ) (ESA + EEA)
 - § About **45%** foreseen for developing space infrastructures (ESA)
- Strengthening Space Foundations (**15%** of budget, i.e. 0.2 billion)
 - § Upstream + downstream research

When and how will FP7 Space funding be made available?



Reminder: The 1st Space call (2007)



mission
industry

GMES: Overview

GMES – Fast-Track Services: full ranking list (indicative available amount: M€ 84.4)

Rank	Acronym	Title	Fund scheme
1	SAFER	Services and Applications For Emergency Response	CP
2	SWIFT	Supporting Awareness and Information dissemination for GMES Fast Track services	CSA
3	MyOcean	Development and pre-operational validation of upgraded GMES Marine Core Services and capabilities	CP
4	Geoland2	Towards an operational GMES Land Monitoring Core Service	CP

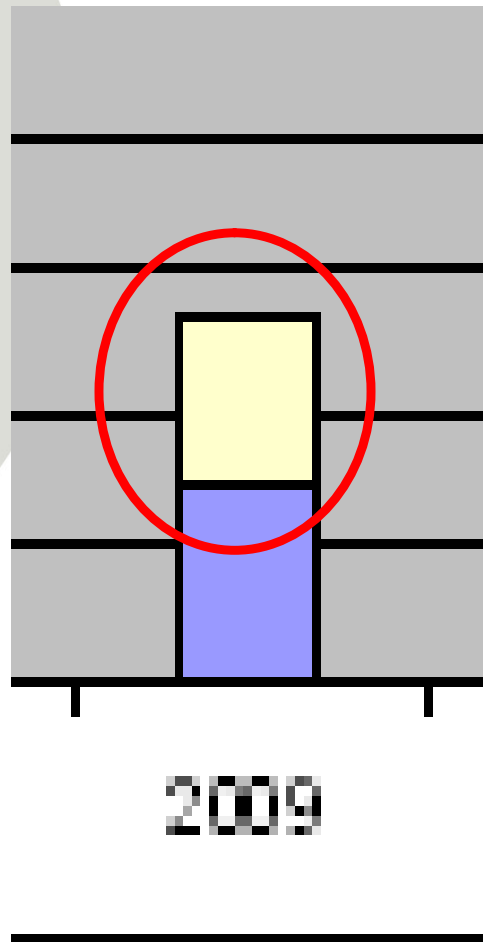
GMES – Pilot Services: full ranking list (indicative available amount: M€ 21.0)

Rank	Acronym	Title	Fund scheme
1	MACC	Monitoring Atmospheric Composition and Climate	CP
2	G-MOSAIC	GMES services for Management of Operations, Situation Awareness and Intelligence for regional Crises	CP

SSF: Overview

Rank	Acronym	Title	Topic	Fund scheme
1	HPH.com	HeliconPlasmaHydrazine.COmbinedMicro	Transport	CP
2	ProVisG	Planetary Robotics Vision Ground Processing	Science	CP
3	HiPER	High Power Electric propulsion: a Roadmap for the future	Transport	CP
4	GRASP	Green Advanced Space Propulsion	Transport	CP
5	AEROFAST	AEROCapture for Future spAce tranSPorTation	Transport	CP
6	HAMLET	Human Model MATROSHKA for Radiation Exposue Determination of Astronauts	Science	CP
7	SOTERIA	SOLar-TERrestrial Investigations and Archives	Science	CP
8	ORPHEE	Innovative propellants in hybrid propulsion technology and its applications in space transportation	Transport	CP
9	STAVE	Space Transportation Assets Valorisation in Europe	Transport	CSA
10	AGAPAC	Advanced GaN packaging	Technol.	CP
11	ULISSE	The USOCs KnowLedge Integration and dissemination for Space Science Experimentation	Science	CP

The Second FP7 Space Call 2008-2009



EUR 50 million
for
downstream
services

- GMES
- SSF
- Cross-cutting

The 2nd Space call



NEW

- Publication: 3 September 2008
- Submission deadline: 4 December 2008
- Publication on our DG ENTR website
ec.europa.eu/enterprise/space_research
- and Cordis website
cordis.europa.eu/fp7/home_en.html

Second call budget (1)

	2009 EUR million ³⁹	total
Call FP7-SPACE-2009-1 <u>Activity 9.1</u> Space-based applications at the service of European Society : <ol style="list-style-type: none"> 1. <u>Stimulating the development of downstream GMES services</u> 2. <u>Monitoring of climate change issues</u> 3. <u>Integration of SatCom / SatNav with GMES</u> 	33.5	33.5
Call FP7-SPACE-2009-1 <u>Activity 9.2</u> Strengthening of Space foundations: <ol style="list-style-type: none"> 1. Space Exploration 4. Support to new EU Member States / Associated States 	5	14
Call FP7-SPACE-2009-1 <u>Activity 9.2</u> Strengthening of Space foundations: <ol style="list-style-type: none"> 2. Space Technologies 	9	

Second call budget (2)

Call FP7-SPACE-2009-1 <u>Activity 9.3</u> Cross- cutting activities 2. International Cooperation	3	4
Call FP7-SPACE-2009-1 <u>Activity 9.3</u> Cross- cutting activities 5. European Space Policy Studies	1	
ACTIVITIES NOT SUBJECT OF A CALL FOR PROPOSALS: 1 Access to in-situ observation data (EEA) (re. 9.1) 2 ESA Delegation Agreement (re. 9.1)	3 68	71

FP7-Space

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

**R&D strengthening
Space foundations**

Cross-cutting issues

**SPA.2009.1
(3 topics)
33.5MEur**

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

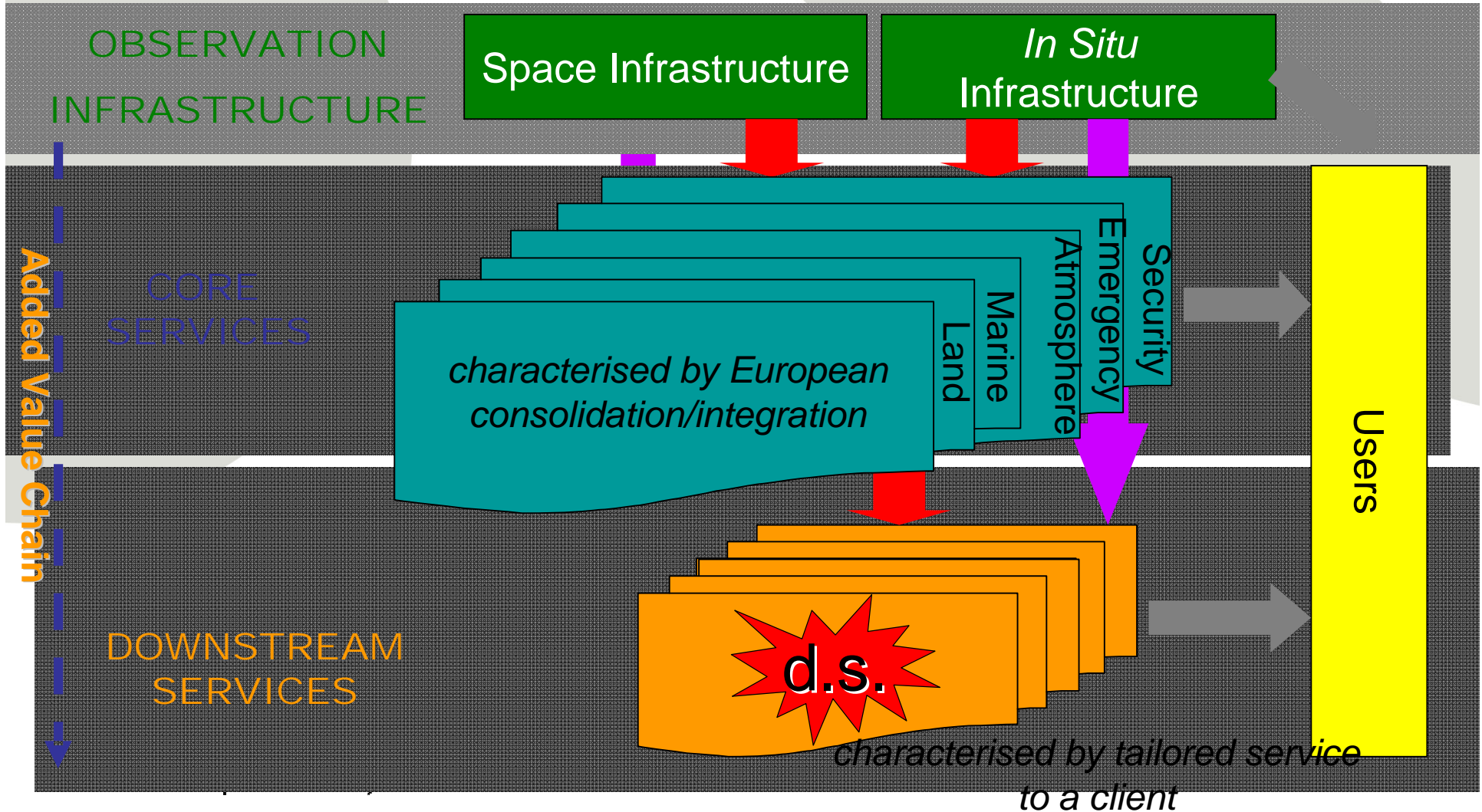
- Development of downstream services
 - § Focus on service functionality
 - § Build the 'GMES economy' – service to a client
- Consolidation of monitored climate change issues
 - § Consolidate essential climate variables (ECV)
- Integrating usage of Earth Observation with SatCom and SatNav
 - § particularly for prevention and management of emergencies

Topic SPA.2009.1.1.01 – Stimulating the development of *downstream GMES services*

- ... to develop next generation service lines ...
- ... between the multi-purpose *core services* and the user client ...
- ... tailored for specific user needs ...
- ... to be financially self-supportive at the end of the project ...

- *Collaborative Projects* EC contribution of EUR 1 to 3 million with upper eligibility limit of EUR 5 million
- (also small *Coordination and Support Actions*)

How do downstream services fit into the overall GMES architecture?



Topic SPA.2009.1.1.02 –

Monitoring of climate change issues (extending *core service* activities)

- ... services already provide valuable product portfolios...
- ... enabling incorporation of the monitored essential climate variables...
- ... generation of time series of observation datasets and re-analyses of past observational data ...
- ... enabling adequate descriptions of the status and evolution of the Earth system components ...

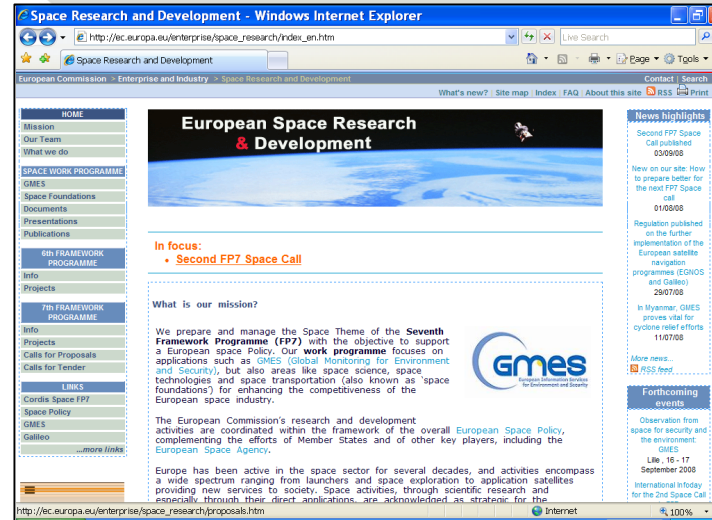
- *Collaborative Projects* EC contribution of EUR 1 to 3 million with upper eligibility limit of EUR 5 million
- (also small *Coordination and Support Actions*)

Topic SPA.2009.1.1.03 – Integration of SatCom / SatNav with GMES

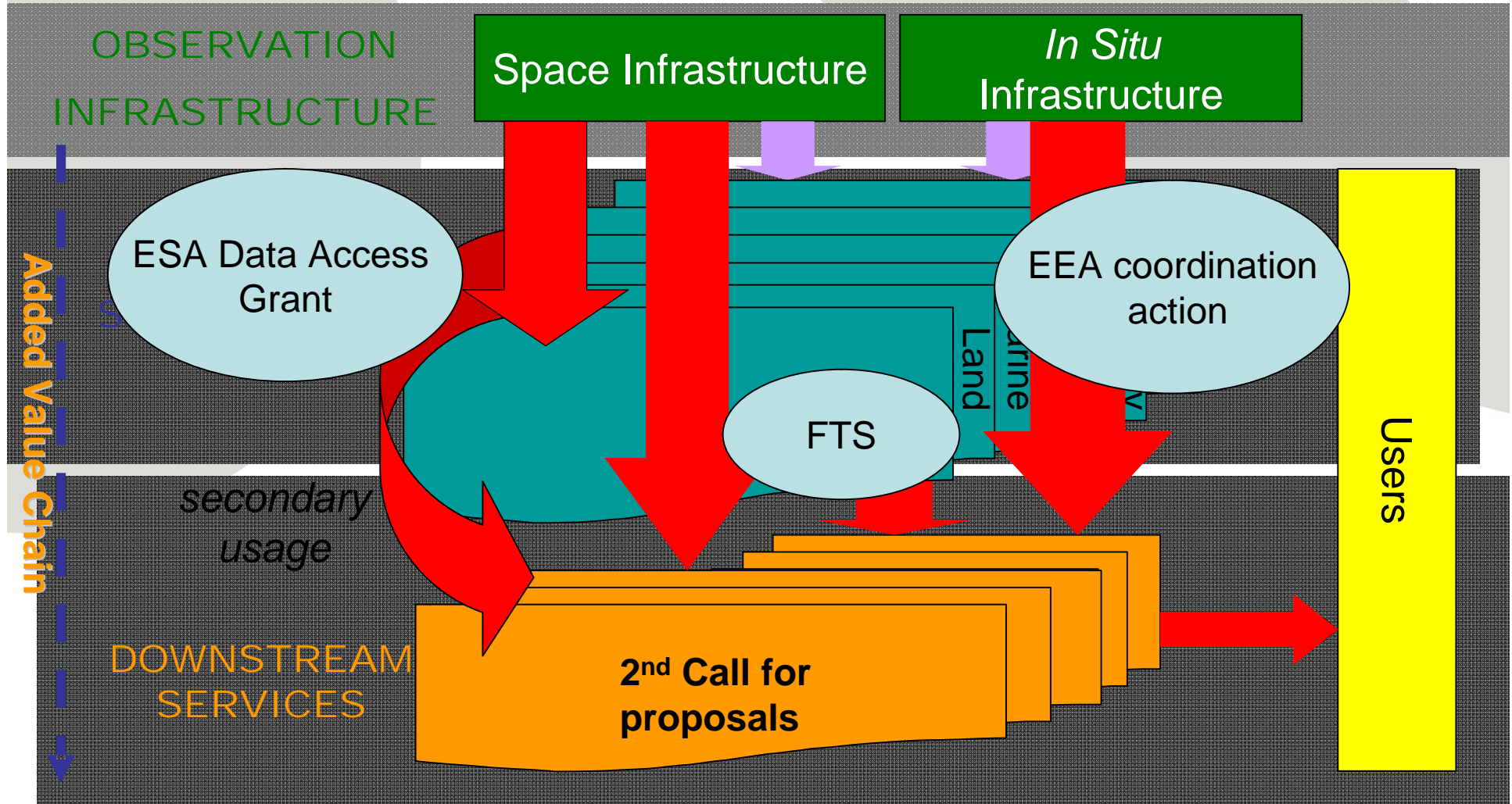
- ... service platform, with the objective of validating the technological concepts ...
 - ... validation of specific test-beds, based on real situations ...
 - ... specific *user-driven* development of services ...
 - ... impact the quick and inexpensive access to real-time EO data ...
-
- *Collaborative Projects* EC contribution of EUR 1 to 3 million with upper eligibility limit of EUR 5 million
 - (also small *Coordination and Support Actions*)

Build on the existing GMES capacities

- Core Services –
FP6, FTS, Pilots ...
- Secondary usage of Space Data delivered to FTS and Pilots
- NOTE: please consult DG Enterprise website of Space Research & Development for updates of capacities



How can downstream services draw benefit from existing GMES actions?



FP7-Space

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

**SPA.2009.2.(1 & 4)
5 MEur**

R&D strengthening Space foundations

**SPA.2009.2.(2)
9 MEur**

Cross-cutting issues

9.2 Space Foundations (SSF)

- Research in Space Exploration
 - § Upstream high risk research aimed at improving capabilities for exploration
- New concepts in Space Technologies and Critical Components
 - § European strategic non-dependence Research in Space Exploration
- Support to NMS and Associated States
 - § Fostering international cooperation and addressing niche markets

Topic SPA.2009.2.1.01 – Space Exploration

- ... capability for interplanetary travel ...
 - ... access to planets surfaces ...
 - ... capability to move, to select and collect and finally return samples ...
 - ... perform their analysis in the frame of Space Exploration activities...
-
- *Collaborative Projects* EC contribution of EUR 1 million with upper eligibility limit of EUR 2 million
 - (also small *Coordination and Support Actions*)

Topic SPA.2009.2.2.01 – Space technologies

- ... emphasis is on the expected medium term impact for Europe to develop or regain the capacity to operate independently in space ...
- ... specifically : Digital components, Microwave components ...
- ... space evaluation and qualification ...
- ... utilisation of commercially avail. technologies ...

- *Collaborative Projects* EC contribution of EUR 1 million with upper eligibility limit of EUR 2 million
- (also small *Coordination and Support Actions*)

Topic SPA.2009.2.4.01 – Support to new EU-Member States/Associated States

- ... establishment of strong and long-term relations ...
- ... future potential for a continuous and sustainable contribution in major on-going and planned European space programmes ...
- *Coordination and Support Actions* with EC contribution upper eligibility limit of EUR 1 million

FP7-Space

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

R&D strengthening Space foundations

Cross-cutting issues

SPA.2009.3.2

3 MEur

SPA.2009.3.5

1 MEur

9.3 Horizontal/cross-cutting issues

- SPA.2009.3.2 International cooperation
 - § Special attention to **GMES Africa**
 - Coordination actions to support EU-AU Consultation process
- SPA.2009.3.5 Studies in support of European Space Policy
 - § Focussing on implementation and follow-up of ESP
 - Support Actions studying Socio-economic dimension of activities and priorities

GMES and Africa, guidelines for CSAs (1):

- **To prepare the ground for the implementation of the Action Plan**, along lines of declaration of Lisbon on *GMES and Africa*
 - Ø Close cooperation with the EU-AU Working-group on *GMES and Africa* (DG-ENTR GMES Bureau will be the focal point)
- **To involve African user communities**
 - Ø Supporting on-going initiatives in reaching a regional or pan-African dimension
 - Ø Networking of African and European centres of excellence

GMES and Africa, guidelines for CSAs (2):

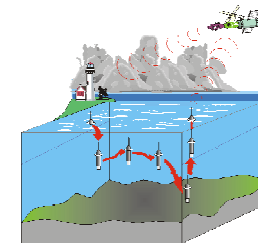
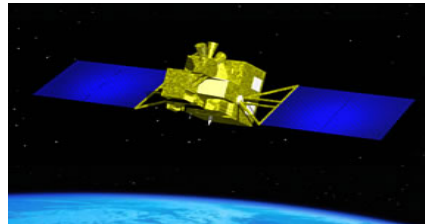
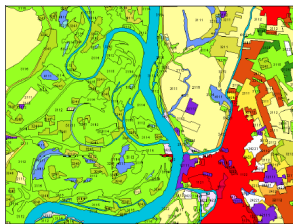
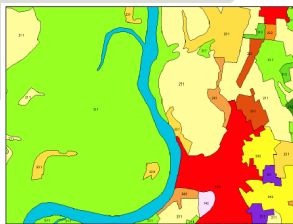
- **Exchange of know-how and requirements between Africa and Europe**
 - ∅ **Focus** on pre-requisites for deployment of services, considering the underlying infrastructure and expertise that will be needed to access and operate those services (capacity building)
 - ∅ **Thematic areas:** monitoring of Natural resources, natural hazards, water management, desertification and preparing for climate change, prevention of conflicts, food security, monitoring of marine and coastal waters.

Danke für Ihre Aufmerksamkeit

- Peter Breger
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European Space Research
& Development

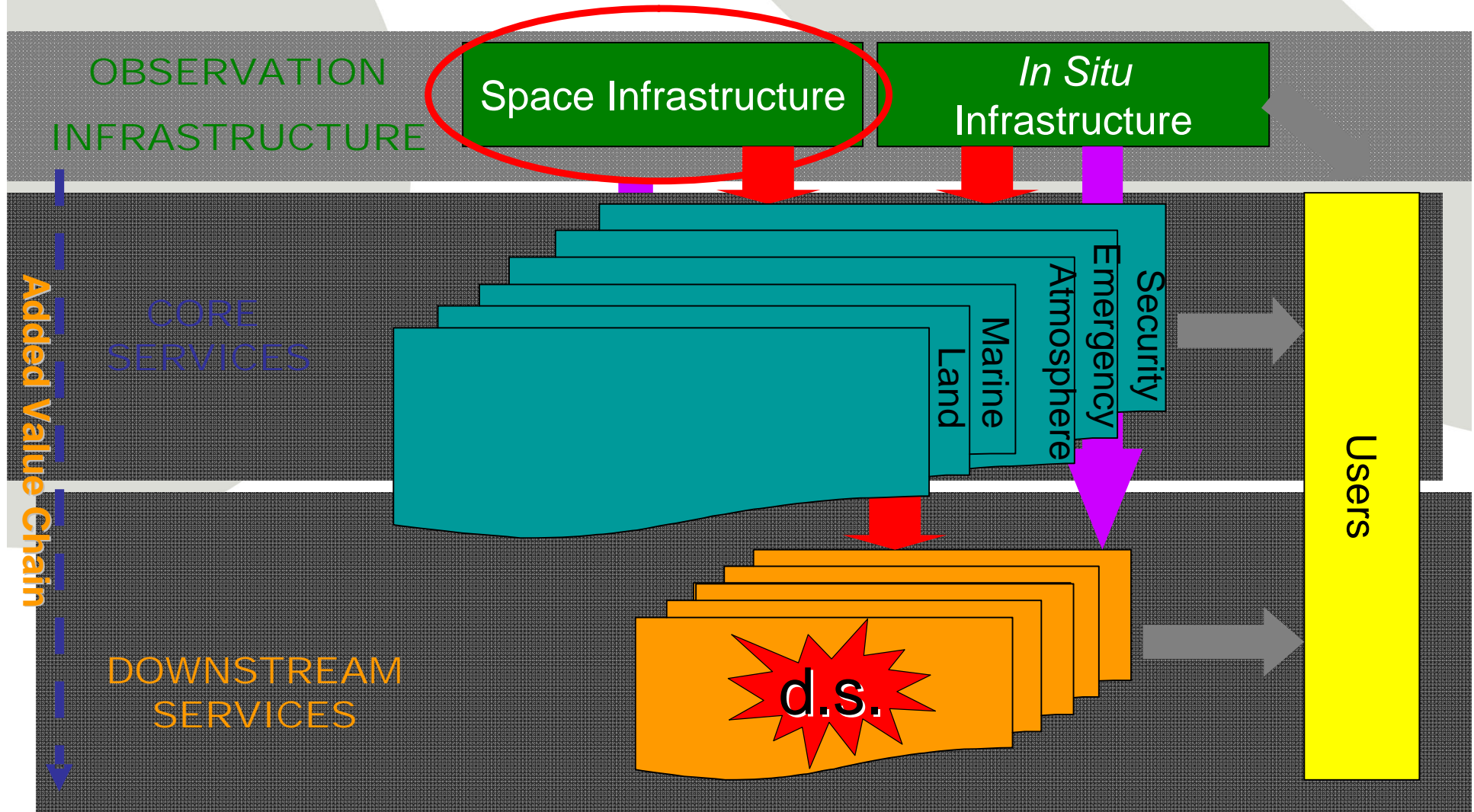
FP7 « SPACE » Support to GMES Space Component Programme (via ESA)



FP7 funding in ESA ITTs

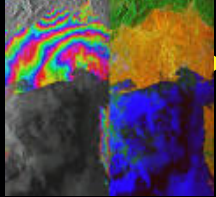
- Supporting the GMES Space infrastructure
 - § EC money managed by ESA in line with the EU-ESA delegation agreement
 - § 45% of FP7 GMES budget (EUR 624 million 2007-2013 in net terms)

How do ESA ITTs fit into the global GMES architecture?

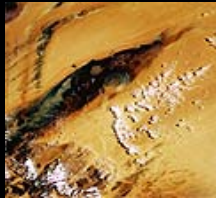


GMES ESA MISSIONS

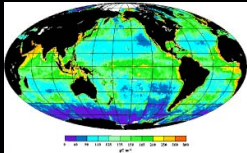
5 Lines of missions - Sentinels



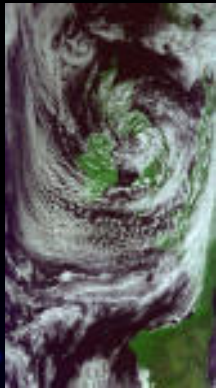
- Sentinel 1** – SAR imaging
- All weather, day/night applications, interferometry



- Sentinel 2** – Multispectral imaging
- for land applications, e.g. urban, forest, agriculture, etc.



- Sentinel 3** – Ocean & Land monitoring
- Wide-swath ocean color, vegetation, sea/land surface temperature, ocean altimetry



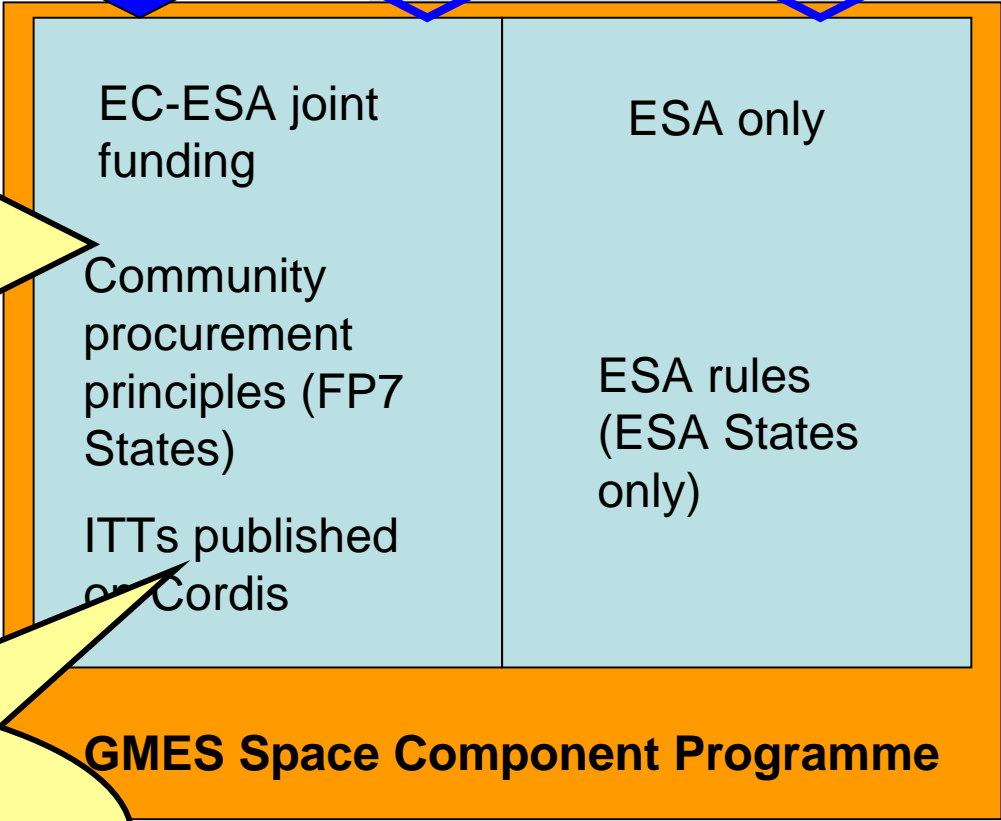
- Sentinel 4** – Geostationary atmospheric
- Atmospheric composition monitoring, trans-boundary pollution

- Sentinel 5** – Low-orbit atmospheric
- Atmospheric composition monitoring

**FP7 funding
(710M€)**

**ESA Member States funding
(~1.7 B€)**

- Contains:
- S1,S2,S3 Subcontracts
 - PDGS Development/
Pre-Operations
 - Launching activities
 - Accompanying Activities



See
ec.europa.eu/enterprise/space_research

ec.europa.eu/enterprise/space_research

Space Research and Development - Microsoft Internet Explorer provided by European Commission

Address: http://ec.europa.eu/enterprise/space_research/tenders.htm

Enterprise and Industry

European Commission > Enterprise and Industry > Space Research and Development

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European Space Research & Development

Call for Tenders

Companies from FP7 participating countries will have the opportunity to participate in best practise procurements by [European Space Agency \(ESA\)](#) in the context of [GMES](#) (Global Monitoring for Environment and Security) space component activities. [Read more...](#)

Invitations to Tender (ITTs) intended, published, or



See also Cordis Space web-site: http://cordis.europa.eu/fp7/cooperation/space_en.html

News highlights

- GMES to support ocean carbon cycle research
06/05/08
- In Beijing, Sino-European Earth Observation programme is extended
28/04/08
- Sentinel-2 contract signed on GMES environment satellite
18/04/08
- New European Commission video: Developing space systems to the benefit of us all

Enterprise & Industry, Space unit, 17 April 2008

More European Space Research and Development news...

Listings of past, current and future Invitations to Tenders (ITT)

Title	Status	Industry ITT	EMITS No.	Issuing Entity	ITT open from	to	Link to EMITS
S-1 - Tile and Antenna Thermal Hardware	Closed	08_DSFR.001	AO40096	EADS-D			http://emits.esa.int/emits/owa/emits_external.showsum?top1=3133&user=Anon
S-1 - Data Storage & Handling Assembly (DHSA)	Closed	07_ALSR.040	AO30106				
S-1 - Tile and Antenna RF Harness	Closed	08_DSFR.002	AO4010				
S-1 - Power Control and Distribution Unit (PCDU)	Open	07_ALSR.026	AO3010				
S-1 - Central Antenna Power Supply (CAPS)	Open	07_ALSR.027	AO3011				
S-1 - Spacecraft Mechanical Support Equipment (S/C MGSE) [S1-35]	Open	07_ALSR.045	AO3011				
S-1 - S/C 1553 Harness	Open	08_ALSR.114	AO3012				
S-1 - S-band suitcase	Open	08_ALSR.106	AO3012				
S-1 - Payload Data Handling & Transmission EGSE (PDHT EGSE) (S1-30)	Open	07_ALSR.047	AO3011				
S-1 - Power Supply SCOE (PSS) and COTE Section [S1-31]	Open	08_ALSR.003	AO3011				
S-1 - Safe Mode Software (SMSW)	Intended	07_ALSR.044					
S-1 - SAS Test Facility	Intended						
S-1 - S/C DC and Pyro Harness	Intended			TAS-I Rome			
S-1 - S/C RF Harness	Intended			TAS-I Rome			
S-1 - SAR Antenna Containers [S1-54]	Intended			EADS-D			
S-1 - SAR Antenna Handling & Integration MGSE [S1-55]	Intended			EADS-D			
S-1 - SAR Antenna Test Adapters & Deployment Test Device [S1-56]	Intended			EADS-D			

- Title
- Status (closed,open,intended)
- Industry ITT no. « 08-<NAME>.nnn »
- EMITS No. « AOnnnnn »
- Tendering Entity
- Open / close date
- Link to ESA's tender information

https://gmesfp7emits.esa.int

GMES Invitation To Tender System - Microsoft Internet Explorer provided by European Commission

https://gmesfp7emits.esa.int/ Certificate Error Google

File Edit View Favorites Tools Help

Google Search Web 68 blocked

GMES Invitation To Tender System

 **esa**

**Invitations to Tender for
the GMES Programme**



Invitations to Tender open to companies belonging
to countries participating to the
Framework Program 7 of the European Commission

Each bidder will need to register in the ESA EMITS service (<http://emits.esa.int>)
then select: HOW TO DO BUSINESS WITH ESA, then REGISTERING AS) in order to
be allowed to submit an offer.

Companies from ESA Participating States shall use the ESA EMITS system.

Due to the fact that the registration process might take a couple of weeks in

start Internet 100% 10:51

How to deal with ITTs (1)

- First register at EMITS – one or two places
 - § <https://gmesfp7emits.esa.int>
 - For generic information (very fast)
 - § <http://emits.esa.int>
 - To register as an ESA tenderer (takes few weeks)

How to deal with ITTs (2)

- Always double check eligibility in the letter of invitation
- It is mandatory to register with EMITS
 - § The resulting bidder code is necessary to submit an offer - It is mandatory to register with EMITS
- It is highly advisable to register as a potential tenderer with the tendering entity
 - § Thales Alenia Space, Astrium...

**European Space Research
& Development**



The FP7 Space Programme

Einige rechtliche Neuerungen in FP7



European Commission
Enterprise and Industry

New aspects (1) – PIC/URF/LEAR

- A centralised registration code for all participants in FP7 grants
 - § all organisations (legal entities) assigned a Participant Identification code (PIC)
 - § obtainable from central Unique Registration Facility (URF)
 - § can be entered in electronic submission
 - § PIC ó legal and financial information of organisation
 - § Legal Entity Appointed Representative (LEAR) within your organisation
 - § see CORDIS Website

New aspects (2) – funding rates

- R&D funded up to 50% (and for SMEs, non profit public bodies, secondary and higher education establishments and research organisations – even up to 75%)
- Demonstration funded up to 50%
- Other activities incl. management up to 100%

New aspects (3) – One pre-financing

- at start for whole duration
- interim payments based on financial statements (EC contribution = amount justified & accepted * funding rate)
- retention = 10%
- Final payment

New aspects (4) - certification

- audit certificate needed on financial statements once cumulative EC contribution received > 375kEur
- alternative: certificate on the methodology can be obtained,
 - § personnel costs and overheads (waives above certification), or
 - § average personnel cost usage in above certification

New aspects (5) – Guarantee fund

- 5% of EC contribution is retained at pre-financing stage and paid into this guarantee fund
- to insure against financial losses in project
- interest generated by fund should cover the risks, so expect that 5% paid out at end of project

New aspects (6) – RSFF Finance Facility

- To support innovative companies of any size and ownership implementing research, development and innovation projects by improving their access to **loan finance**
- “**First come, first served**”: RSFF is a demand-driven instrument; projects will **not** be selected through calls for proposals (opposite to the usual procedure for FP 6/7 grant funding)
- Eligible projects must also be considered **creditworthy** by the EIB in order to receive financing under the RSFF
- see DG RTD Unit B-04: Regions of Knowledge and Research Potential/ RSFF Sector Team