The 7th Framework Programme
NOAA brown bag seminar

**Delegation of the European Commission
in Washington DC
Science, Technology and Education
Dr. Astrid-Christina Koch**
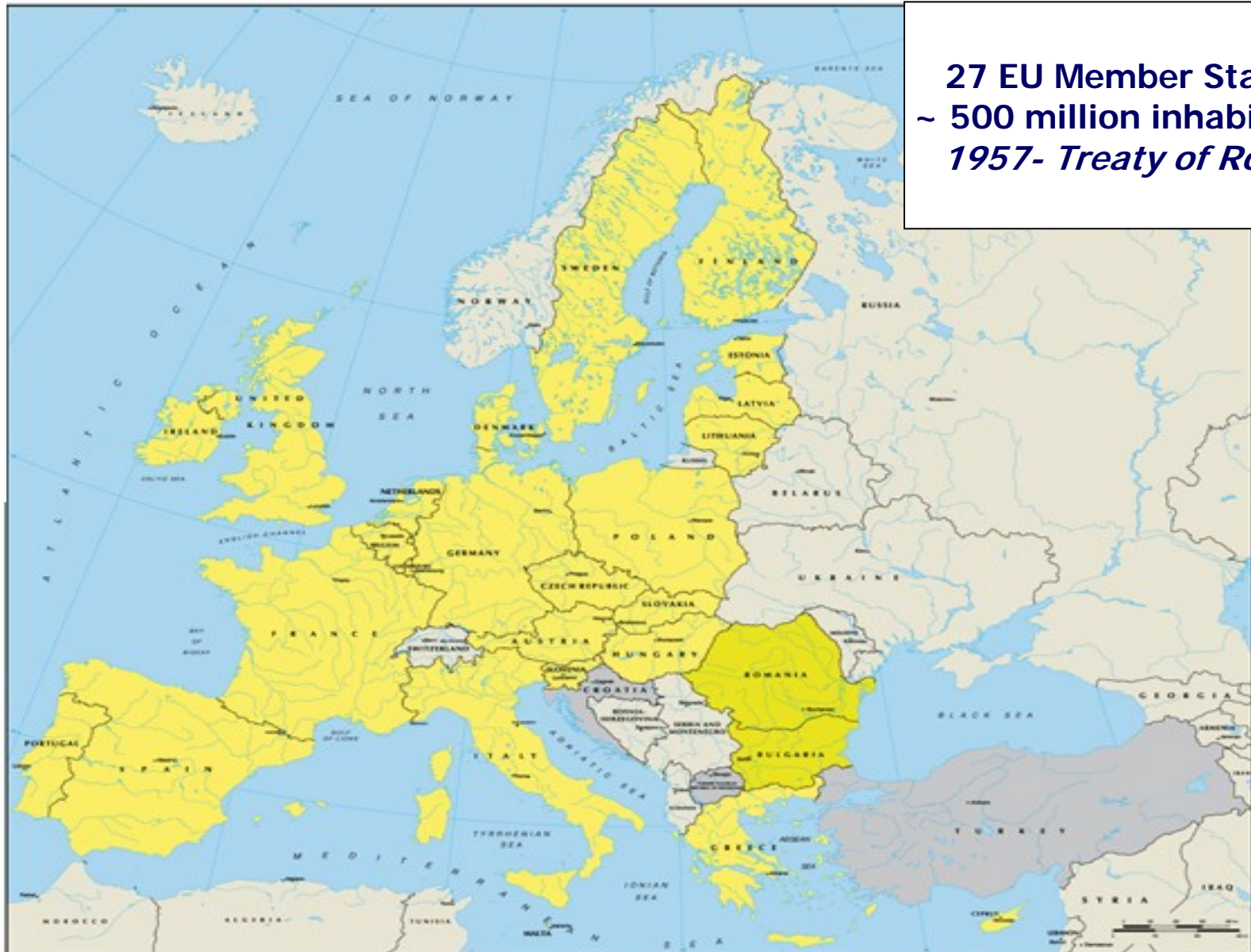
SEVENTH FRAMEWORK
PROGRAMME

Outline

➢ Background

➢ International Cooperation

➢ FP 7 (2007-2013)

➢ Environment

➢ Space & Security

THE EUROPEAN UNION

27 EU Member States
~ 500 million inhabitants
1957- Treaty of Rome

The European Union

➢ **The first economic institutions were based on energy (such as coal and nuclear), industry (such as steel) and agriculture.**

➢ **Today, progress in Europe depends on knowledge and innovation (the Lisbon process) including the bio-sciences.**

➢ **The concept of an European Knowledge Based Economy is emerging.**

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PROGRAMME

EU research: the story so far

1952: ECSC treaty; first projects started March 1955

1957: Euratom treaty; Joint Research Centre set up

1983: ESPRIT programme

1984: First Framework Programme (1984-1987)

1987: 'Single European Act' – science becomes Community responsibility; Second Framework Programme (1987-1991)

1990: Third Framework Programme (1990-1994)

1993: Treaty on European Union; role of RTD in the enlarged EU

1994: Fourth Framework Programme (1994-1998)

1998: Fifth Framework Programme (1998-2002)

2000: European Research Area

2002: Sixth Framework Programme (2002-2006)

2007: Seventh Framework Programme (2007-2013)

FP7 principles

- Scientific excellence

- Transnational cooperation

- Public calls, peer review, competitive selection

- Cost-sharing

- Participants own the results

EU-U.S. Science & Technology Agreement

> ➢ 1998   EU – U.S. Science and Technology
>
>   Agreement was signed
>
> ➢ 2003   Renewal of S&T Agreement for five years
>
> ➢ 2008   Renewal of S&T Agreement
>
>   All Themes of FP7 to be included

➢ Joint Consultative Group (JCG) is responsible for deepening the intergovernmental cooperation through high-level meetings

Mechanisms for Cooperation

➤ **Coordinated Calls / Joint solicitations**

➤ Cooperation based on reciprocity

➤Joint projects by: Coordinated Calls /Dedicated Calls

Twinning/Clustering

➤ Task forces

➤ Joint organisation of workshops and seminars

➤Exchange of scientists and technical experts

➤Exchange of evaluators for peer review

➤Network building though ERA-LINK USA (European

Researchers Abroad) under the umbrella of EURAXESS

Priority Areas for Cooperation

- Current: Health, Biotechnology, Materials, Nanotech
  New: Energy, Security, Space, Environment
- Strong ongoing S&T Collaboration in many areas

➢ No Top-Down approach to prioritization but need to ...

✓ Coordinate with MS Science Counselors
✓ Identify obstacles to cooperation (eg IPR)
✓ Better coordinate respective funding schemes

FP7 | The Structure

Cooperation – Collaborative research

Ideas – Frontier Research

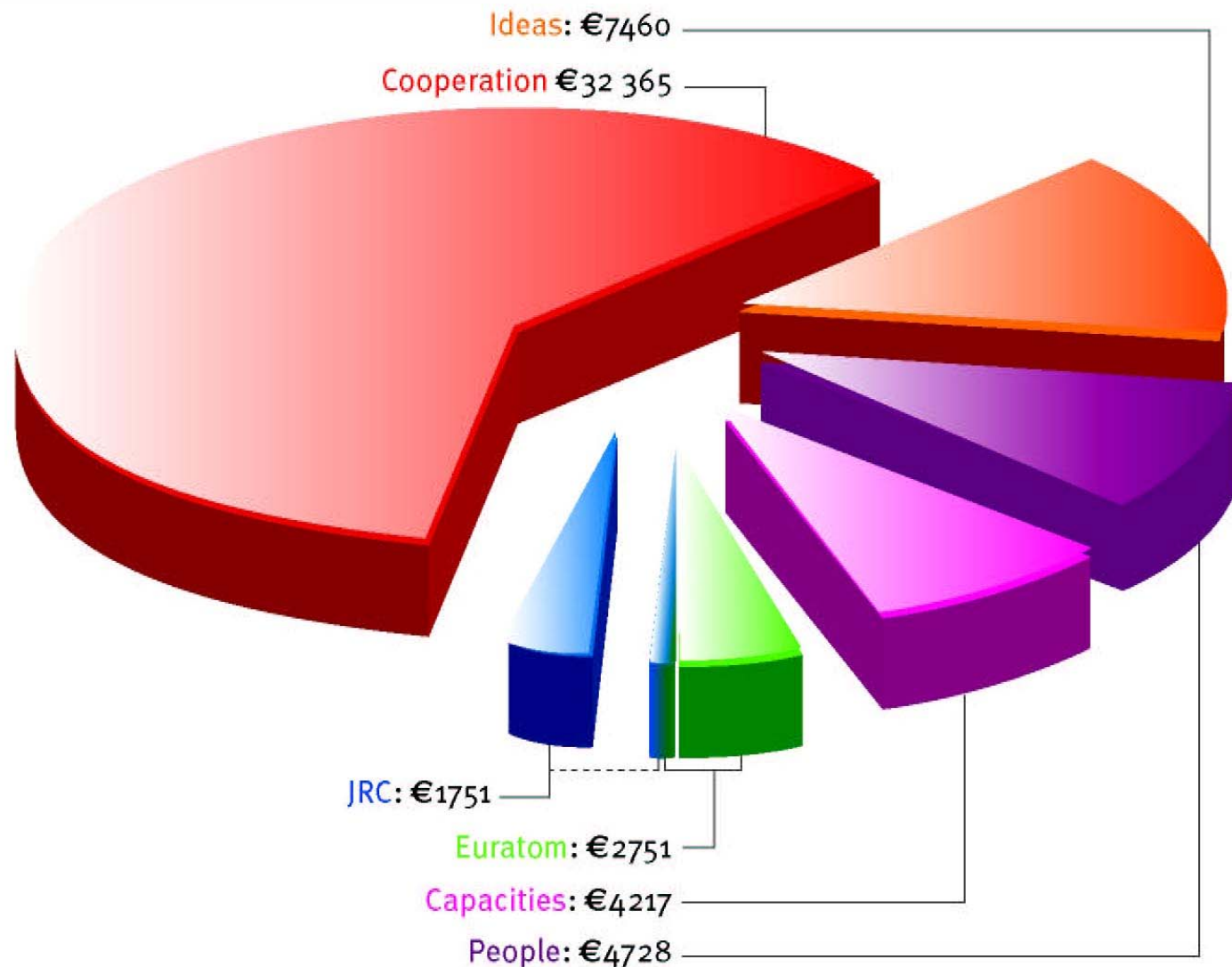**People – Marie Curie Actions**

Capacities – Research Capacity

JRC non-nuclear research

Euratom – JRC nuclear research

Euratom indirect actions – nuclear fusion and fission research

SEVENTH FRAMEWORK PROGRAMME

FP7 Indicative breakdown (€ million)

Ideas: €7460

Cooperation €32 365

JRC: €1751

Euratom: €2751

Capacities: €4217

People: €4728

SEVENTH FRAMEWORK PROGRAMME

Cooperation – Collaborative research

Ideas – Frontier Research

People – Human Potential

Capacities – Research Capacity

+

JRC (non-nuclear)
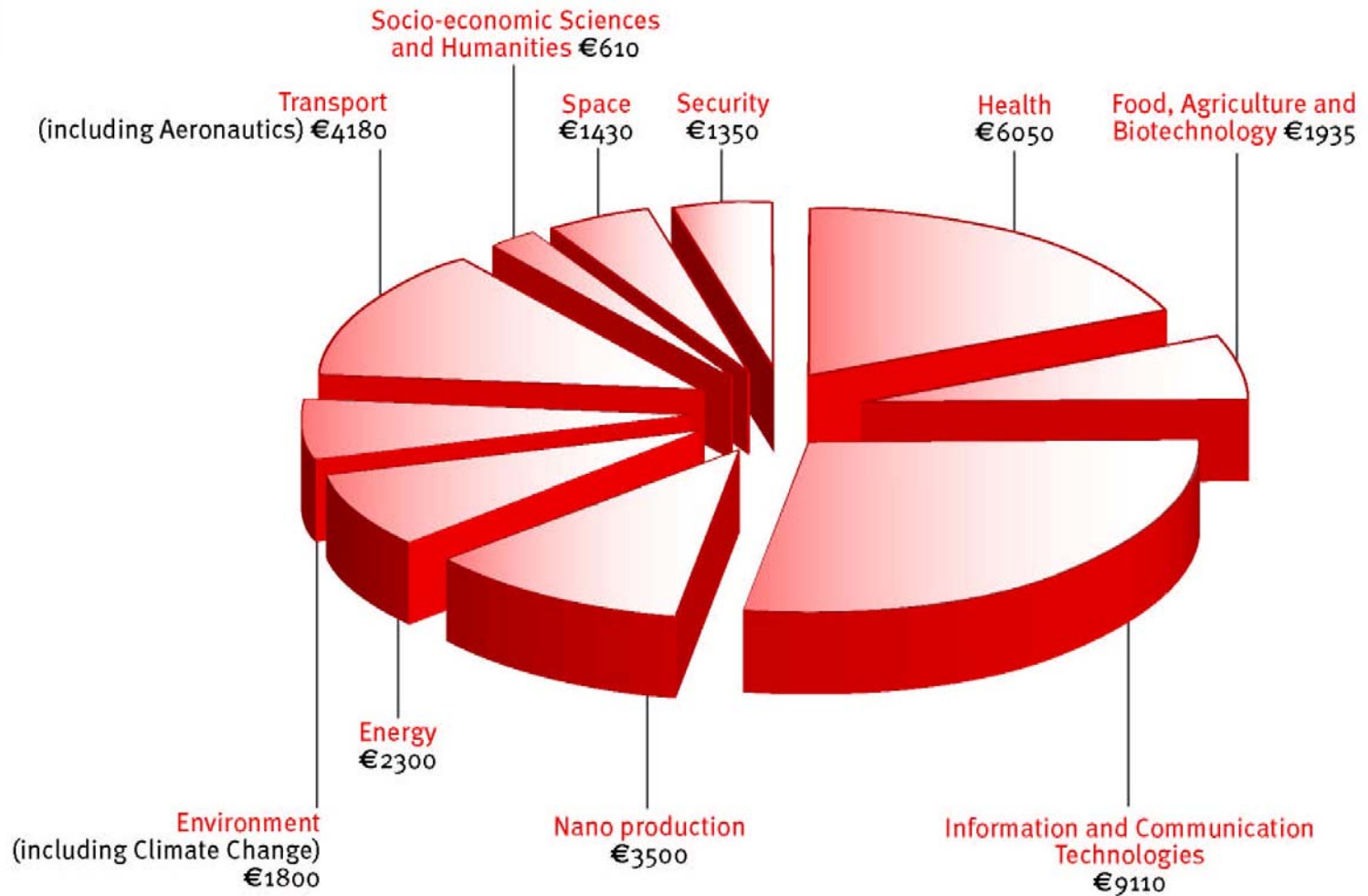
JRC (nuclear)

Euratom

SEVENTH FRAMEWORK PROGRAMME

Cooperation programme (€ million)

Socio-economic Sciences and Humanities €610

Transport (including Aeronautics) €4180

Space €1430

Security €1350

Health €6050

Food, Agriculture and Biotechnology €1935

Energy €2300

Environment (including Climate Change) €1800

Nano production €3500

Information and Communication Technologies €9110

SEVENTH FRAMEWORK PROGRAMME

I

1. Health

2. Food, Agriculture &Biotechnology

3. Information & Communication Technologies

4. Nanosciences, Nanotechnologies, Materials & new Production Technologies

5. Energy

6. Environment (including Climate Change)

7. Transport (including Aeronautics)

8. Socio-economic Sciences & Humanities

9. Space

10. Security

- European Research Council **(ERC) – the first pan-European funding agency for Frontier Research**

- **Autonomous scientific governance (Scientific Council)**

- **Support** investigator-driven **frontier research**

  - over all areas of research

  - competition at EU level

  - excellence as sole criterion

- **Budget ~** €1 billion per year **(2007-2013 ~ €7.5 billion)**

FP7 | Capacities
offering excellent infrastructures to conduct research

➤ **Research infrastructures**

➤ **Research for the benefit of SMEs**

➤ **Regions of Knowledge**

➤ **Research Potential**

➤ **Science in Society**

➤ **Coherent development of policies**

➤ **Activities of International Cooperation**

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FP7 | People
Marie Curie Actions- Fellowships, Grants, Awards

➢ Initial training of researchers (Marie Curie networks)

➢ Life-long training and career development

➢ Industry-academia pathways and partnerships

➢ International dimension

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PROGRAMME

Objectives

– To establish or deepen partnerships between min. 2 research organisations within Member States/Associated Countries and one or more organisations in Countries covered by European Neighbourhood policy and Countries with S&T Agreement through a joint programme of exchange of researchers

SEVENTH FRAMEWORK PROGRAMME

Participation rules

– Partnership: min. 2 independent EUMS /AC research organisations of at least 2 different countries **and** one or more organisations in an eligible third country (S&T agreement and Neighbourhood policy)
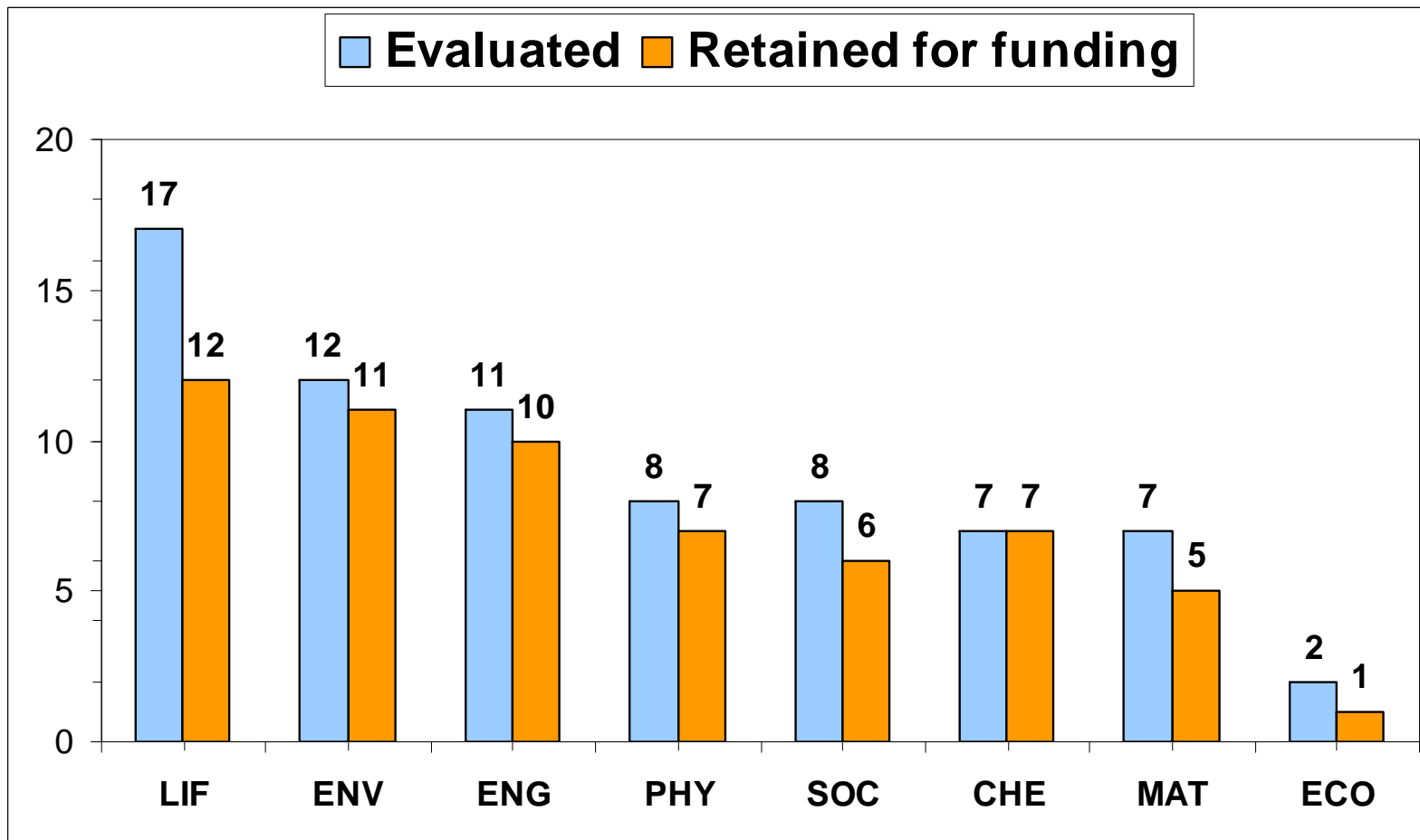
– Coordinator from EU MS/AC

– Duration of Partnership: 2- 4 years

- Multi-annual joint exchange programme
- No restriction for size of programme
- Exchanges to/from Europe
- Partner institutes select their staff for exchange: early-stage or experienced researchers, management, technical staff
- Short term exchanges (up to 1 year per person in total)

WP 2010

- The 7th Framework programme is open to participants from outside Europe.

- Partners from the United States are welcome

- Mutual opening of the Health theme between the European commission and NIH based on funding reciprocity

- Annual call is published on 31. July 2009

- Indicative total budget for health 638.24 MEuro

FP7 2007 – 2013

1. Health
2. Food, Agriculture &Biotechnology
3. Information & Communication Technologies
4. Nanosciences, Nanotechnologies, Materials & new Production Technologies
5. Energy
6. Environment (including Climate Change)
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Areas of Environmental Research
(For cross FP comparison)

- Climate change

- Natural hazards

- Environment and health

- Natural resources management

- Biodiversity

- Marine environment

- Land and urban management

- Environmental technologies including Cultural heritage

- Earth observation

- Assessment tools for sustainable development

Environment
(including Climate Change)

Objective

- ✓ To promote sustainable management of the natural and human environment and its resources
- ✓ To address in an integrated way global environmental issues

through:

- advancing knowledge on the interactions between the biosphere, ecosystems and human activities
- developing new technologies, tools and services

with emphasis on:

- predicting climate, ecological, earth and ocean systems changes
- monitoring, prevention and mitigation of environmental pressures and risks

Environment
(including Climate Change)

Activities and sub-activities

✓ **Climate change, pollution and risks**
  - Pressures on environment and climate
  - Environment and health
  - Natural hazards

✓ **Sustainable Management of Resources**
  - Conservation and sustainable management of natural and man-made resources and biodiversity
  - Management of marine environments

Environment
(including Climate Change)

Activities and sub-activities

✓ **Environmental Technologies**
  - Environmental technologies for observation, simulation, prevention, mitigation, adaptation, remediation and restoration of the natural and man-made environment
  - Protection, conservation and enhancement of cultural heritage including human habitat
  - Technology assessment, verification and testing

Environment
(including Climate Change)

Activities and sub-activities

✓ **Earth observation and assessment tools for sustainable development**

- Earth and ocean observation systems and monitoring methods for the environment and sustainable development
- Forecasting methods and assessment tools for sustainable development, taking into account differing scales of observation

✓ **Horizontal activities**

- Dissemination and horizontal activities

WP 2010 Environment

Cross-thematic approaches

✓ The "Ocean of tomorrow" Call

✓ Contribution to the cross-thematic call on European recovery plan

- Green cars
- Energy efficient buildings

✓ Call for Africa

WP 2010 Environment

The "Ocean of tomorrow" Call (KBBE, ENV, ENER, SSH, Transport)

Topics in the Environment Theme:

✓ Quantification of climate change impacts on economic sectors in the Arctic *(Large scale integrating project)*

✓ Vectors of changes in ocean and seas marine like, impact on economic sectors *(Large scale integrating project)*

✓ Sub-seabed carbon storage and the marine environment *(Large scale integrating project)*

WP 2010 Environment

Implementation and budget (I)

There are five calls:

Call name	Identifier	Deadline	Total budget	ENV contribution
Main Environment Theme	FP7-ENV-2010 FP7-ERANET-2010-RTD	5 January 2010	€175.000.000 Including ERA-NETS 6 mio €	
The Ocean of tomorrow	FP7-OCEAN-2010	14 January 2010	€34.000.000	€10.500.000
Green cars	FP7-2010-GC-ELECTROCHEMICAL-STRORAGE	14 January 2010	€25.000.000	€5.000.000
Energy-Efficient Buildings	FP7-2010-NMP-ENV-ENERGY-ICT-EeB	3 November 2009	€65.000.000	€5.000.000
Africa	FP7-AFRICA-2010	14 January 2010	€63.000.000	€17.500.000

International collaboration

✓ **SICA and other topics with international collaboration are reinforced**

Besides topics for Africa (examples):

- North Atlantic Ocean protection and management (emphasis on cooperation with US)

- Ocean acidification in the Mediterranean sea

- Climate policy scenarios and mitigation options in dev. countries and emerging economies

- Global plankton data set building in view of modeling

- Integrated Pollution Prevention and Control of industrial emissions in the Mediterranean region

- Networking of EO activities in the Balkan area

FP7-ENV-2010 Call

Climate Change, pollution and risks

- ✓ Atmospheric chemistry and climate change interactions *(Large scale integrating project)*
- ✓ Networking activities on atmospheric composition and climate change for research collaboration and policy making *(Coordinating action)*
- ✓ Changes in CO2 uptake and CH4 uptake emissions by oceans in a changing climate *(Large scale integrating project)*
- ✓ Underpinning work to enable provision of local scale climate information (annual to decadal timescales) *(Small or medium scale research project)*
- ✓ Impact of ocean acidification in the Mediterranean in a changing climate *(Small or medium scale research project)*

Environment and health

- ✓ Indoor air pollution and health risks of modern office buildings *(Small or medium scale research project)*

- ✓ Human health and environmental effects of exposure to pharmaceuticals released into the environment *(Small or medium scale research project)*

- ✓ Exposure models to assess the risks to operators, workers, residents and bystanders from exposure to plant protection products (PPPs) *(Small or medium scale research project)*

- ✓ Greenhouse gas emission reduction policies and their impacts on public health and well-being in urban areas *(Small or medium scale research project, SICA)*

Natural Hazards

- ✓ Building a culture of risk prevention in Europe *(Small or medium scale research project)*

- ✓ New methodologies for multi-hazard and multi-risk assessment *(Small or medium scale research project)*

- ✓ Social science research, natural hazards and decision making process *(Coordinating action)*

Management of marine environment

- ✓ North Atlantic Ocean and associated shelf-seas protection and management options – collaboration with US & Canada *(Large scale integrating project)*
- ✓ Global plankton data set building in view of modelling *(Small or medium scale research project)*
- ✓ Coordination actions to support FP6 NoEs durable integration *(Coordinating action)*

(see also Call « Ocean of Tomorrow »)

Earth observation and assessment tools for sustainable development (I)

✓ Supporting the integration of European and international R&D programmes in GEO *(Coordinating action)*

✓ Building observational datasets for the predictability of global atmospheric, oceanic and terrestrial processes using reanalysis techniques *(Small or medium scale research project)*

✓ Integrating new data visualisation approaches of earth Systems into GEOSS development *(Small or medium scale research project)*

Topics for FP7-ENV-2010 Call

Earth observation and assessment tools for sustainable development (II)

- ✓ Exploring GNSS (global navigation satellite systems) applications for Global Environmental Earth Observation and GEOSS (Global Earth Observation Systems of Systems) *(Coordinating action)*

- ✓ Global Observation Systems for Mercury *(Large scale integrating project, SICA)*

- ✓ Identification and Networking of EO activities in the Balkan area *(Coordinating action)*

FP7 2007 – 2013

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Security theme in FP 7

Four Security missions / activities:

1. Security of citizens
2. Security of infrastructures and utilities
3. Intelligent surveillance and border security
4. Restoring security and safety in case of crisis

Three Cross cutting activities:

1. Security systems integration, interconnectivity and interoperability
2. Security and Society
3. Security Research coordination and structuring

Security of Citizens – topics in WP 2010

- Integration project
  - SEC-2010.1.2-1 Information and knowledge management for the prevention of organised crime
- Capability projects
  - SEC-2010.1.3-1 Innovative tools to combat organised crime and terrorism financing and money laundering
  - SEC-2010.1.3-2 Tackling counterfeit medicines and related criminal networks
  - SEC-2010.1.3-3 Detection of IED manufacturing facilities
- Coordination and support actions
  - SEC-2010.1.4-1 Advanced forensic toolbox
  - SEC-2010.1.4-2 Controlling the change of properties of chemicals to preclude misuse

Security of infrastructures and utilities
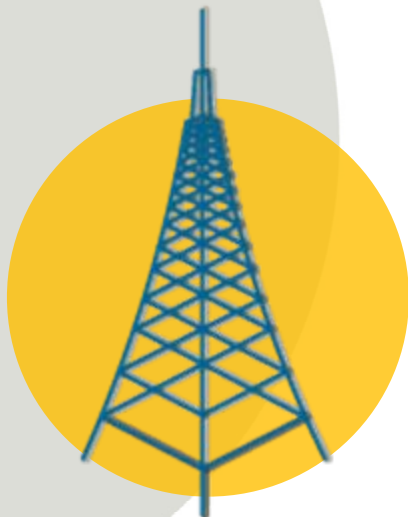
- Activities concentrate on targets of incidents or disasters (examples of infrastructure: large-scale event sites, significant sites of political or symbolic value, utilities for energy, water, transport, communication, financial administrative, public health etc.

- Emphasis will be on analysis, modelling and assessing vulnerabilities of infra, securing existing and future critical infra networks, control and alert systems, protection against cascading effects and defining and designing criteria to built new infra and utilities

- Protect / Prepare

Intelligent surveillance and border security

- Activities deal with issues relevant to all consecutive tiers of European border security strategy.
- Emphasis will be on enhancing the effectiveness and efficiency of all security relevant systems, equipment, tools etc, improving the security of European's land and sea border borders, maritime security and assessment and management of migration flows

- Identify / Prevent / Protect

Restoring safety and security in case of crisis – topics in WP 2010

- Activities will focus on technologies providing an overview of and support for diverse emergency management operations such as civil protection, humanitarian aid and rescue tasks.

- Emphasis will be on issues such as general organisational and operation preparedness to cope with security incident, crisis management, intervention in hostile environment, emergency humanitarian aid, the management of the consequences and cascading effects of security incident.

- Prepare / Respond / Recover

Restoring safety and security in case of crisis

- Demonstration programme
  - SEC-2010.4.1-1 Aftermath crisis management - phase I
- Integration projects
  - SEC-2010.4.2-1 Interoperability of data, systems, tools and equipment
  - SEC-2010.4.2-2 Preparedness and Resilience to a CBRN crisis
  - SEC-2010.4.2-3 Information acquisition using dedicated platforms, including UAV, aerostatic platforms (balloons) and satellites
- Capability projects
  - SEC-2010.4.3-1 Alert and communication, including role of media, towards the population in crises management
  - SEC-2010.4.3-2 Adaptation of existing Decision Support Systems (DSS) to new radiological threats
- Coordination and support action
  - SEC-2010.4.4-1 Basic service restoration (e.g. energy, water, communication), business continuity, domestic/ environmental normality

European Commission
Enterprise and Industry

SEVENTH FRAMEWORK
PROGRAMME

Security and Society

- Activities are cross-cutting and multi-disciplinary in nature – natural sciences, technology, political, social and human sciences.
- Research activities related to issues such as
    - security as evolving concept,
    - attitude of citizens in crisis situation,
    - preparedness and readiness of citizens in case of terrorist attack,
    - communication between authorities and citizens in crisis situation,
    - raising public awareness for threats,
    - ethical issues with respects to personal data protection and integrity of information etc.

Security and Society – topics in WP 2010

Citizens and security

- SEC-2010.6.1-1 Signs of 'early warning' to detect trends and weak signals in social polarisation, radicalisation development and segregation
- SEC-2010.6.1-2 Develop models and tools to detect and evaluate risks of terrorism
- SEC-2010.6.1-3 Reduction of the cognitive biases in intelligence analysis

- Foresight, scenarios and security as an evolving concept
    - SEC-2010-6.3-1 Developing a reference framework for the European security culture: the perception of threats and the trust in public authorities and the police and the perception of security as a service
    - SEC-2010.6.3-2 Fore sighting the contribution of security research to meet the future EU roles
    - SEC-2010.6.3-3 Research on rigorous methodologies for assessment of security investments and trade-off between security and other societal objectives (e.g. privacy and social cohesion)

FP7 2007 – 2013

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Space in the EU Research Framework Programmes

A new activity, first introduced by the 6th Framework Programme - FP6 (2002-2006):

- ➢ About €230 million over five years.
- ➢ Earth observation (GMES), Satcom, Satnav
- ➢ Focused on applications and services

FP7 (2007 – 2013)

- ➢ About €1.4 billion over 7 years
- ➢ GMES + Strengthening Space Foundations
- ➢ Services but also technology development

FP-7 Participation of selected countries

(countries with an S&T Agreement in yellow)

Update 28/05/09
190 countries
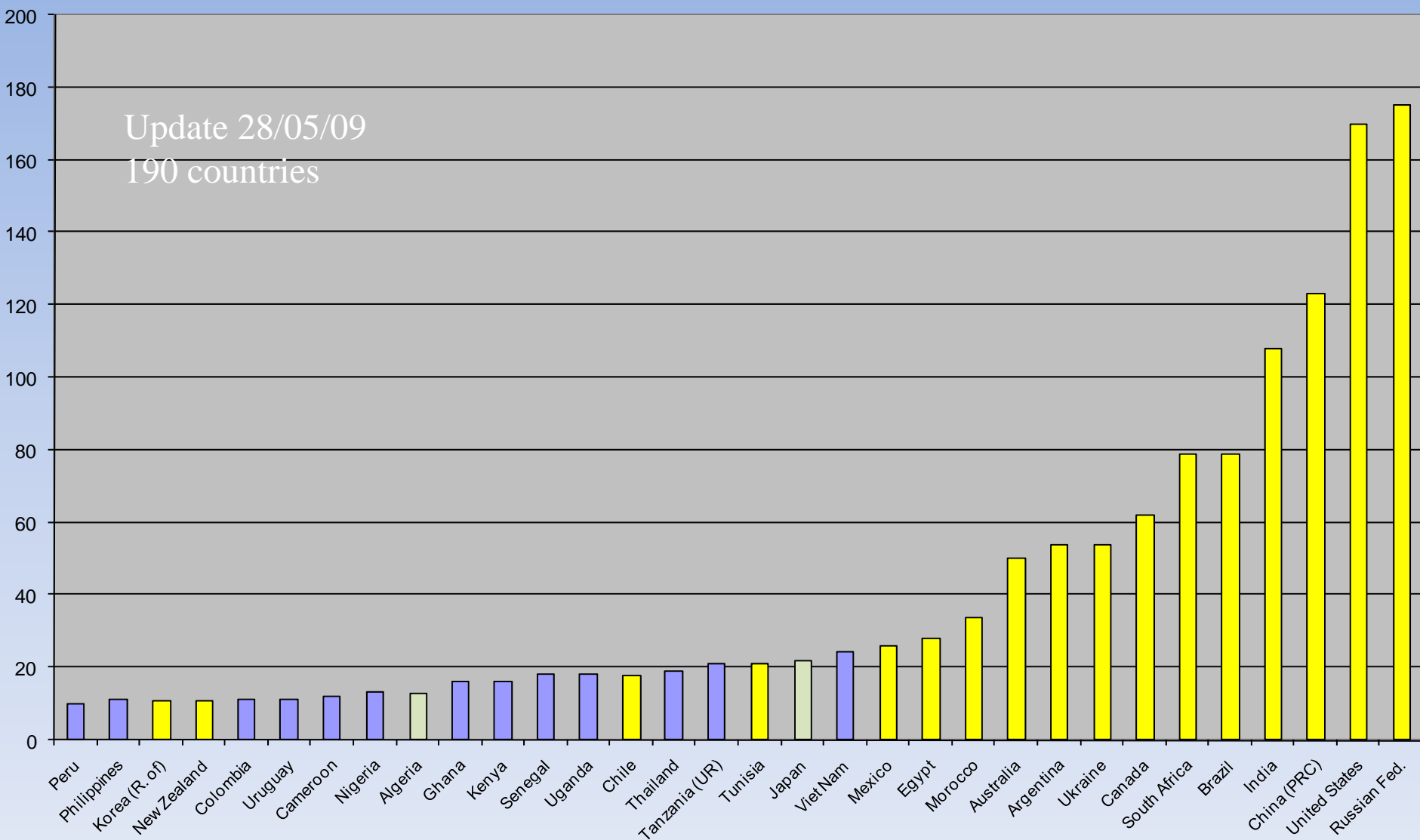
Breakdown of FP7 Space funding

2007-2013 Draft split EC Calls and ESA Delegation Agreement

Legend:
- ☐ EC Call for proposals
- ■ Data Access Grant
- ☐ ESA Delegation

Call 1
Call 2
Call 3

Y-axis: MEUR (0, 50, 100, 150, 200, 250, 300, 350)
X-axis: 2007, 2008, 2009, 2010, 2011, 2012, 2013

Services, SSF R&D

~ 670M€

710 M€

48 M€
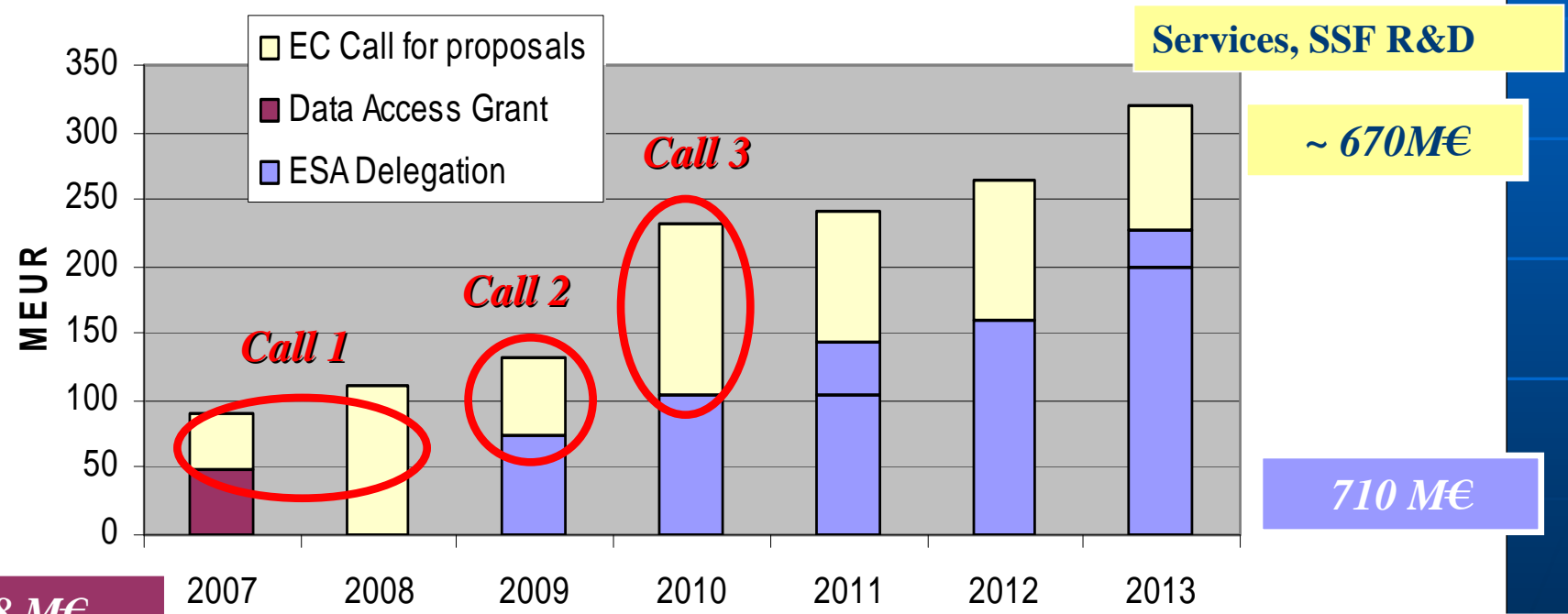
Space data

Space Infrastructure

The FP7 Space Programme Main topics

I. GMES:

- **Land, Marine, Emergency, Atmosphere, Security**

  ➢ **Major investment in the space component and operational services**

II. Strengthening Space Foundations:

- **Space Technologies, Exploration, Space Transportation, Space Science**

GMES: dedicated space infrastructure
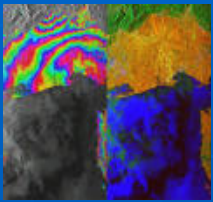
- **Sentinel 1** – SAR imaging (radar data) (2011)
  - All weather, day/night applications, interferometry
  - successor of ENVISAT
- **Sentinel 2** – Multispectral imaging (2012)
  - for land applications, e.g. urban, forest, agriculture
  - successor of SPOT, Landsat
- **Sentinel 3** – Ocean & Land monitoring (2012)
  - Wide-swath ocean color, vegetation, sea/land surface temperature, ocean altimetry
- **Sentinel 4** – Geostationary atmospheric (2017)
  - Atmospheric composition monitoring, trans-boundary pollution
- **Sentinel 5** – Low-orbit atmospheric (2019)
  - Atmospheric composition monitoring
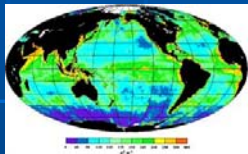
Five Core Services
Five FP7 Integrated Projects

- Atmosphere: **MACC**

- Emergency Response: **SAFER**

- Land: **geoland2**

- Marine: **MyOcean**

- Security: **G-MOSAIC**

Space Work Programme 2010 (1)
Main Topics in GMES

- **Stimulating the development of specific downstream services**
  - Water management/hydrological cycle/water scarcity
  - Biodiversity
  - Forest Monitoring
  - Agriculture and agri-environment
- **Developing pre-operational service capabilities for Maritime Surveillance**

Space Work Programme 2010 (2)
Main Topics in Space Foundations

- Exploitation of space **science and exploration** data
- Space **transportation** for space exploration
- Critical space **technologies**
- **Security of space assets** from space weather events and from in-orbit collisions

3rd call to be published: 30 July 2009 deadline: 8 December 2009

Opportunities for third countries to participate in FP-7

- **Participation** in ALL above areas is encouraged to researchers and research organisations **from all third countries**

- The active participation of third country partners represents an added value

- **Financing is possible**, if the contribution is essential for reaching the objective of the project

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Important Weblinks

l **ERA-Link: http://cordis.europa.eu/eralink/home_en.html**

l **Seventh Framework Programme:** http://ec.europa.eu/research/fp7

l **Information on research programmes and projects:** http://www.cordis.lu

l **Mobility (Marie Curie):** http://europa.eu.int/mariecurie-actions

l **Information requests:** http://ec.europa.eu/research/enquiries/

Thank you for your attention !

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