

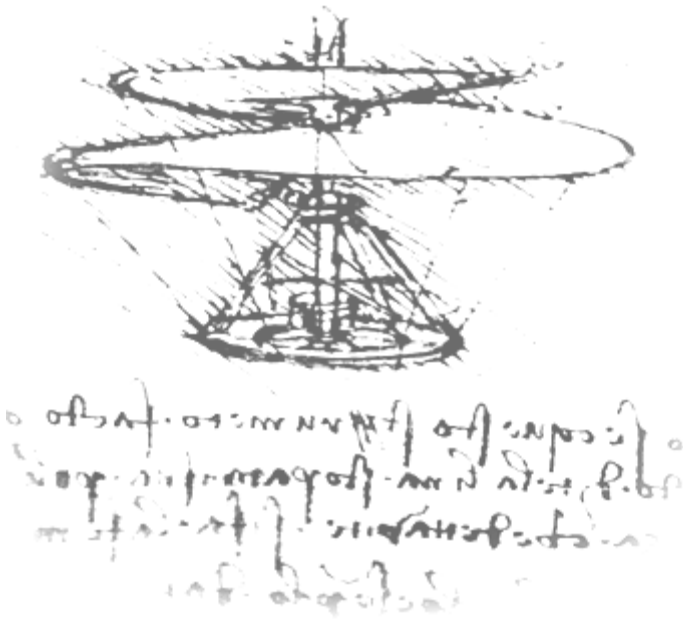


# Joint Research Centre (JRC)

The European Commission's  
Research-Based Policy Support Organisation

its Mission,  
the Organizational Structure,  
Research Priorities  
and Accountability Challenges

## Mission of the DG JRC



... to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies. As a service of the European Commission, the JRC functions as a reference centre of science and technology for the Union.

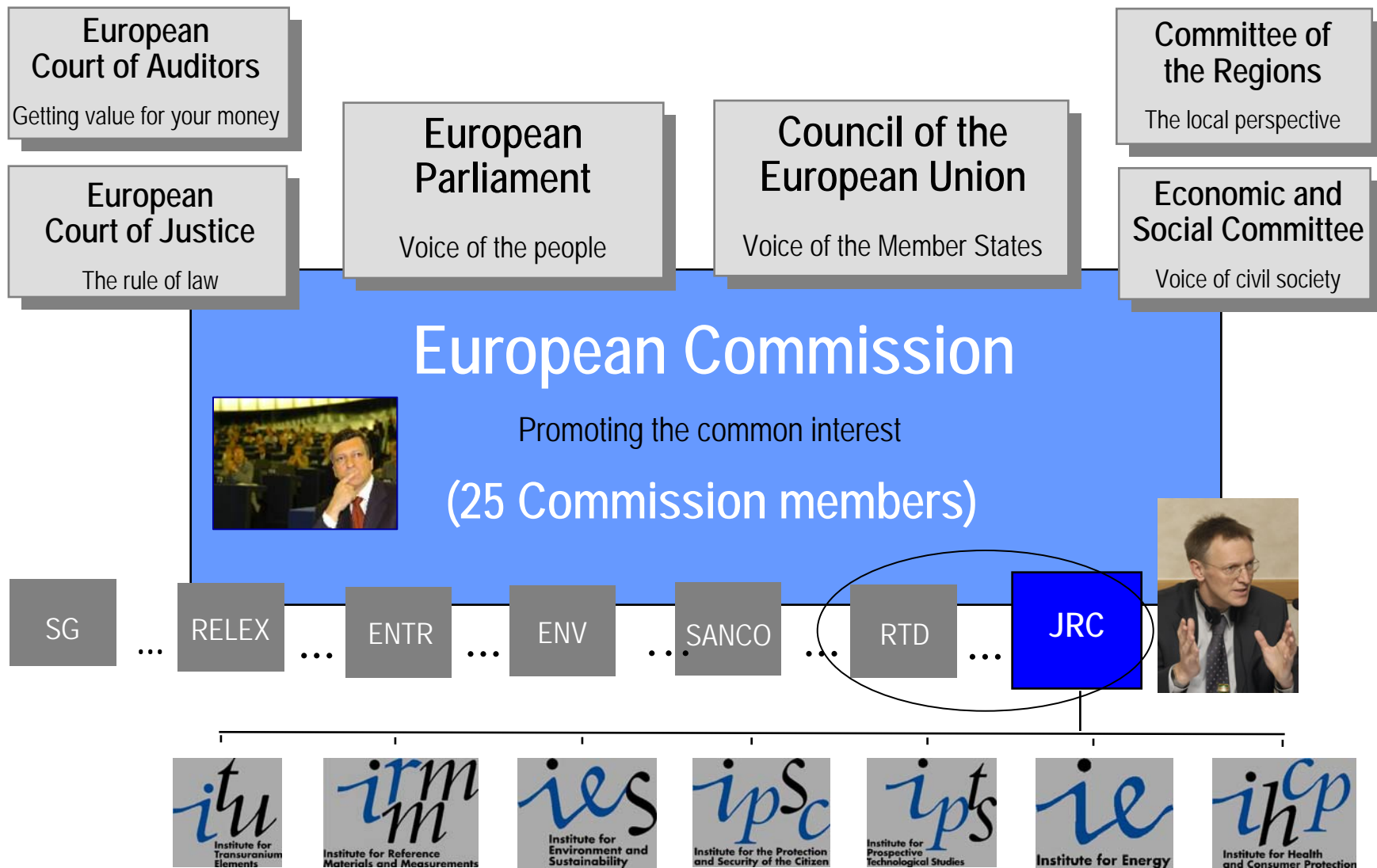
Close to the policy-making process, it serves the common interest of the Member States, while being independent of special interests, whether private or national.

# Organizational Structure

- Current situation
  - JRC in the European Union
  - Structure of the JRC
  - Role of the European Commission
  - Unique position of DG JRC
  - JRC: At Each Stage of the Policy Process
- Back to the roots
  - Treaty of Rome
  - Creation of Nuclear Research Centre
  - The 1970s - a new approach
- ISPRA site

# JRC in the EU

Joint Research Centre



## 7 Institutes in 5 Member States



### IE – Petten, The Netherlands

- Institute for Energy

Staff:  $\cong$  250



### IRMM - Geel Belgium

- Institute for Reference Materials and Measurements

Staff:  $\cong$  345



### ITU - Karlsruhe Germany

- Institute for Transuranium elements

Staff:  $\cong$  325



### IPSC - IHCP - IES - Ispra Italy

- Institute for the Protection and the Security of the Citizen

- Institute for Health and Consumer Protection

- Institute for Environment and Sustainability

Staff:  $\cong$  425, 320, 450

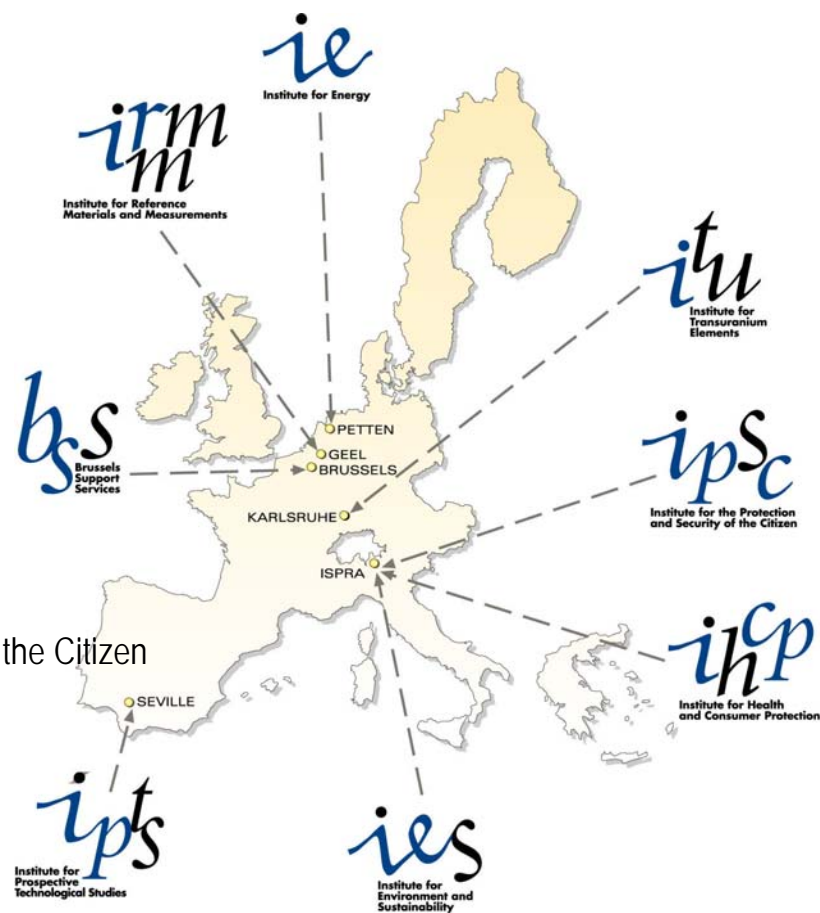


### IPTS - Seville Spain

- Institute for Prospective Technological Studies

Staff:  $\cong$  170

# Structure of the JRC



Total staff: ~ 2870 people

# The European Commission

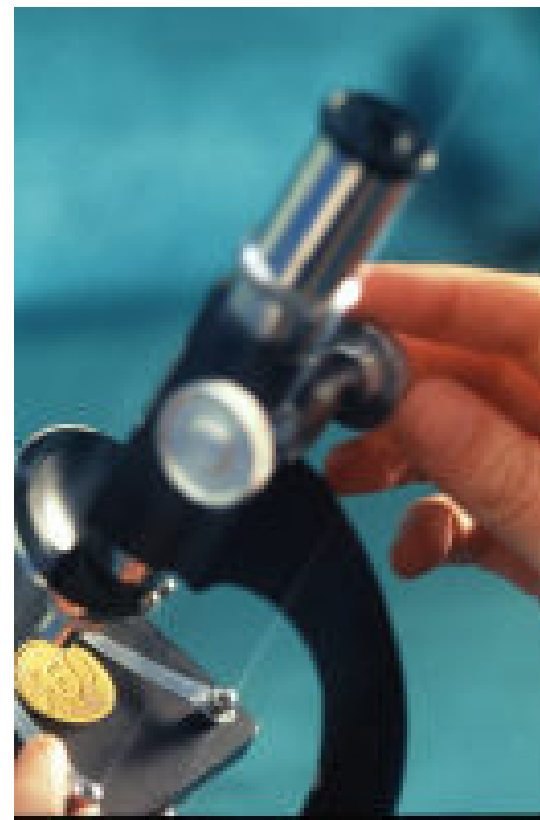


## Four main roles

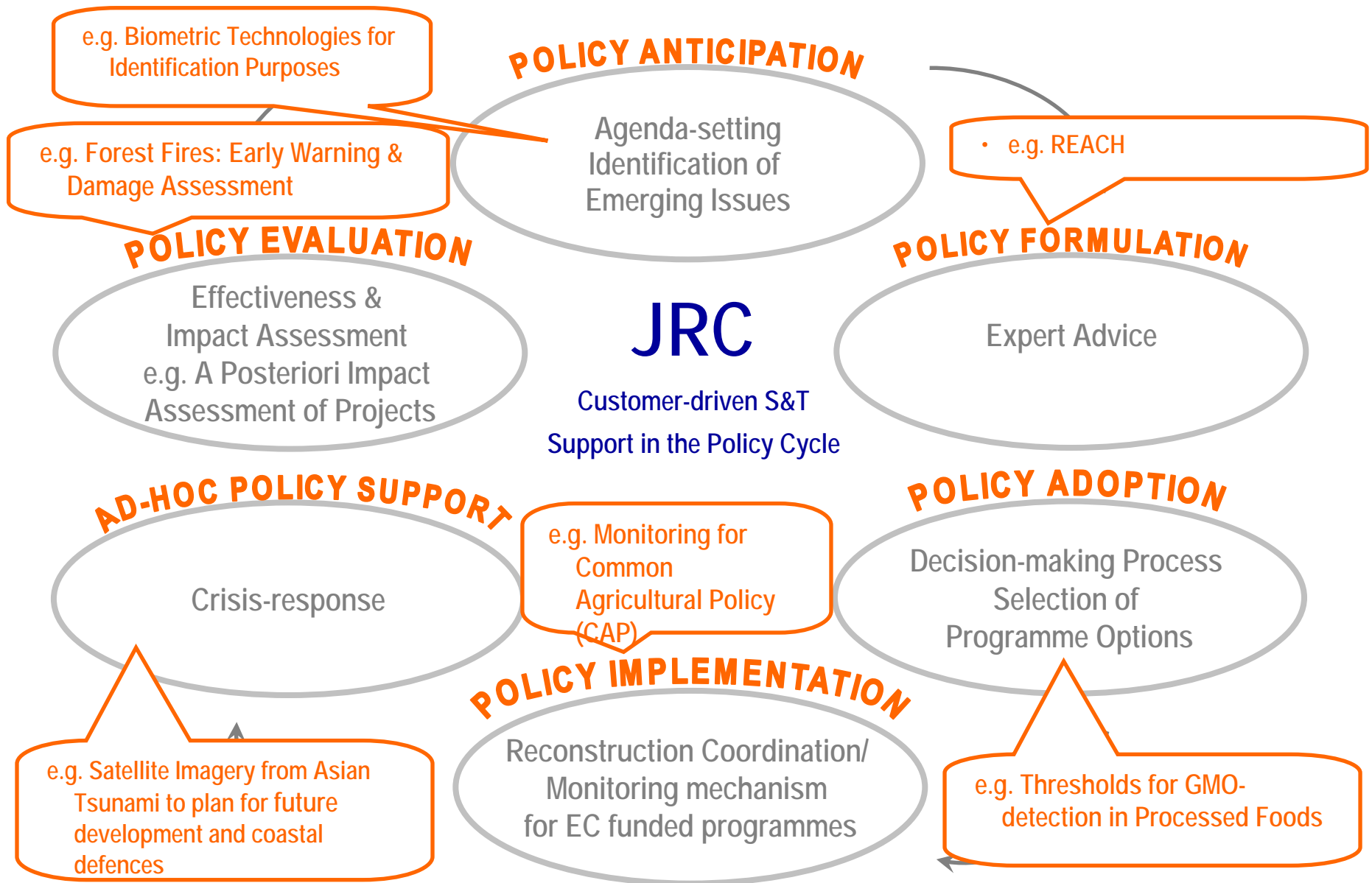
- Proposing new legislation
- Implementing EU policies and the budget
- Enforcing European law
- Representing the EU on the international stage

## Unique position of DG JRC

- Inside the Community legislative process
- Embedded in the scientific world as well
- Trusted reference role
- Working with all the stakeholders
  - legislators,
  - regulatory authorities,
  - scientific experts,
  - industry associations,
  - agencies



# JRC: At Each Stage of the Policy Process





# Back to the roots

## 25 March 1957

- The Treaty of Rome
  - European Economic Community and Euratom
  - Birth of the Commission
  - Creation of the JRC

- The European Atomic Energy Community Treaty

Legal basis - Article 8

1) The Commission [...] establishes a **Joint Nuclear Research Centre**.

The Centre ensures that research programmes and other tasks assigned to it by the Commission are carried out.

2) For geographical or functional reasons, the activities of the Centre might necessitate separate establishments....."



# Creation of Nuclear Research Centre



Ispra (I) - 22/7/1959  
National Committee  
for Nuclear Research



Geel (B) - June 1961  
Central Bureau for Nuclear Measurements



Petten (NL) - July 1961  
High Flux Reactor



# The JRC in the 1970s - a new approach

- Nuclear research is not longer given priority at trans- national level
- Other areas are at the order of the day, e.g.:  
environment, remote sensing, renewable energies, informatics,  
advanced materials, food safety and quality



## The Ispra Site



- Initially set up as an Italian nuclear research centre in late 50's
- Some features of the Ispra site:
  - Area of 160 hectares
  - 36 km of roads
  - a perimeter of 6 km
  - 140 heated buildings
  - a **co-generation plant** on the site provides the electric power needed
- On the site are present:
  - 1700 staff
  - 340 staff of external organisations
  - 200 daily visitors

# Research Priorities

- FP7 (2007-2013)
  - Policy Themes
  - Indicative Budget Breakdown
  - JRC : New Priorities
  - JRC : Indicative Budget Breakdown
- Examples

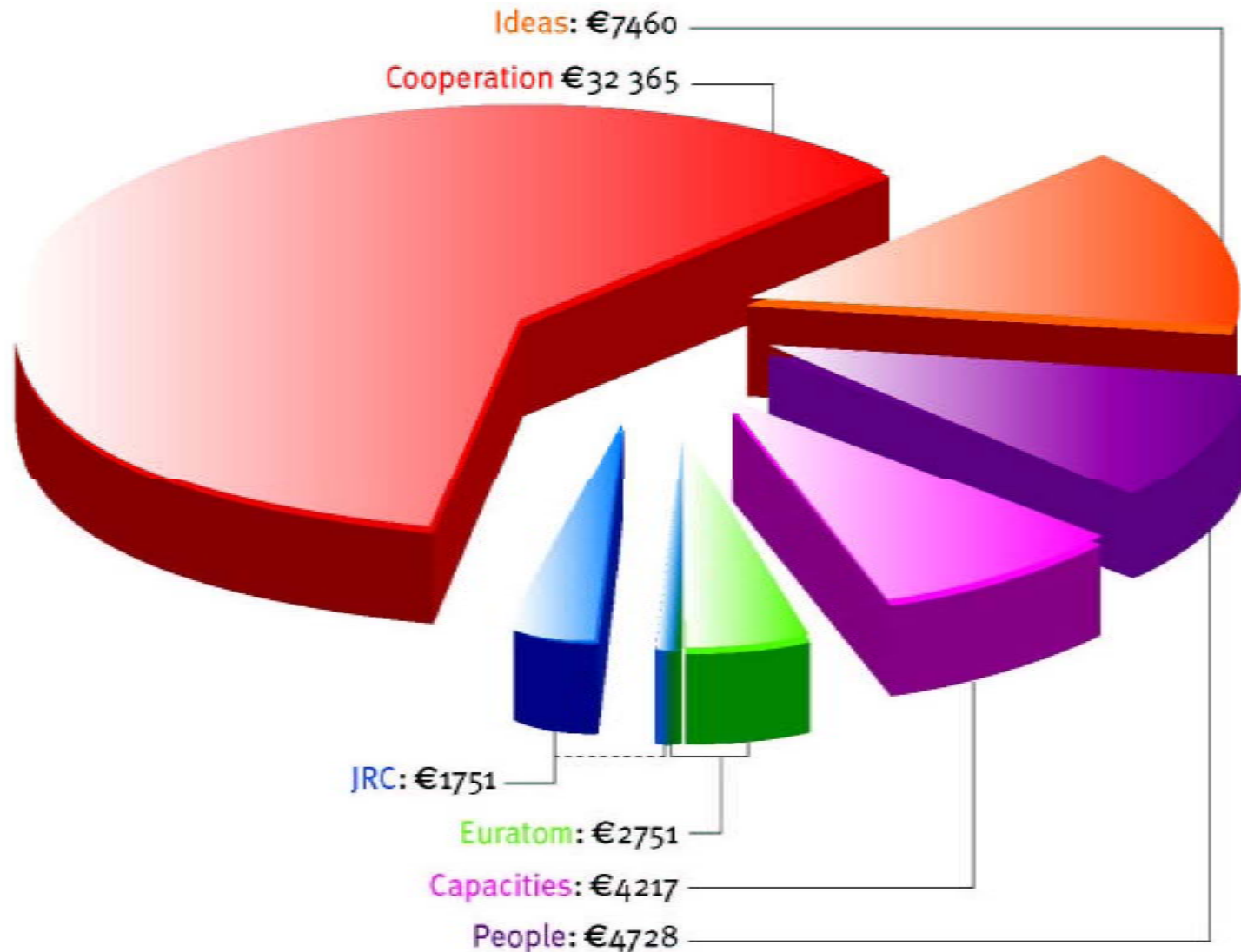
# FP7 (2007-2013)

- Policy Theme 1: Prosperity in a knowledge intensive society
- Policy Theme 2: Solidarity and the responsible management of resources
- Policy Theme 3: Security and freedom
- Policy Theme 4: Europe as a world partner
- Policy Theme 5: Euratom



# FP7 – Indicative breakdown (€million)

Joint Research Centre



# JRC in FP7: New Priorities

- **Support to Lisbon Process**  
Digital divide, econometric tools, interplay between innovation & regulation, standards and references in support of growth...
- **Increase Internal & External Security**  
Addressing terrorist threats, combating proliferation of CBRN, support border control...
- **Understand relationship between Environment & Health**  
Exposure to harmful agents, epidemiological studies, public health studies, environmental and toxico-genomics, chemical stressors...
- **Sustainable Agriculture**  
Integrated use of agricultural resources, protection of agri-environment and of landscape, social issues...



# JRC in FP7: Indicative Budget Breakdown

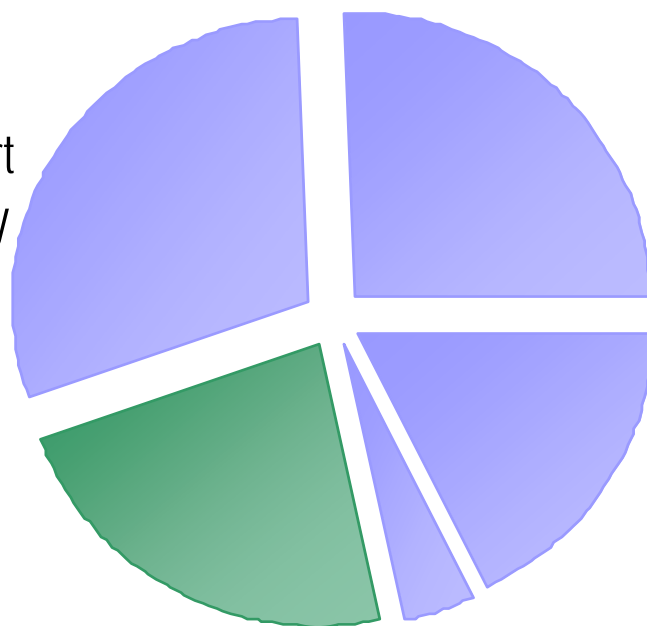
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683M€ ('1. Prosperity')

- Chemicals
- Biotechnology
- Energy & Transport
- Information Society

578M€ ('2. Solidarity')

- Environment
- Health
- Climate Change
- Rural Development



403M€ ('3. Security')

- Natural Disasters
- Internal/External Security
- Food Chain

517M€\* ('5. Nuclear')

- Nuclear Energy, Safety & Security

88M€ ('4. World Partner')

- Global Security

Non-Nuclear

Nuclear (5-year programme)

# Anti-fraud applied to Agriculture

## MARS: Monitoring Agriculture with Remote Sensing

Monitors compliance with the EU's CAP: Control with remote sensing

Parcel-id = B

### Explanation

Parcel B was declared and accepted by the contractor as **set-aside**.

Parcel A was declared as maize.

The Quality Control by JRC has determined that also parcel B is maize. As a consequence, the declaration for this parcel was refused as wrong.

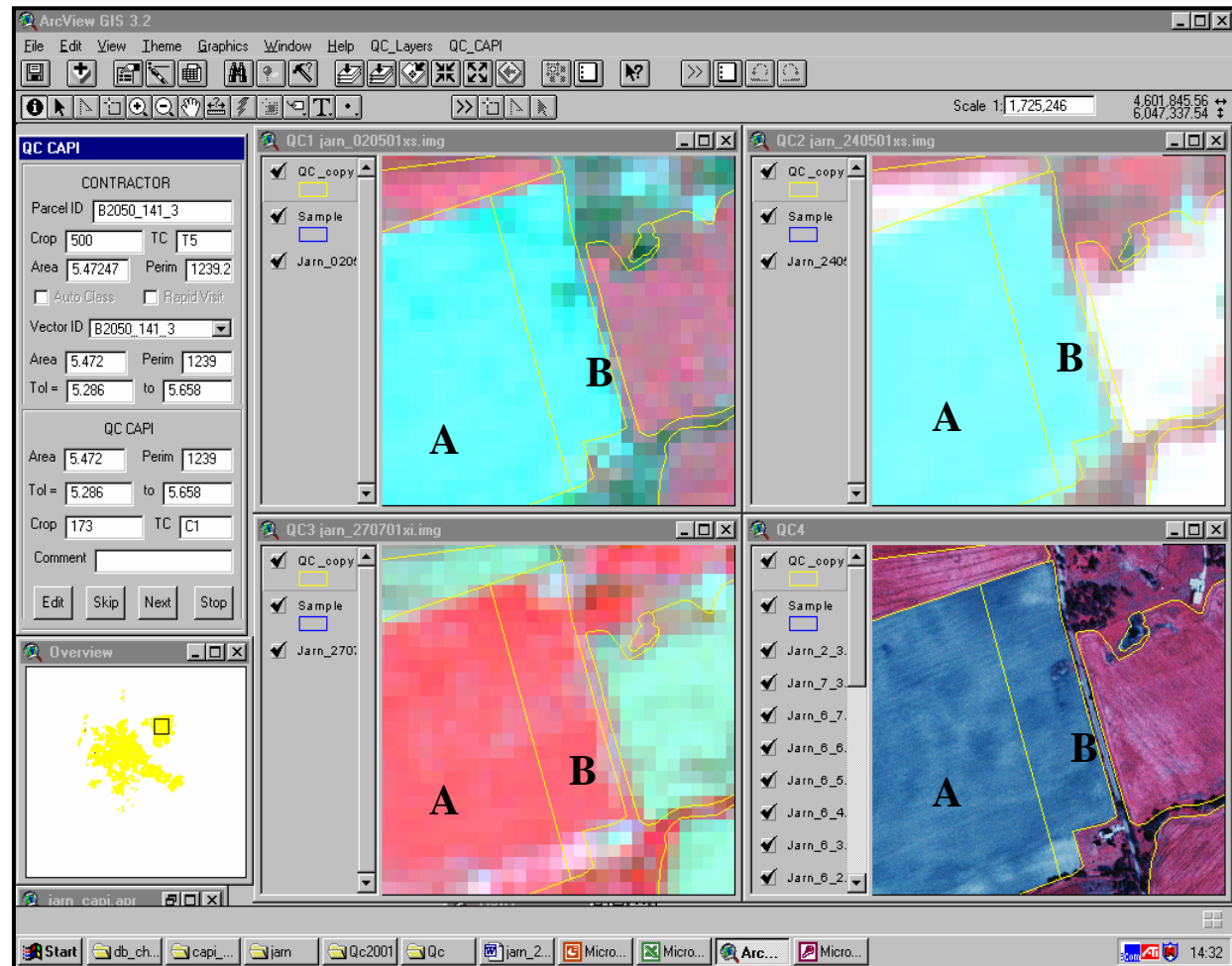
### TBN:

Picture LT: satellite image 02 May '01

Picture RT: satellite image 24 May '01

Picture LB: satellite image 27 July '01

Picture RB: aerial photography



# Crop forecasts

Partners: DG AGRI,  
DG AIDCO,  
supervising bodies in the Member States

- Crop forecast bulletins throughout the season
- Support in the supervision of the control system
- Early warning on humanitarian crises



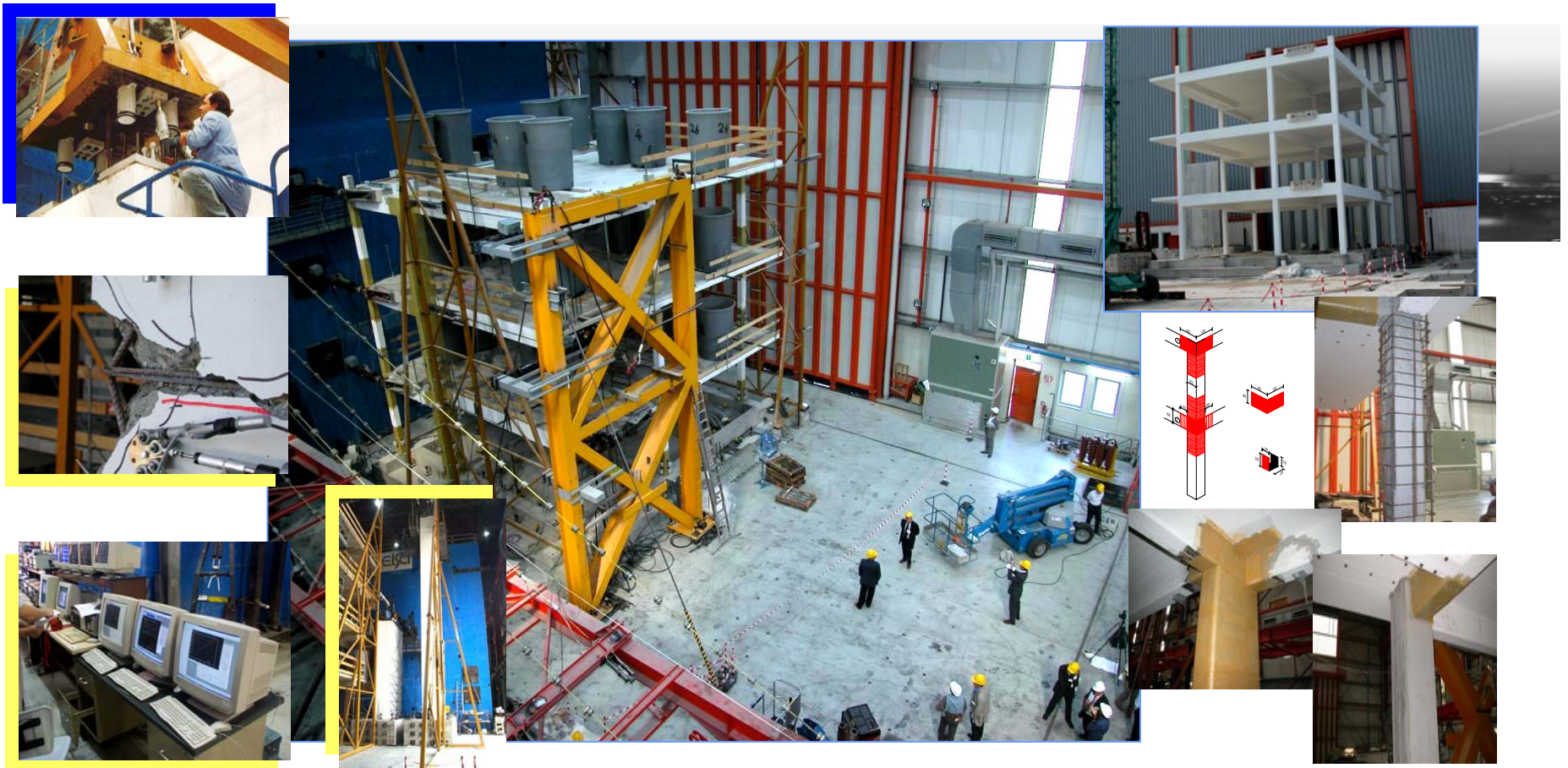


# European Laboratory for Structural Assessment

## Mission

- Leading position
- Contributions
- Model construction and testing
- Rehabilitation of structures

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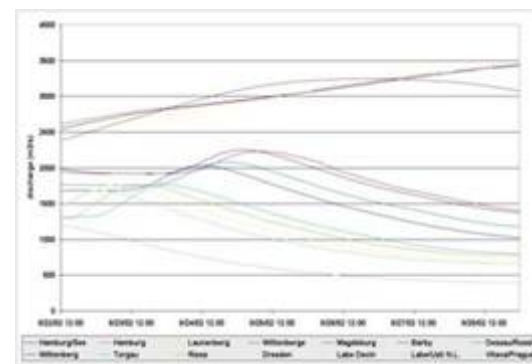
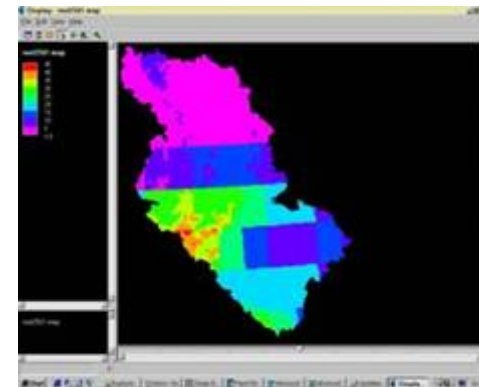


# Flood Forecasting

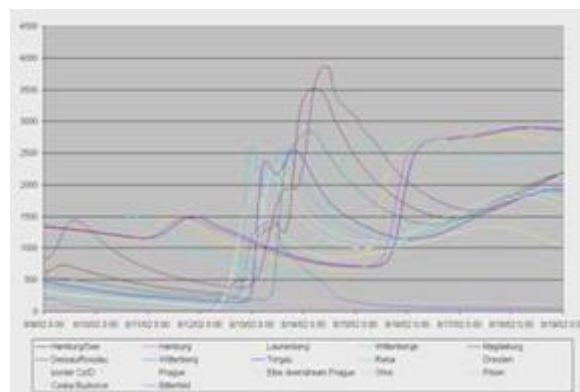
Partners: DG ENV, DG REGIO, national water authorities, ECMWF

- Support early warning flood forecasting in particular in cross-border basins
- Develop innovative systems which make maximum use of existing databases on land use, hydrological data, meteorological data
- Crisis response

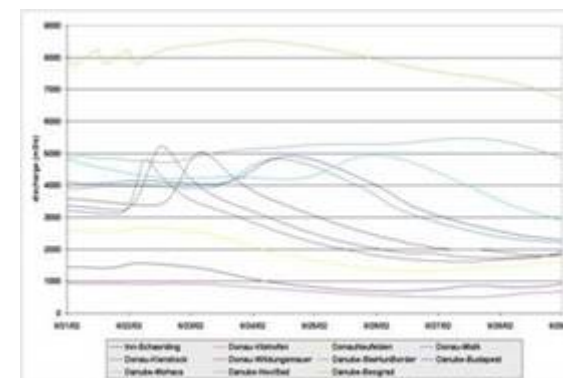
7-day rainfall forecast  
22-29 August, Elbe



Flood forecast Elbe  
22-29 Aug

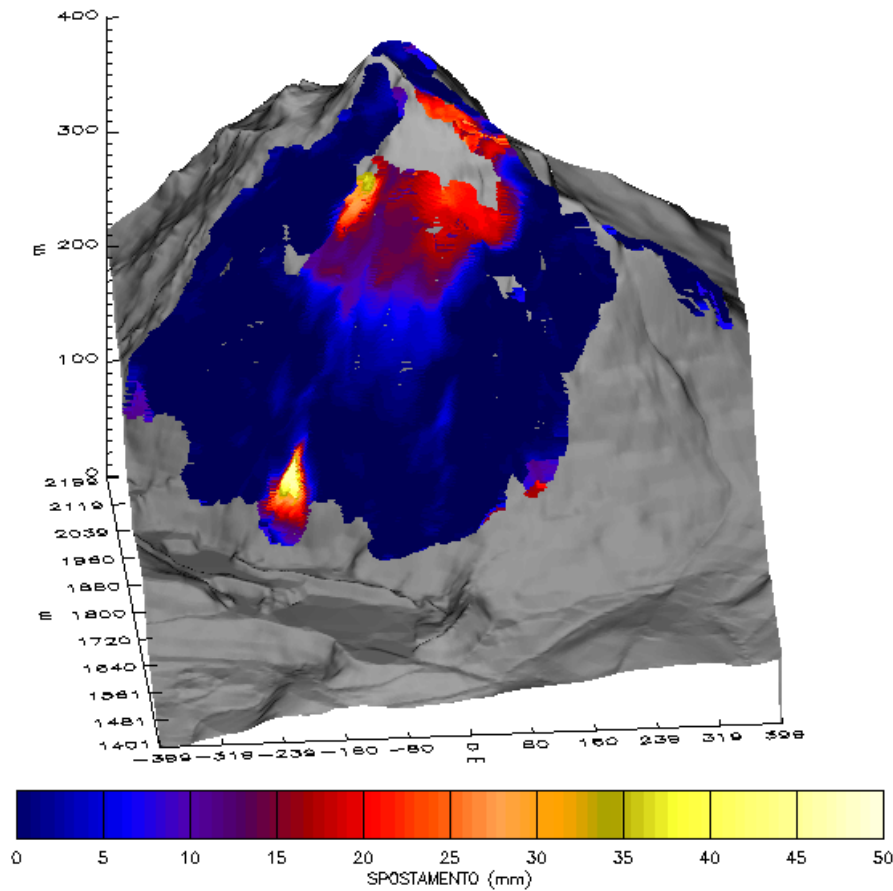


Elbe flood:  
7 August - 18 August  
incl 48 hour forecast



Flood forecast Danube 22-29 Aug

# Landslides monitoring by radar interferometry



Monte Beni (FI)



time span: 124 h

time step: 40 min

maximum speed: 0.48 mm/h

average speed: 0.16 mm/h

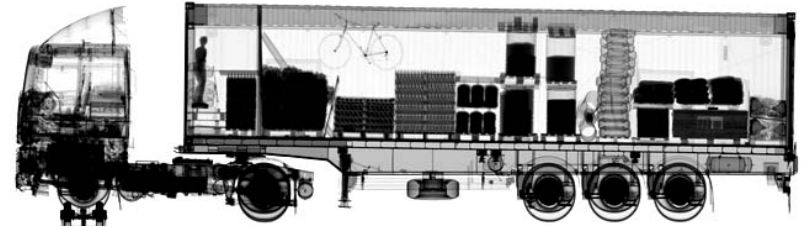
## EURITRACK:

detection of explosives in containers

Partners:

- CEA (FR),
- INFN (IT),
- French customs,
- JRC,
- IRB (Croatia),
- IPJ (PL),
- KTH (SE),
- industry (FR, IT)

# Illicit Trafficking



Combined Technology:  
X-Ray Radiography  
&  
Neutron Interrogation

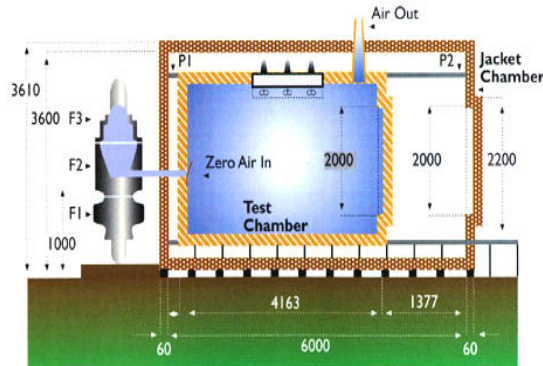


Up to 15 m



Up to 1000 m

# INDOORTRON laboratory



## Contact Materials - toys & food packaging

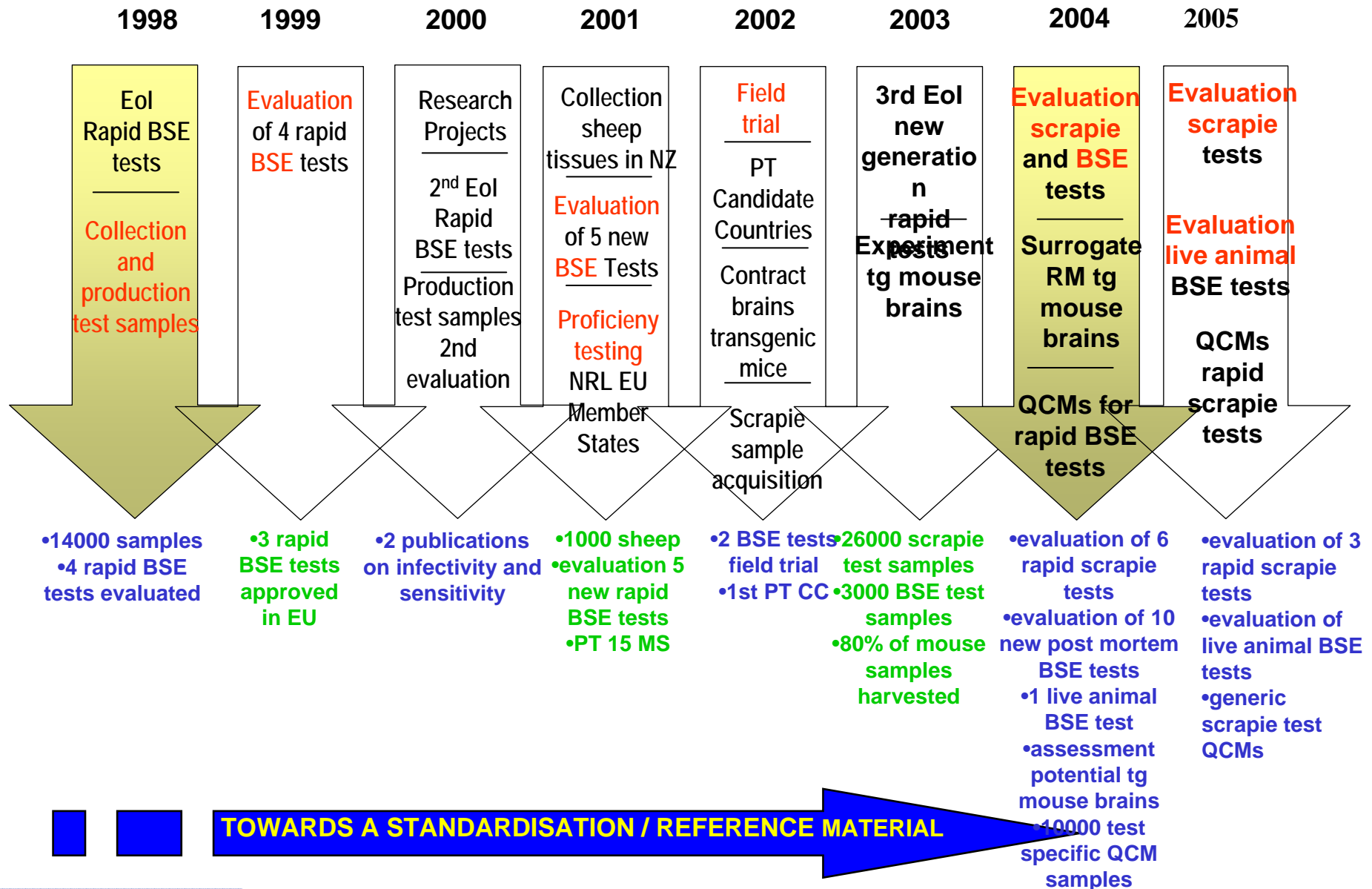




# TSE/BSE related activities at IRMM

Example

Joint Research Centre



## Example

# Crisis Response



**Nuclear Issues** (ITU, Karlsruhe; IPSC, Ispra; IRMM, Geel)  
*Several illicit trafficking cases since 1994*  
Nuclear forensic analysis techniques,  
advice & training

**Food Quality** (IHCP, Ispra; IRMM, Geel)  
*2006 imports of GM-contaminated rice (LLR601)*  
Validation of detection method



**Natural Hazards** (IPSC, Ispra)  
*2005 Pakistan earthquake*  
Damage assessment by satellite

**Humanitarian Crises** (IPSC, Ispra)  
*2006, Lebanon*  
Monitoring of oil spill; damage assessment by satellite

## Some Accountability Efforts

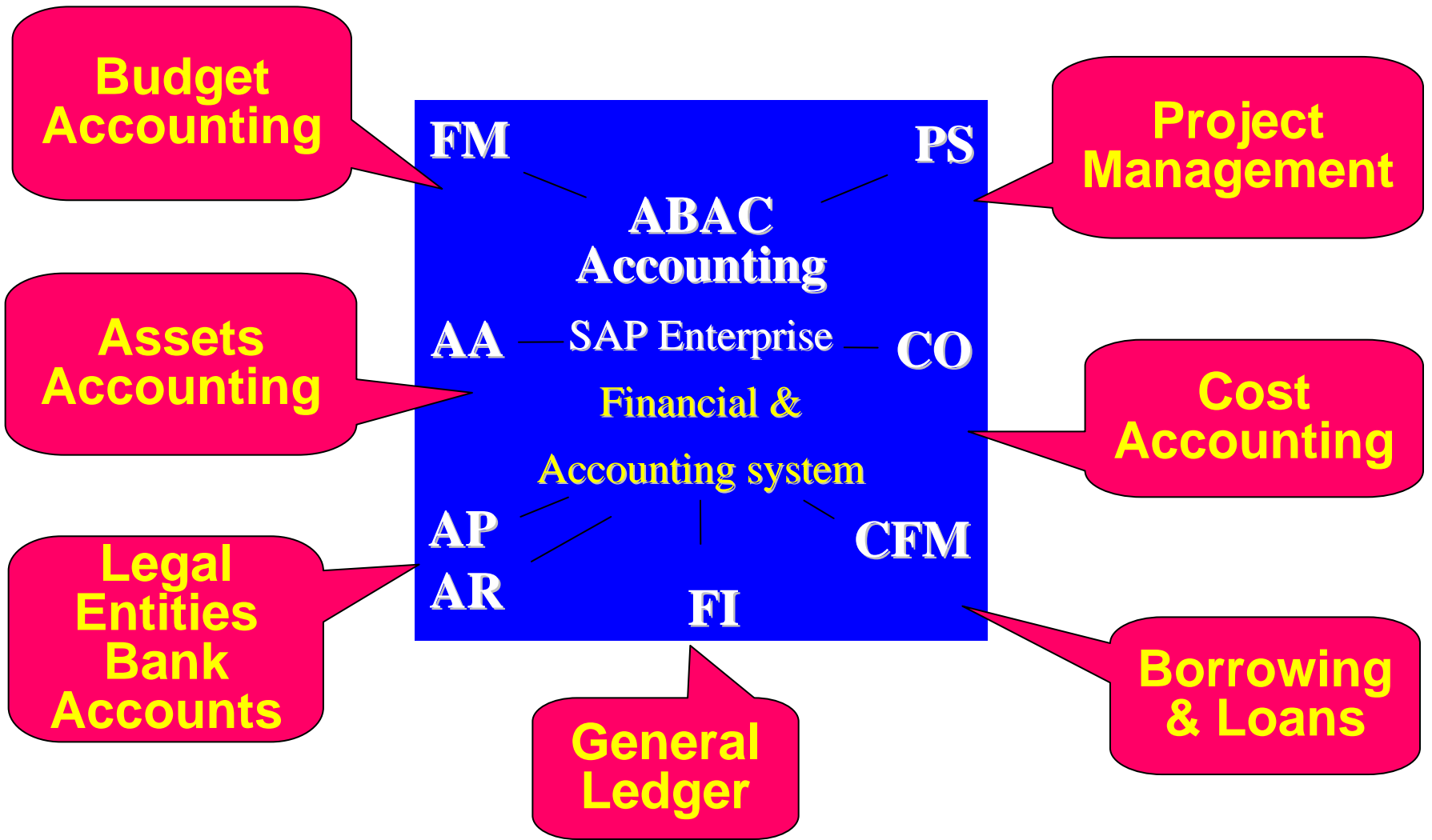
- **Some Milestones towards Improved Accountability**
- **ABM & ABB**
  - Decentralization
  - Budgets (Multi-annual & annual)
  - Bridge between enacted budgets and program operations
  - Evaluation & Program Effectiveness
- **Budget execution & Procurement**
- **Accountability at different Levels**
- **Audits & Investigations**
- **Research for Third Parties**

## Some Milestones towards Improved Accountability

- 1995 - SEM 2000
- 2000 - Activity Based Management (ABB)  
& Activity Based Budgeting (ABM) - 2004
- 2000 - Internal Control Standards – 2001
- 2002 - New Financial Regulation (FR) - 2003
- 2002 - Accrual Based Accounting (IPSAS) - 2005
- 2004 - Integrated Project Management - 2008

# ABAC Global Architecture

Joint Research Centre



# Accountability at different Levels

By	Towards	Through
European Commission (EC)	European Parliament (EP) (+ EU Council)	<ul style="list-style-type: none"> <li>• Financial Statement</li> <li>• Synthesis of AARs</li> </ul> (used in the Discharge procedure)
EC Directorate General (DG) (example JRC)	EC College	<ul style="list-style-type: none"> <li>• Annual Activity Report</li> </ul>
Authorising Officer by Sub-delegation (AOS)	Authorising Officer (AO) = JRC DG	<ul style="list-style-type: none"> <li>• AOS Annual Activity Report</li> </ul>
EC	Organisations	<ul style="list-style-type: none"> <li>• Public Procurement Procedures</li> <li>• Publication of Selected Organisations &amp; Amounts</li> </ul>

# Audits & Investigations

Auditee(s)	Auditor / Investigator	Reporting to
EC ... final beneficiary	European Court of Auditors	European Parliament (+ EU Council)
	European Anti-Fraud Office (OLAF)	Fraud cases: to National Justice Departments  Advice on "Fraud" sensitivity of EU regulations: to EC
EC	Internal Audit Service (IAS)	Through Audit Progress Committee  To EC College
DG services	Internal Audit Capacity (IAC)	Director General

# Tableau de Bord – Score Card



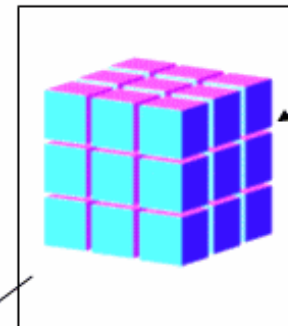
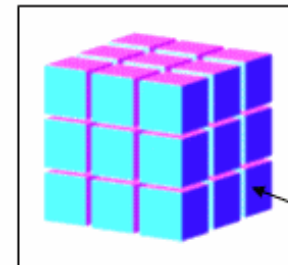
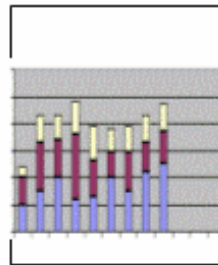
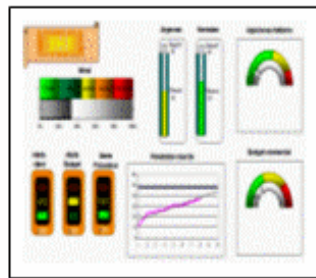
QUOI ?



POURQUOI ?



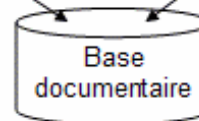
COMMENT ?



Analyse multi-dimensionnelle

1 SIGNALISATION

2 ANALYSE



3 PROSPECTION



# JRC Key Performance Indicators

- Introduction 2001
- Frequency
  - DG: Monthly Monitoring
  - EC College: Yearly Reported
- Categories
  - Support EU policy makers
  - Demonstrate Scientific competence in mission-related areas
  - Human and financial resources

# Tableau de Bord – Score Card

## JRC Indicators

		2003	2004	2005	2006
	<b>Support to EU policy makers</b>				
1	No of product/services delivered to EU policy makers	83	260	963	1260
2	Percent of Inter-service consultations in which JRC has made valuable contribution	13%	14%	17%	14%
3	Deliverables to Member States' institutes (and international organisations)	55	189	596	827
4	Contributions to EU Standardisation and Reference Systems	49	107	188	249
5	Degree of user satisfaction	75%		79%	
6	Strategic Media coverage (written press / tv-radio)	948 / 76	670	1201	1984

# JRC Indicators

	Demonstrate Scientific competence in mission-related areas	2003	2004	2005	2006
7	Number of institutional networks	54	57	94	96
8	Success rate in Shared Cost Action calls	61%	44%	53%	51%
9	Participation of New Member States and Candidate Countries in JRC SCA projects	50%	13%	11%	12%
10	No of mandays of use by external users of JRC large scale facilities	1144	1656	6991	8691
11	Number of peer reviewed journal articles	454	371	597	672
12	Number of conference contributions	414	297	752	657
13	Number of EUR reports		94	285	353
14	Number of books	199	29	64	89
15	No of invited presentations to international conferences	235	219	565	518
16	No of awards/prizes/or other formal recognitions received	11	19	35	41
17	Number of Memberships in scientific boards	41	998	506	549
18	Number of professorships/lectureships		45	85	114
19	Number of new primary patents filed	10	11	9	9
20	Revenue generated from exploitation of intellectual property		320k€	481k€	477k€
21	Number of exploitation agreements	7	5	24	13

# JRC Indicators

	<b>Human and financial resources</b>	2003	2004	2005	2006
22	Budget utilisation on institutional funds	100%	100%	95%	100%
23	Total administrative cost		15%	12%	14%
24	Percentage of payments within the legal limit	92%	90%	79%	88%
25	Revenue generated from external sources	30.1m€	27m€	34.6m€	39.3m€
26	Value of overdue recovery orders			2.7m€	2.4m€
27	Average Number of Training days	5.91	6	7.2	7.5
28	Total gender balance	31%	33%	35%	37%
29	Gender balance in organigramme posts	9%	9%	10%	13%
30	Percentage scientific staff of total	66%	64%	66%	66%
31	Proportion of scientific non—permanent to total staff	35%	40%	35%	41%
32	Open management positions	11%	14%	10%	4%
33	Recruitment time from vacancy of post within 3 months (internal)	63%	72%	47%	55%

## Some References

- Europa – Gateway to the European Union  
[http://europa.eu/index\\_en.htm](http://europa.eu/index_en.htm)
- FP7: the future of European Union research policy  
[http://ec.europa.eu/research/fp7/index\\_en.cfm](http://ec.europa.eu/research/fp7/index_en.cfm)
- JRC  
<http://www.jrc.cec.eu.int>
- Annual Activity Reports  
[http://ec.europa.eu/atwork/synthesis/aar/index\\_en.htm](http://ec.europa.eu/atwork/synthesis/aar/index_en.htm)
- Impact Assessment  
[http://ec.europa.eu/governance/impact/index\\_en.htm](http://ec.europa.eu/governance/impact/index_en.htm)
- EU Press Room  
[http://europa.eu/press\\_room/index\\_en.htm](http://europa.eu/press_room/index_en.htm)
- JRC Press Releases  
[http://www.jrc.cec.eu.int/default.asp@sidsz=more\\_information&sidstsz=press\\_releases.htm](http://www.jrc.cec.eu.int/default.asp@sidsz=more_information&sidstsz=press_releases.htm)

# JRC

## Robust Science for Policy Making

