The Joint Research Centre (JRC): robust science for policy making

Dr Roland Schenkel, Director-General
Joint Research Centre, European Commission

Open Day JRC – Malta, 20 November 2009

http://www.jrc.ec.europa.eu

The Mission of the Joint Research Centre

… is 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.

Our Structure: 7 Institutes in 5 Member States

IRMM - *Geel, Belgium*
Institute for Reference Materials and Measurements

ITU - *Karlsruhe, Germany*
Institute for Transuranium Elements

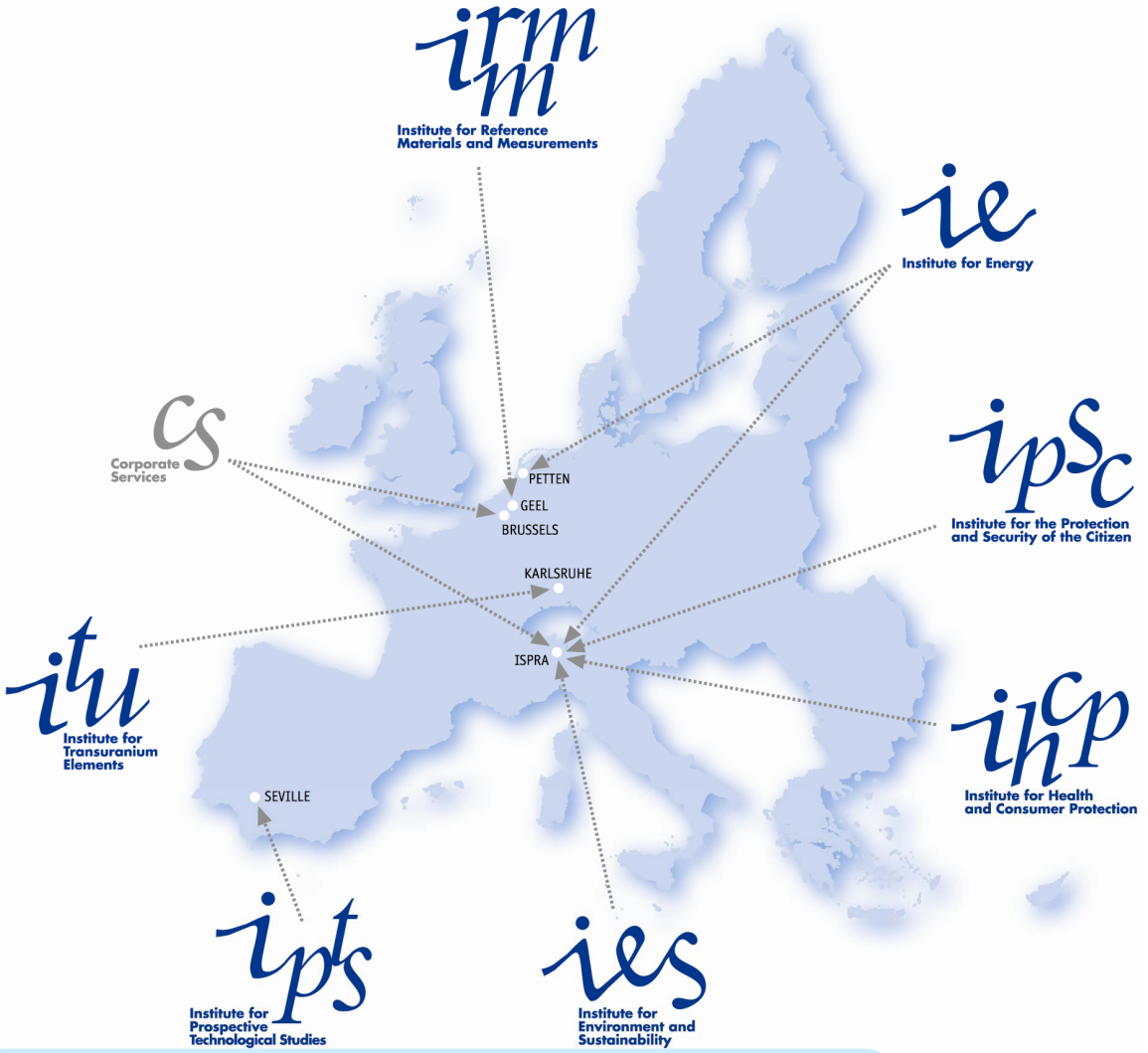
IE - *Petten, The Netherlands and Ispra, Italy*
Institute for Energy

IPSC - *Ispra, Italy*
Institute for the Protection and Security of the Citizen

IES - *Ispra, Italy*
Institute for Environment and Sustainability

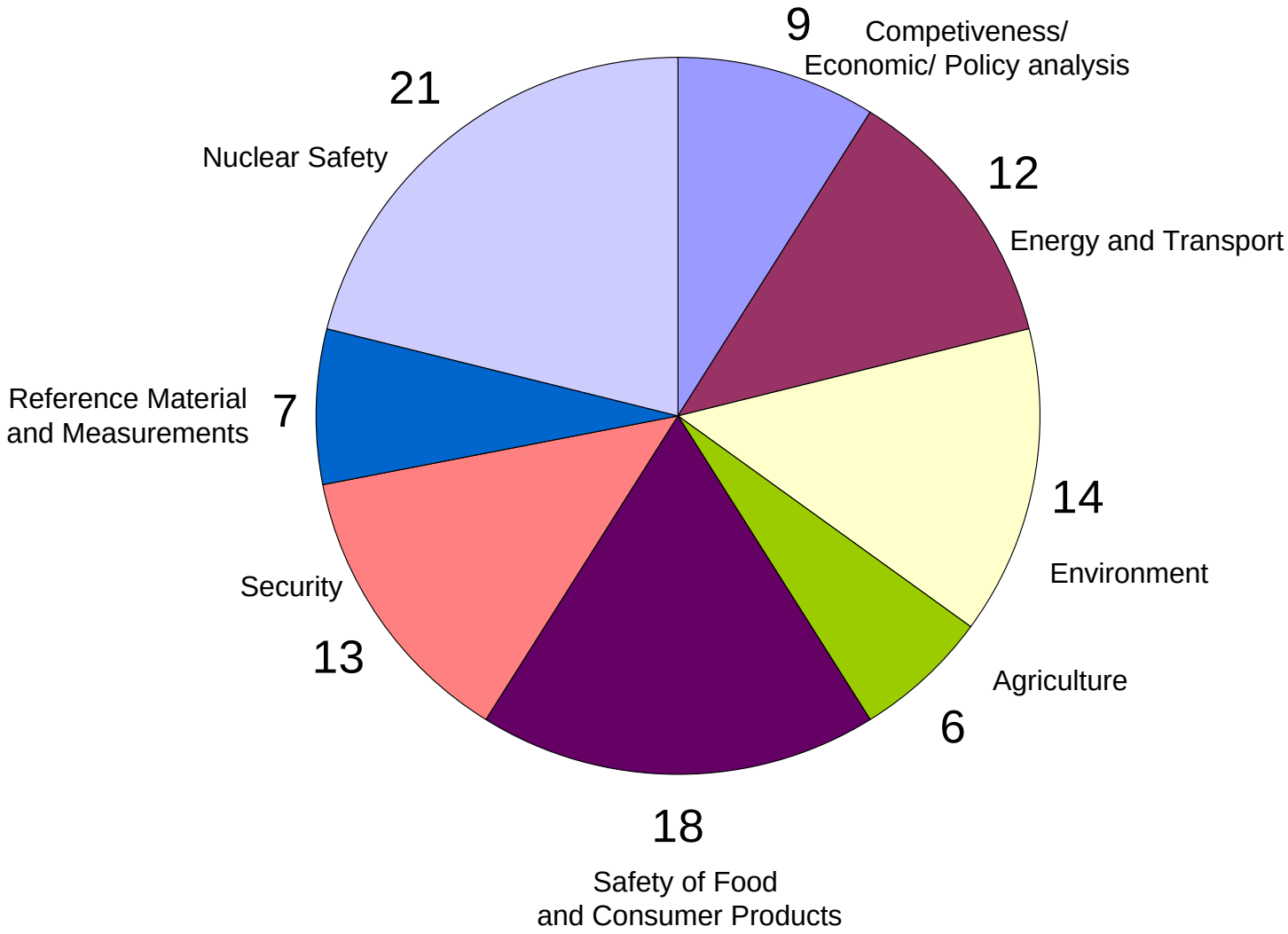
IHCP - *Ispra, Italy*
Institute for Health and Consumer Protection

IPTS - *Seville, Spain*
Institute for Prospective Technological Studies



~ 2650 staff + 250 competitive
~ 330 M€/y budget (+ ~ 40 M€/y competitive income)

JRC Staff Distribution in 2009 (%)



Typology of JRC activities

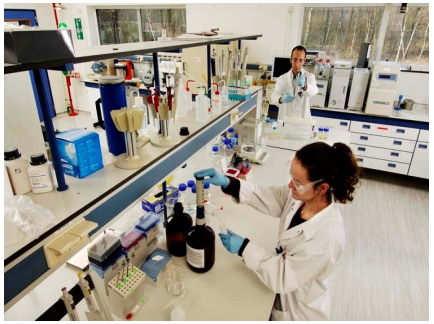
- **EU Policy support:** interaction with Commission policy-makers and stakeholders; direct scientific/technical input into legislative process
- **Operational support:** alert/anticipation, rapid response functions and monitoring of compliance (e.g. crop declarations under Common Agricultural Policy, nuclear safeguards verification)
- **Scientific & technical reference systems:** establish standardised methodologies and measurement protocols (GMO, BSE/TSE, environmental quality, nuclear safety etc); clearing house for reactor safety
- **Research partnerships:** European Research Area, user laboratories, access to large facilities, networks, training and mobility, co-operations
- **Specific actions** towards New Member States and Candidate Countries

Current JRC Priorities

- Contribute to the European Strategic **Energy Technology** (SET) Plan
  - by drafting an updated 'Technology Map' (status and prospects of key energy technologies) and a 'Capacities Map' (overview of energy research capacities and infrastructures in EU Member States). SETIS was launched on 7/10/09 as the online SET-Plan Information System
- Support EU **Climate Change** policies aimed at limiting Global Climate Change to 2°C above pre-industrial levels
  - by means of studies of impact on the hydrological cycle, identifying critical variables to feed current and future models, carry out economic analyses on the impact of emission reduction targets, develop global scenarios for the energy mix and CO_2 emissions allowances, etc.
- Increasing **Internal and External Security** (addressing terrorist threats, fighting nuclear proliferation, supporting border controls etc.)
  - by means of technologies for crisis monitoring, technologies to verify security of nuclear fuels, assessment of physical vulnerability of critical structures, monitoring container traffic, etc.
- Supporting the **Lisbon Goals**
  - by monitoring of research policies and relevant indicators in EU, digital divide, econometric tools, interplay between innovation and regulation, standards and references in support of competitiveness and growth, etc.

Example: Food Safety and Quality (IRMM + IHCP)

- **Method development, validation & harmonisation (e.g. food allergen and BSE tests: 20 BSE tests evaluated, 12 of which approved by Commission)**
- **Measurement evaluation programmes (e.g. heavy metals)**
- **Proficiency testing (e.g. acrylamide)**
- **Monitoring data bases (e.g. European wine)**
- **Reference materials**
- **Help desk in emergency cases**

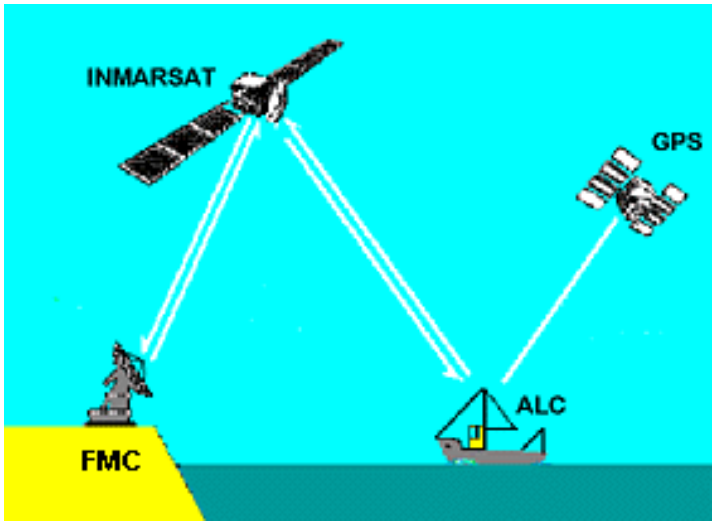


6 CRLs (DG SANCO):

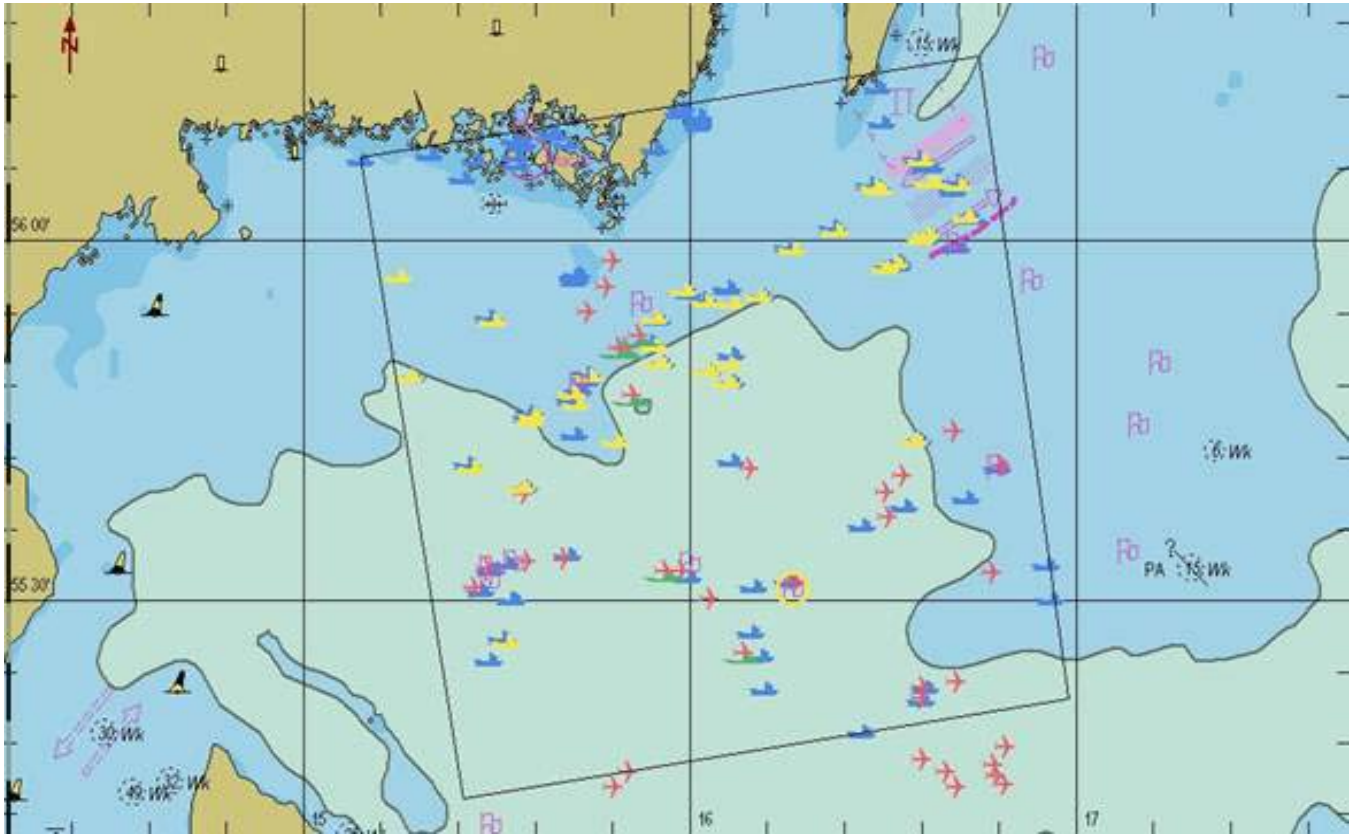
- Feed additives
- Mycotoxins
- Poly-aromatic hydrocarbons
- Heavy metals in food and feed
- GMOs in food and feed
- Food contact materials

Example: S&T Support to Fisheries Policy (IPSC)

Use of remote sensing to identify non-compliant fishing vessels (switched off GPS)



Pilot Project in Baltic Sea: automatic supply of vessel positions to Fisheries Monitoring Centres in Baltic countries (39 minutes after Radarsat data acquisition) *Swedish coastguard checks results with aircraft and coastal radar*



EU Industrial R&D Investment Scoreboard (IPTS)

"*Investing in research: an action plan for Europe*" -Target of 3% GDP investment in research

EU Industrial R&D Investment Scoreboard

- Top 1000 EU and non-EU corporate R&D investors
- Comparisons between companies, sectors, and geographical areas
- Picture of the competitive situation of EU firms in the global R&D environment

Some results from the 2009 Scoreboard:

- World-wide corporate R&D investment up by 6.9% (slightly lower than 9% in 2008)
- Growth of R&D investment of EU companies (7.8%) higher than of non-EU (6.6%).
- Growth in EU-based companies up slightly lower than 2008 (8,6%)
- Europe leading R&D investor in automotive, aerospace and industrial engineering

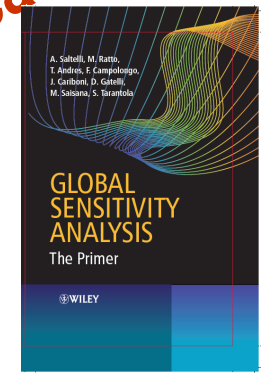
Ranking of the Top 20 EU Companies by level of R&D investment

				R&D Investment		Net Sales	R&D/Net Sales ratio	Operating Profit
Rank	Company	ICB Sector	Country	2008	change 08/07	2008	2008	2008
				€m	%	€m	%	% of Net Sales
			Top 1000 Companies	130,412.32	7.8	5,711,823	2.3	7.8
		number of companies for calculation		*1000*	*983*	*1000*	*990*	*990*
1	Volkswagen	Automobiles & parts (335)	Germany	5,926.00	20.4	113,808	5.2	6.3
2	Nokia	Telecommunications equipment (9578)	Finland	5,321.00	0.8	50,710	10.5	9.8
3	Sanofi-Aventis	Pharmaceuticals (4577)	France	4,608.00	1.0	27,568	16.7	18.8
4	Daimler	Automobiles & parts (335)	Germany	4,442.00	-9.1	95,873	4.6	2.8
5	Robert Bosch	Automobiles & parts (335)	Germany	3,916.00	10.0	45,127	8.7	3.2
6	Siemens	Electrical components & equipment (2733)	Germany	3,836.00	14.0	82,324	4.7	1.8
7	GlaxoSmithKline	Pharmaceuticals (4577)	UK	3,835.56	14.2	25,190	15.2	29.4
8	AstraZeneca	Pharmaceuticals (4577)	UK	3,622.34	-0.1	22,735	15.9	28.9
9	Alcatel-Lucent	Telecommunications equipment (9578)	France	3,167.00	-6.0	16,984	18.6	-30.6
10	Ericsson	Telecommunications equipment (9578)	Sweden	2,975.46	18.9	19,008	15.7	7.2
11	BMW	Automobiles & parts (335)	Germany	2,864.00	-8.9	53,197	5.4	1.6
12	EADS	Aerospace & defence (271)	The Netherlands	2,756.00	2.0	43,265	6.4	6.3
13	Bayer	Chemicals (135)	Germany	2,725.00	3.0	32,918	8.3	10.3
14	Peugeot (PSA)	Automobiles & parts (335)	France	2,372.00	14.4	54,356	4.4	-0.6
15	Renault	Automobiles & parts (335)	France	2,235.00	-9.2	36,499	6.1	0.4
16	Boehringer Ingelheim	Pharmaceuticals (4577)	Germany	2,109.00	21.9	11,595	18.2	16.7
17	Fiat	Automobiles & parts (335)	Italy	1,986.00	14.1	59,380	3.3	5.2
18	Finmeccanica	Aerospace & defence (271)	Italy	1,767.00	-2.2	13,332	13.3	6.9
19	SAP	Software (9537)	Germany	1,627.00	11.4	11,575	14.1	22.8
20	Philips Electronics	Leisure goods (374)	The Netherlands	1,613.00	0.6	26,513	6.1	-0.3

http://iri.jrc.ec.europa.eu/research/scoreboard_2009.htm

JRC's quest for scientific excellence

Publications



Putting pharmacogenetics into practice

Michael M Hopkins[1], Dolores Ibarreta[2], Sibylle Gaisser[3], Christien M Enzing[4], Jim Ryan[5], Paul A Martin[6], Graham Lewis[7], Symone Detmar[4], M Elske van den Akker-van Marle[4], Adam M Hedgecoe[8], Paul Nightingale[1], Marieke Dreiling[3], K Juliane Hartig[3], Wiendie Vullings[4] & Tony Forde[5]

NATURE BIOTECHNOLOGY VOLUME 24 NUMBER 4 APRIL 2006

_Bt_ corn in Spain—the performance of the EU's first GM crop

Manuel Gómez-Barbero, Julio Berbel & Emilio Rodríguez-Cerezo

NATURE BIOTECHNOLOGY
VOLUME 26 NUMBER 4 APRIL 2008

Dolly for dinner? Assessing commercial and regulatory trends in cloned livestock

J Suk[1], A Bruce[2,3], R Gertz[4], C Warkup[5], C B A Whitelaw[5], A Braun[3], C Oram[5], E Rodríguez-Cerezo[7] & I Papatryfon[7]

As cloning technologies become more widely established, will products enter the food chain sooner than regulatory agencies and the public might be prepared for?

NATURE BIOTECHNOLOGY VOLUME 25 NUMBER 1 JANUARY 2007

Formation of a New Dynamical Mode in -Uranium Observed by Inelastic X-Ray and Neutron Scattering

M. E. Manley, M. Yethiraj, H. Sinn, H. M. Volz, A. Alatas, J. C. Lashley, W. L. Hults, G. H. Lander, and J. L. Smith
Physical Review Letters 96(12), 2008

POLICY FORUM

Climate Assessment: What's Next?

Frank Raes and Rob Swart

VOL 318 **SCIENCE**

Awards

AOAC Awards

At the 118th AOAC (Association of Official Analytical Chemists) International Meeting, held in Saint Louis, Missouri (USA) from 19-23 September, Jean Patawels, former Head of the Reference Materials Unit, received the 2004 Reference Material Achievement Award of the Technical Division for Re-

Impacts of Atmospheric Anthropogenic Nitrogen on the Open Ocean

R. A. Duce et al.
SCIENCE VOL 320 16 MAY 2008

The JRC and Malta collaboration

JRC Networks (underpinning legislation):

- Malta organisations participating at 14 JRC Networks (European Soil Bureau Network, European Network for GMO laboratories, Air quality laboratories association …)

Competitive Activities: FP6 and FP7 Indirect Actions:

- 6 projects with JRC and Malta participation (SESTI, WIMAAS, MyOcean, SESAME, SEADATANET, ECOOP)

Collaboration Agreements:

- CAs with Malta Environment and Planning Authority and Civil Protection Department

→ Memorandum of Understanding with University of Malta and Malta Council for Science and Technology on hosting young researchers at JRC institutes to be signed this morning

The JRC and Malta collaboration (cont'd)

Participation at JRC workshops

- 13 Maltese experts participated in 45 JRC specialised workshops in 2008 dealing with complex S&T aspects of the EU legislation

Other activities, events

- JRC – Malta Round Table Event, 27/10/06
- Visit of Mr George Pullicino, Minister for Rural Affairs and Environment, to Ispra on 11/12/06
- Visit of 7 Maltese researchers to Ispra (IES, IPSC), 7-9/03/07, as a follow up of Round Table

Outlook

- 6 new collaborations started after the Round Table in 2006 (e.g. air quality, maritime security, training of PhD/Post-Doc)
- Possible further topics for collaboration to be identified and discussed today
- Grant holders under new MoU will strengthen collaboration in areas of mutual interest

Strategic Developments 2009+

- Corporate vision and strategy (2013+)
- Integration of JRC competences across Institutes
- A more pro-active and anticipatory approach towards support for policy making
- Integrating socio-economic competences
- Increasing modelling capacities
- International collaboration

Joint Research Centre (JRC)

Robust science for policy making