Joint Research Centre's (JRC) Contribution to the Development of ERA

John Bensted-Smith
JRC Director of the Institute of Prospective Technological Studies

What is the JRC?

The JRC is a **Directorate-General** of the European Commission

Since the late 1990s, our mission has been to help put EU policy-making onto a scientifically robust foundation by providing **customer-driven** scientific and technical support for the conception, development, implementation and monitoring of EU policies.
Our "customers" are predominantly other Commission services.

We've adopted recently a **new strategy** of the JRC to more effectively deliver its mission.

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Structure and financing of the JRC

7 Institutes on 5 sites ≅ 2700 staff ≅ 340 M€/y direct from FP7 + 60 M€ earned income

IE – Petten, The Netherlands
Institute for Energy
Director: Giovanni de Santi

IRMM – Geel, Belgium
Institute for Reference Materials and Measurements
Director: Krzysztof Maruszewski

ITU – Karlsruhe, Germany
Institute for Transuranium Elements
Director: Thomas Fanghaenel

IES/ IHCP/ IPSC – Ispra, Italy
Institute for Environment and Sustainability
Director: Leen Hordijk
Institute for Health and Consumer Protection
Director: Elke Anklam
Institute for the Protection and Security of the Citizen
Director: Stephan Lechner

IPTS – Sevilla, Spain
Institute for Prospective Technological Studies
Director: John Bensted-Smith

IPTS ≅ 250 staff ≅ 16 M€/y direct from FP7 + 6 M€ earned income

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Our core policy areas

Towards an open and competitive economy

Development of a low carbon society

Sustainable management of natural resources

Safety of food and consumer products

Nuclear safety and security

Security and crisis management

Reference materials and measurements

ERA Vision 2020 adopted at Competitiveness Council on 2 December 2008

"By 2020, all actors fully benefit from the *'Fifth Freedom'* ***across the ERA: free circulation of researchers, knowledge and technology. The ERA provides*** *attractive conditions* ***and*** *effective and efficient governance* ***for doing research and investing in R&D intensive sectors in Europe. It creates strong*** *added value* ***by*** *fostering* ***a healthy*** *Europe-wide scientific competition* ***whilst*** *ensuring* ***the appropriate level of*** *cooperation and coordination****. It is*** *responsive to the needs and ambitions of citizens* ***and effectively*** *contributes* ***to the*** *sustainable development and competitiveness* ***of Europe."***

A cornerstone of Innovation Union Flagship of the Europe 2020 strategy because of:

- Globalisation **of knowledge production**
- **Impact of the** crisis **on public and private finance, we need to do more with reduced means through leverage effects, integration and cooperation**
- R&D is a source of future economic growth and employment
- **EU target of** 3% of GDP for R&D **in 2020 is maintained**

➢ ***An ERA framework and supporting measures to remove obstacles for mobility and cross-border cooperation to be in force by 2014***

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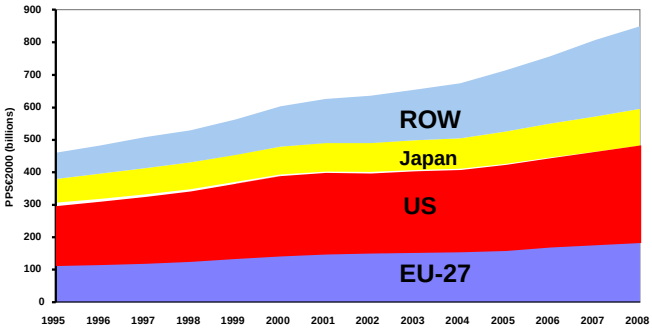
Globalisation of knowledge



Declining EU share of knowledge production

Evolution of World R&D expenditure in real terms, PPS€ at 2000 prices and exchange rates, 1995-2008

Stagnating business R&D

Average annual growth as % of GDP, EU-27, US, Japan, South Korea & China, 2000-2007

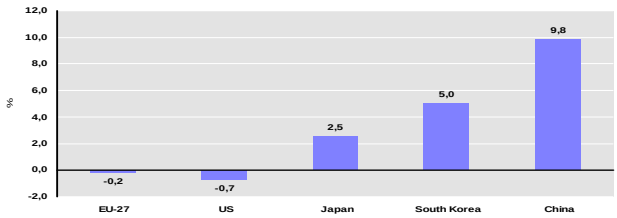


Figure Private Expenditure on R&D as % of GDP [1] - average annual growth (%) in the major economies, 2000-2007 [2]

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How will JRC support implementation of ERA?

- **Linking ERA and EU policy making**
  - Support to Joint Undertakings and other instruments
  - Support to ERA building blocks
  - Monitoring and analyzing research and innovation policies of MS, Associated countries and some third countries (ERAWATCH)

Linking ERA and EU policy making

Providing scientific advice to all stages of EU policy-making in a number of areas, e.g.:

- ERA Framework due to be in place by 2014
- The EU research and innovation funding instruments

JRC will play a role in making expertise available in ERA to policy makers

A new scientific foresight and policy anticipation capacity will be established

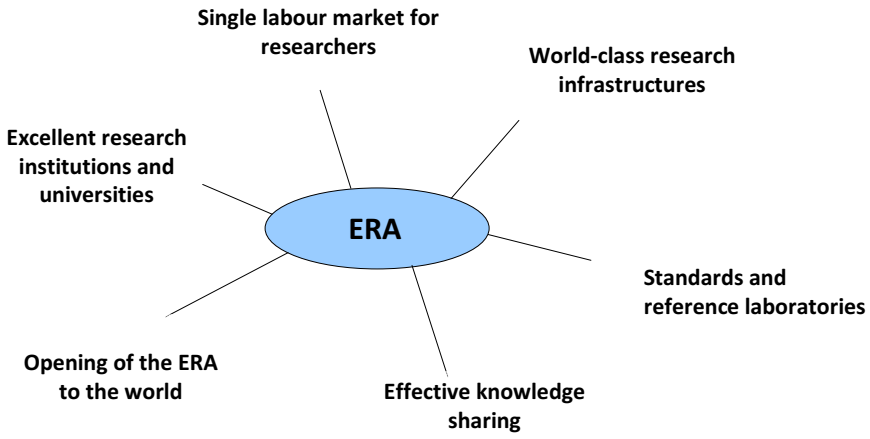
Support to Joint Undertakings and other Instruments

JRC supports Joint Undertakings (such as Joint Technology Initiatives and European Technology platforms) e.g.

- Set plan
- European Association of National Metrology Institutes - EURAMET

JRC will continue supporting Joint Undertakings in areas related to its strategy e.g. innovation partnerships announced in the recent Innovation Union Communication or joint programming Initiatives

ERA - building blocks



World-class Research Infrastructures

Essential for Europe's researchers to stay at the forefront of research development

Key component of Europe's competitiveness in both basic and applied research;

Key Challenges:

- To overcome fragmentation in Europe in the field of Research Infrastructures
- To improve the efficiency of services and access to European Research Infrastructures
- To cope with their increasing cost and complexity
- To further develop and better exploit the potential of e-infrastructures

Involvement of the JRC

JRC has 31 world-class research infrastructures, many of which are being used by ERA community (Hot-cells, Reaction Wall, GELINA, …). Two of them are part of the European Strategy Forum on Research Infrastructures (ESFRI):

- Integrating Activity: SERIES – Seismic Engineering Research Infrastructures for European Synergies (JRC-IPSC);
- Integrating Activity: EUSAAR – European Supersites for Atmospheric Aerosol Research (JRC-IES)

The JRC will further open its:

- infrastructure facilities to use by ERA researchers based on excellence and strategic relations with key European Universities and research institutions;
- on-line information systems and databases to the world;

Within the framework of ESFRI the JRC will also seek partnerships with similar facilities in order to improve the integration of research efforts

Key Challenges:

Ensure quality and availability of researchers across Europe and raise the attraction of Europe to the best research talents world-wide

Mainstream mobility between institutions, between sectors and across borders, based on the "brain circulation" paradigm

Involvement of JRC

Assess remaining barriers to researchers mobility in EU-27 in support to policy development;

Implementing actions as far as possible under Commission rules (recruitment of core staff and contractual agents)

- Recruiting ~ 600 top doctorate, post-doctorate, visiting scientists and detached national experts in 2010 from EU-27 and Associated Countries. Essential to build capacity and carry out sound research in support to policy
- Providing tailored training programmes in some areas (e.g., actinide science, GMO detection, metrology in the frame of the EU acquis, safeguards and non-proliferation..)

Standards and reference laboratories

The JRC runs e.g.:

- 6 European Reference Laboratories (EURF) in the areas of e.g. food and feed, genetically modified organisms
- JRC runs the Integrated Pollution and Prevention and Control Bureau and the Co-existence Bureau (organic/conventional and GM crops)
- JRC also contributes to pre-normative research and harmonisation of measurements
- ECVAM: Validation of alternatives to animal testing
- Contribution to INSPIRE (harmonisation of spatial data in the EU)

Research institutions

Key Challenges

- Excellent research institutions, including universities: key players in the knowledge-based economy development, at the heart of the knowledge triangle
- Implementation of Commission Communication “Modernisation agenda for universities: education, research and innovation”: research excellence, governance, funding, partnerships with business, knowledge exchange, networking,…
- Largely in hands of Member States and research institutions themselves

Involvement of the JRC

- Support to the sensitivity analysis of University ranking methods
- A University observatory of 200 research intensive Universities from all MS and Associated Countries is being established. Analysis of their participation in the Framework Programme, funding structures, governance, etc. and relation to performance in excellence rankings being carried out

Knowledge transfer and IP management

Key Challenges

– To enhance the impact of public research on European socio-economic growth by strengthening knowledge transfer between Public Research Organisations (PROs) and the private sector at national, European and international levels

– To improve the management of intellectual property arising from research by PROs (including universities), and the development of relations with the private sector

Involvement of the JRC

– JRC contributed to “Code of Practice” (2008) including key principles for improving national Intellectual Property (IP) and knowledge transfer policies, and guidance for PROs to set up institutional policies and knowledge transfer systems

– JRC could be one player among many others to provide a modest contribution to implementation (awareness raising seminars etc) – but primary focus will be to assist policy developments within Commission services

Opening of ERA to the world

Key Challenges

- Globalisation and global challenges (e.g. climate change, energy security)
- Rise of "non-traditional" research partner countries and research locations ("new global S&T players")
- Facilitation of knowledge transfer at global level
- The need to ensure equitable and fair access to IP generated in international R&D collaborations
- The need to avoid duplication of activities between the Member States and the European Community with third country partners; try to speak with “one voice”

Involvement of the JRC

JRC is supporting the Scientific Forum on International Cooperation (SFIC) and RTD in:

- monitoring research policies in a number of third countries (ERAWATCH)
- identifying common MS priorities and analyzing cooperation instruments (a first report on Europe-US cooperation already prepared, similar work being done for Russia)

JRC has clear framework in its nuclear international co-operation (GEN IV, FP EURATOM, non-proliferation, IAEA)

The recent EU-Africa partnership provides a strategic framework for expanding JRC activities on/for Africa

The pilot initiatives (energy, cooperation with India) could be an instrument for JRC to develop a more strategic approach to its international cooperation with selected partners (US, China, India, etc.), particularly in the non-nuclear area

JRC will support the development of the Commission proposals for the next EU R&I funding instruments (FP8,…) due in 2011 and for the ERA Framework due in 2012

JRC will support the implementation of Innovation Union commitments, including innovation partnerships

JRC will as an organisation implement the ERA principles applicable to it (infrastructures, recruitment of researchers, international cooperation, …)