International Cooperation in FP7 (2007-2013)

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FP7 2007 - 2013
Specific Programmes

Cooperation – **Collaborative research**

Ideas – **Frontier Research**

People – **Human Potential**

Capacities – **Research Capacity**

+

JRC (non-nuclear)

JRC (nuclear)

Euratom

Cooperation – **Collaborative research**

9 Thematic Priorities

1. Health
2. Food, agriculture and biotechnology
3. Information and communication technologies
4. Nanosciences, nanotechnologies, materials and new production technologies
5. Energy
6. Environment (including climate change)
7. Transport (including aeronautics)
8. Socio-economic sciences and the humanities
9. Security and space

+ Euratom: Fusion energy research, nuclear fission and radiation protection

1. Health

Biotechnology, generic tools and technologies for human health

High-throughput research, Detection, diagnosis and monitoring

Suitability, safety and efficacy of therapies , Innovative therapeutic approaches and interventions

Translating research for human health

Integrating biological data and processes
Research on the brain and related diseases, human development and ageing

Translational research in major infectious diseases and other major diseases. .

Optimising the delivery of healthcare to European citizens

Translating Quality, efficiency and solidarity of health care systems
including transitional health systems
Enhanced health promotion and disease prevention and better use of medicines

2. Food, Agriculture and Biotechnology

Sustainable production and management of biological resources from land, forest, and aquatic environments

- Sustainable production and management of biological resources
- Agriculture, <u>horticulture,</u> forestry, fisheries and aquaculture
- Optimised animal <u>health,</u>
- European Knowledge Based Bio-Economy (KBBE)

"Fork to farm": Food, health and well being

- Consumer behaviour <u>and consumer preferences</u>
- <u>Beneficial and harmful</u> dietary factors
- Innovation in the European food industry
- Chemical and microbiological safety
- Protecting both human health and the environment

Life sciences and biotechnology for sustainable non-food products and processes

- Technologies for terrestrial or marine biomass production
- Industrial biotechnologies within whole crop <u>and forest biomass</u>
- Biotechnology to detect, monitor, prevent, treat and remove pollution<u>.</u>
- <u>Maximising the economic value of waste and by-products</u>
- <u>Maximising potentially energy-saving bio-processes</u>

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3. Information and Communication Technologies

ICT Technology Pillars

Nano-electronics, photonics and integrated micro/nano-systems
Capacity communication networks:
Embedded systems, computing and control:
Software, Grids, security and dependability:
Knowledge, cognitive and learning systems:
Simulation, visualisation, interaction and mixed realities
New perspectives in ICT drawing on other science and technology disciplines

Integration of Technologies

Personal environments:
Home environments:
Robotic systems:
Intelligent infrastructures:

3. Information and Communication Technologies

Applications Research

ICT meeting societal challenges: *health, governments: inclusion: mobility, environment, <u>risk management</u> and sustainable development ICT for content, creativity and personal development: ICT supporting businesses and industry: ICT for trust and confidence*

Future and Emerging Technologies

A *Future and Emerging Technologies* activity will attract and foster trans-disciplinary

research excellence in emerging ICT-related research domains

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4. Nanosciences, Nanotechnologies, Materials and new Production Technologies

•Nanosciences and Nanotechnologies
• Interactions of atoms, molecules
•Realization of nanostructures
•Understanding the natural processes at nanometric scale;
•Processes for nano-fabrication, surface functionalization, thin layers, self assembling properties;
•Methods and processes for measuring and characterization.

Materials
•Multifunctional surfaces and materials with tailored properties
•Performance for new products and processes as well as for their repair.
•High performance multifunctional materials with a wide range of applications.

4. Nanosciences, Nanotechnologies, Materials and new Production Technologies

New Production

- Development and validation of new industrial models
- Adaptive production systems
- Networked production
- Tools for the rapid transfer and integration of new technologies into the design and operation of manufacturing processes;
- Exploitation of the convergence of the nano-, micro, bio-, info- and cognitive technologies to develop new added value products and engineering concepts and the possibility of new industries.

Integration of technologies for industrial applications

New applications and novel, step-change solutions responding to major challenges, as well as to the RTD needs identified by the different European Technology Platforms.

5. Energy

- **Hydrogen and fuel cells**
- **Renewable electricity generation** Photovoltaics, wind and biomass
- **Renewable fuel production** Biofuels in particular for transport and electricity
- **Renewables for heating and cooling**
- **CO2 capture and storage technologies for zero emission power generation**
- **Clean coal technologies**
- **Smart energy networks** More integrated European energy market
- **Energy efficiency and savings** Eco-buildings
- **Knowledge for energy policy making**

6. Environment (inc. climate change)

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

Sustainable Management of Resources
Conservation and sustainable management of natural ..
Management of marine environments

Environmental Technologies
Protection conservation and enhancement of cultural heritage
Technology assessment

Earth observation and assessment tools
Earth observation
Assessment tools for sustainable development

7. Transport (inc. Aeronautics)

Aeronautics and air transport

Greening of air transport
Increasing time efficiency
Ensuring customer satisfaction and safety
Improving cost efficiency
Protection of aircraft
Pioneering the air transport

Surface transport (rail, road and waterborne)

The greening of surface transport
Encouraging and increasing modal shift
Ensuring sustainable urban mobility
Improving safety and security
Strengthening competitiveness

Support to the European global satellite navigation system (Galileo)

8. Socio-Economic Sciences and the Humanities

Growth, employment and competitiveness in a knowledge society

Combining economic, social and environmental objectives in a European perspective

Major trends in society and their implications

Europe in the world

The citizen in the European Union

Socio-economic and scientific indicators

Foresight activities

9. Space

Space-based applications at the service of the European Society
Global Monitoring for Environment and Security (GMES)
Application of Satellite Communication

Exploration of space
R&D synergies with initiatives of ESA

RTD for strengthening space foundations
Space technology
Space sciences

10. Security

Security of citizens

Security of infrastructures and utilities

Intelligent surveillance and border security:

Restoring security and safety in case of crisis

Security Systems Integration, interconnectivity and interoperability

Security and society

Security Research co-ordination and structuring

Cooperation – Collaborative research

- Under each theme there will be sufficient flexibility to address both *Emerging needs* and *Unforeseen policy needs*
- Dissemination of knowledge and transfer of results will be supported in all thematic areas
- Support will be implemented across all themes through:

Collaborative research
(Collaborative projects; Networks of Excellence; Coordination/support actions)

Joint Technology Initiatives

Coordination of non-Community research programmes
(ERA-NET; ERA-NET+; Article 169)

International Cooperation

Coordination of non-Community research programmes

- Coordination of national and regional programmes - actions will use the tools:
  - ERA-NET
  - ERA-NET PLUS
  - Article 169

  May cover subjects beyond the nine themes
- Coordination with European programmes
  - Addresses principally intergovernmental structures such as EUREKA, COST, etc

Technology Platforms

- **http://cordis.europa.eu.int/technology-platforms/home_en.html**

- **29 Technology Platforms listed:**
- Advanced Engineering Materials and Technologies **- EuMaT**
- European Construction Technology Platform **- ECTP**
- European Road Transport Research Advisory Council **– ERTRAC**
- Forest based sector Technology Platform **- Forestry**

Joint Technology Initiatives

Hydrogen and Fuel Cells for a Sustainable Energy Future

Global Monitoring for Environment and Security

Aeronautics and Air Transport

Innovative Medicines for the Citizens of Europe
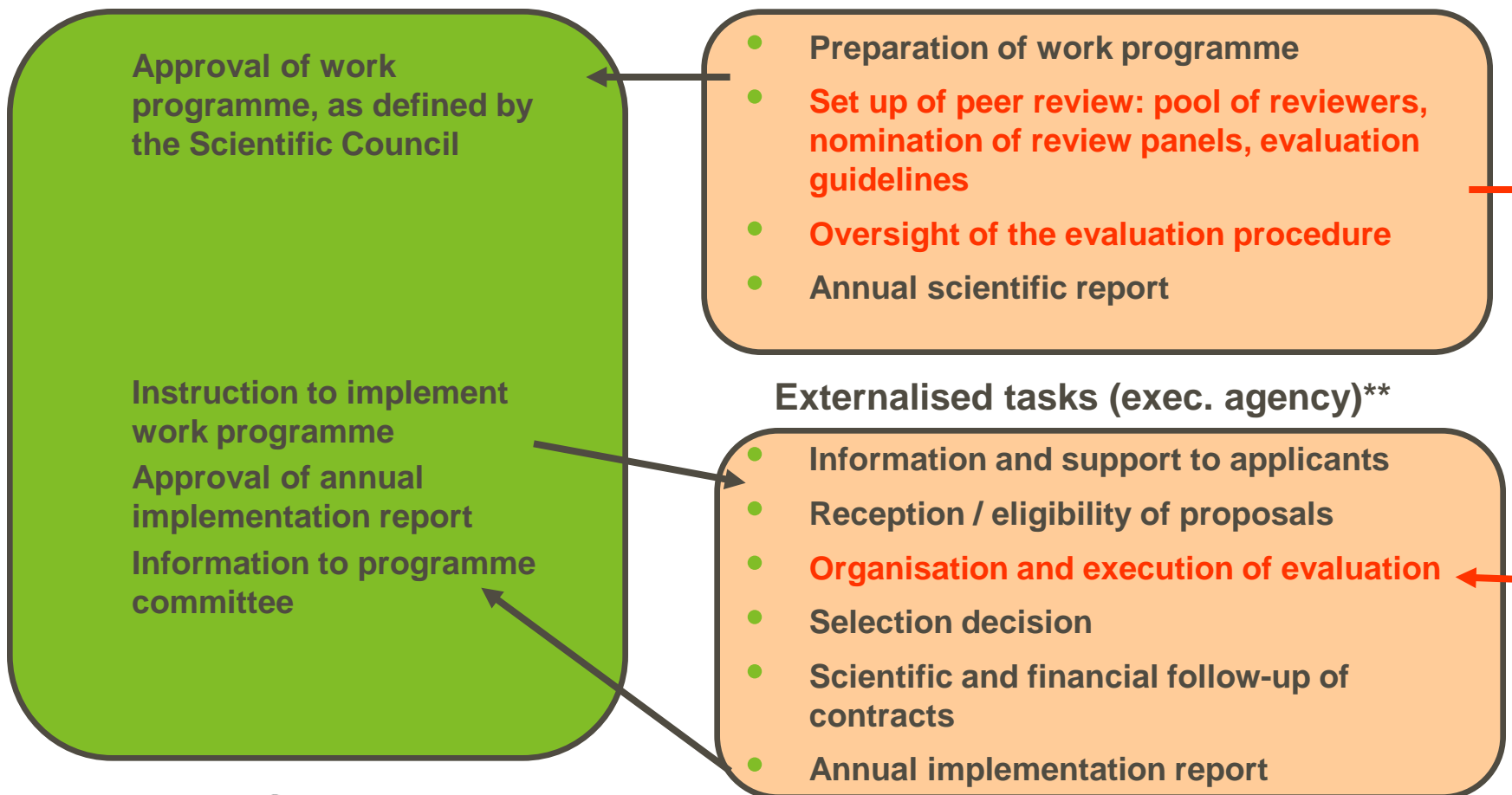
Towards new Nanoelectronics Approaches

Embedded systems

Other possible themes to be identified later…

![Europa programmen logo] ![VINNOVA logo]

Ideas – Frontier Research

ERC – European Research Council

Commission

Scientific Council*

- Approval of work programme, as defined by the Scientific Council

- **Preparation of work programme**
- **Set up of peer review: pool of reviewers, nomination of review panels, evaluation guidelines**
- **Oversight of the evaluation procedure**
- **Annual scientific report**

- Instruction to implement work programme
- Approval of annual implementation report
- Information to programme committee

Externalised tasks (exec. agency)**

- **Information and support to applicants**
- **Reception / eligibility of proposals**
- **Organisation and execution of evaluation**
- **Selection decision**
- **Scientific and financial follow-up of contracts**
- **Annual implementation report**

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*   Created by Commission decision
* *   Under the responsibility of the Commission

People – Human Potential

Initial training of researchers
Marie Curie Networks

Life-long training and career development
Individual Fellowships
Co-financing of regional/national/international programmes

Industry-academia pathways and partnerships
Industry-Academia Scheme

International dimension
Outgoing International Fellowships; Incoming International Fellowships
International Cooperation Scheme; Reintegration grants

Specific actions
Excellence awards

Capacities – Research Capacity

1. Research Infrastructures
2. Research for the benefit of SMEs
3. Regions of Knowledge
4. Research Potential
5. Science in Society
6. Activities of International Cooperation

1. Research Infrastructures

Support to existing research infrastructures:

Transnational Access

Integrating activities

Research e-infrastructures

Support to new research infrastructures:

Construction of new research infrastructures and major updates of existing ones

Design studies

2. Research for the benefit of SMEs

Research for SMEs

Research for SME associations

Encourage and facilitate SME participation across FP7

+ under the Competitiveness and Innovation Programme (CIP):

**Support services provided by networks to encourage
SME participation in FP7 (awareness, identification of needs, assistance)**

6. Activities of International Cooperation

"Horizontal" support actions and measures not carried out in the *Cooperation* or *People* programmes

Two interdependent objectives:

Support competitiveness through strategic partnerships with 3rd countries in selected fields and by engaging the best 3rd country scientists to work in and with Europe

Address specific problems that 3rd countries face or that have a global character, on the basis of mutual interest and mutual benefit

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Information

- EU research: http://europa.eu.int/comm/research
- Seventh Framework Programme: http://cordis.europa.eu/fp7/
- RTD info magazine: http://europa.eu.int/comm/research/rtdinfo/
- Information requests: research@cec.eu.int