Transport research priorities setting up and funding in Europe

A governance change

Jean Pierre MEDEVIELLE
Some historical reminding for surface transport research

After second World War II

- 1944/1955 - Rebuilding infrastructure and Iron Curtain
- 1960/1970 - Role of Intergovernmental cooperation OECD, ECMT, COST, NATO civilian research programs for the West, and role of COMECOM for the East
- 1980/1985 - Setting up through the European Treaties of European transport policy and research policy
- 1989 - Berlin Wall Fall, Maastricht Treaties and beginning of European reunification and appearance of transport research at EC/EU level
1944/1955 - Rebuilding infrastructure and Iron Curtain

- Road research laboratories
- Integrated rail research to historical operators
- National waterways and harbors technical centers
1960/1970 - Role of Intergovernmental cooperation OECD, ECMT, COST, NATO civilian research programs for the West, and role of COMECOM for the East

- Road and road transport research program OECD
- Road safety vehicle
- Transport economics research ECMT
- Road vehicle technical research requirements COMECOM
- Road research COMECOM
- Creation of transport research lab
- COST transport domain
1980/1985 - Setting up through the European Treaties of transport policy and research policy

- Appearance of transport related research EC level 1988
- Setting up of transport related research at national level 1982 – 1992
- Universities enter the field of transport research
1989 - Berlin Wall Fall, Maastricht Treaties and beginning of European reunification and appearance of transport research at EC/EU level

- Involvement of all Europe in FRDPs on transport related research (transport policy, all related policies ENV, ENE, ...) industry relevance, safety authorities, ... academic)
- Creation of national clusters in academia and RTO
- Development in all countries of transport research programs
New drivers for surface transport related research

- The so called Lisbon Agenda
- The European Research Area and STERA
- The Barcelona Agenda
- The role of stakeholders
- The new public budgets processes (EU, MS, Regional authorities)
The so called Lisbon Agenda

- Europe knowledge society through a European Research and innovation Area
The European Research Area and STERA

European Research Area

3 concepts

- the creation of an "internal market" in research (free movement of knowledge, researchers and technology)
- the restructuring of the European research fabric (improved coordination of national research activities and policies)
- the development of a European research policy (taking into account other EU and national policies)

STERA = Surface Transport European Research Area – See ECTRI Strategic Paper as example of contribution by a European Trade Association positioning ECTRI and its members in STERA
The Barcelona Agenda

EU target of 3 % GDP

The two main problems are:

- For the smaller countries with less than 2 % GDP
- For the biggest countries with less than 3 % GDP
- => need for strong national policies besides EC policy
The role of stakeholders

- Academia and RTOs
- Industry (OEMs, suppliers, operators, infra operators)
- Public bodies and agencies (safety, regulatory, ..)
- Society
- Funders
The new public budgets processes (EU, MS, Regional authorities)

- Mission oriented
- Project oriented
Two methods

- The EC “coordination”
- The OMC method
The EC “coordination”

- ERANET and ERANET +
- European Technology Platforms
- Networks of Excellence (NoE)
- Articles 169 - 171
ERANET and ERANET +

- Coordination of research programs through coordination of public funders
- ERANET transport, ERANET road, …
European Technology Platforms

- ERTRAC, ERRAC, WATERBORNE, ARTEMIS, NANIAC, H2FC, BIOFUELS, MANUFACTURING...

- Interaction between all stakeholders around strategic research agenda setting up
Networks of Excellence (NoE)

- Coordination integration of supply side of research HUMANIST, APSN, EURNEX, …
- Trial and test of new governance and management concept relevant to institutions, scientists and young scientists
- Trial and test of efficiency and productivity of knowledge production through process oriented activities
- Preparation of the next generation of scientists (for academia but other stakeholders also)
The OMC method

Concept created by OECD and used by EU

- Reconsidering national and European research and innovation systems
- Reconsidering governance of the demand and supply side
- Reconsidering 2007 the ERA content
Reconsidering national and European research and innovation systems

- EU (EC + MS) transport related research and innovation is one of the domain but integrated to all the S & T domains (no more separation)
- One triangle: Research Innovation Education
Reconsidering governance of the demand and supply side

- Creation of national funding agencies
- Stimulation of funding by foundations
- Stimulation of private funding by industry and banking and VC industry
- Capture the excellence and the relevance for every type of stakeholders putting economy and sustainability as key concepts
- Stimulation of the interaction between stakeholders
Reconsidering governance of the demand and supply side

- Stimulation of the excellence and relevance of the supply side (education, research)
- Appearance of two new concepts ad hoc for the KS focused and frontier research
- Another triangle
  - Regional and local anchorage
  - National and European integration
  - International excellence and relevance
Reconsidering 2007 the ERA content


New ERA vision

ERA being reality

- Scientific staff Common Market
- World class research infrastructure
- Research entities (incl. Universities) strengthening
- Knowledge sharing and transfer
- Research programs and priorities optimization
- ERA global openness and international cooperation
The new How

- New research funding agencies
- The technological platforms and JTIs
- The creation of clusters
- The structuration of research supplying side
New research funding agencies

- All domain, no specific domain
- Aimed at stakeholders, industry, academia, …
The technological platforms

- EU, National platforms (Predit, Möbilität, ...)
- JTIs
The creation of clusters
(even in Eastern countries and smaller European countries)

- Scientific clusters
  
  Supply side of education and research (Universities, Higher Education and RTOs)
  - Poles of excellence, scientific research and education pole (FR), …
  - NoE, advanced thematic research networks (FR)
  - Engineering research national network (UK)
  - Elite universities (UK, DE, …), EIT (EC)
The creation of clusters
(even in Eastern countries and smaller European countries)

- Competitiveness clusters
  
  *Aimed at the interaction between academia (and RTOs) and industry*
  - Pôles de compétitivité (FR, BE, NL, PL, …)
  - Competitiveness clusters (SE, …)
  - Excellenz Net (DE, AT, …)

- Scientific parks, technical poles
  
  FR, DE, UK, SE, ES, …
The structuration of research supplying side

- Scientific clusters aimed at excellence
- Incentives for focused research (FHG and VTT models… Carnot, …)
- Incentives for frontier research (ERC, ad hoc scheme from national agencies)
- Incentives for SMEs and spin offs
Coming back to surface transport

Here are some examples concerning surface transport related research

- Research priorities
- Funding
- How to deal with for an academia (Universities or RTO – National transport research institutes)
Research priorities

- Transport and surface transport are newly recognized as a scientific domain in OECD Frascati revised Manual (02 2007)
- FRDP transport related research (see detail after)
- COST transport and urban development domains
- National and bilateral or ERANET calls (see detail after)
- Regional (or Länder) calls or programs or clusters for transport research
Funding

- FRDP
- COST + OECD-ECMT-ITF
- EUREKA
- ERANET and ERANET +
- Bilateral programs
- National programs and new funding agencies
- Regional or local programs and new funding agencies (except for the smallest countries when NUTS1 = NUTS2)
- Private foundations
How to deal with for an academia (Universities or RTO – transport research institutes)

- Project culture development
- Development of scientific excellence (“focused” and “frontier – pre focused” research)
- Creation of tools and instruments to cope with advanced research governance and management to support scientists in their projects (and contracts)
Knowledge Society action plan

Structural funds including cohesion and accession funds

FRDP 7 2007-2013
50 521 M€ incl. JRC (2007-2013)
+ 4 061 M€ EURATOM (2007-2013)

1st CIP 2007-2013
3 651 GE

Education and Training Programme

3 Specific Programmes Policy objectives

Entrepreneurship and Innovation Programme
2 166 M€

ICT Policy support programme
728 M€

Intelligent Energy Europe Programme
727 M€

- Improvemement to the regulatory environment for enterprise and innovation
  - SMEs support
  - Eco-innovation
    430€

- Regulatory and research actions towards convergence between network services, media content and new electronic devices
  - Bridge research/adoption including testing grounds
  - Inclusion European Information Society (inclusive, quality of life, public research)

- Energy efficiency demand and uptake
- Renewable energy and Energy diversification
- Diversification of fuels and energy efficiency in transport

CAR 21 / SHIP 21 / RAIL 21 ?

National, regional and local
7 FRDP

Knowledge Society action plan

Structural funds including cohesion and accession funds
FRDP 7 2007-2013
1st CIP 2007-2013 3 621 G€
Education and Training Programme

7 Specific Programmes Policy objectives
Including JRC non-nuclear 1 751 M€

COOPERATION 32 365 M€
9 thematic subprogrammes
1. Health 6 050 M€
2. Food, agriculture and biotechnology 1 935 M€
3. ICTs 9 110 M€
4. Nanosciences and Technologies materials and new production technologies 3 500 M€
5. Energy 2 300 M€
6. Environment (incl. climate change) 1900 M€
7. Transport (incl. aeronautics) 4 180 M€
8. Socio Economic Sciences and Humanities 610 M€
9. Security 1 430 M€
10. Space 1 350 M€

IDEAS 7 460 M€ Investigator-driven Frontier Research
ERC

PEOPLE 4 727 M€ Marie Curie

Executive Agency under supervision of EC

CAPACITIES 4 217 M€
- Research infrastructures 1 830 M€
- Research potential in EU convergence Regions 375 M€
- Regions of knowledge (Regional research driven Clusters) 1 126 M€
- Research for SMEs 1 336 M€
- Science in society 285 M€
- International cooperation 105 M€
- Coherent development of research policies 70 M€

National, regional, local levels

ERANET+, ERANET, Regional and local, national, multilateral or intergovernmental, research and innovation programmes
ERC
Ideas Specific Program

- Two streams of activity:
  1. ERC Starting Independent Researcher Grant scheme (ERC Starting Grant)
     → Call for proposals to be published in early 2007
  2. ERC Advanced Investigator Researcher Grant scheme (ERC Advanced Grant)
     → Call for proposals at a later stage
ERC

ERC Grants Strategic principles

- All fields of science and scholarship are eligible
  - investigator-driven, bottom-up

- Excellence is the only valid criterion
  - individual team + research project

- Independent individual teams in Europe
  - nationality of researchers is not relevant
  - host organization to be located in MS or AS

- Investment in research talent
  - Attractive, flexible grants, up to five years
  - under control of the Principal Investigator (PI)
Marie Curie Actions

- Initial training
- Initial Training Networks
- Life-long training and career development
  - Intra-European Fellowships / European Reintegration Grants
  - Co-funding of regional/national/international programs
- Industry dimension
  - Industry-Academia Partnerships and Pathways
- International dimension
  - Outgoing & Incoming International Fellowships; International Cooperation Scheme; International Reintegration grants; Support to researcher ‘diasporas’
- Specific actions
  - Mobility and career enhancement actions; Excellence awards
  - Specific actions
  - Mobility and career enhancement actions; Excellence awards
Marie Curie Actions

Objectives

- Strengthen and structure Initial Training of Researchers at European level
- Attract students to scientific careers
- Improve career perspectives by broad skills development (including private sector needs)
- Directed at early-stage researchers
Marie Curie Actions

Main features

- International network of participants
- Industry involvement
- Joint Training Program:
  - (i) training through research
  - (ii) complementary competences modules
- Mutual recognition of training/diplomas
- Four years contracts
Capacities

- Research Infrastructures: $1,715 \text{ M€}$
- Research for the benefit of SMEs: $1,336 \text{ M€}$
- Regions of Knowledge: $126 \text{ M€}$
- Research Potential: $340 \text{ M€}$
- Science in Society: $330 \text{ M€}$
- Coherent Development of Policies: $70 \text{ M€}$
- International Cooperation: $180 \text{ M€}$
Capacities
Research Infrastructures

- Optimizing the use and development of the best existing research infrastructures in Europe
- Helping to create in all fields of S & T new research infrastructures of pan-European interest needed by the European scientific community
- Supporting program implementation and policy development (e.g. international cooperation)
Capacities

Two lines of action…

… but NO funding of research

- **“Regions of Knowledge”** 8 M€ in 2007
  - for ALL European regions
  - to encourage and support the development of « regional research driven clusters »

- **“Research Potential”** 25 + 8 M€ (Balkans) in 2007
  - for Convergence & Outermost regions
  - to unlock and develop their research potential
  - to help researchers to successfully participate in research activities at EU level
  - specific actions for WBC
# Cooperation

## The Cooperation specific program – 10 themes and budget

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<tr>
<th>Theme</th>
<th>Budget (M€)</th>
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<td>Health</td>
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<td>Information and communication technologies</td>
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<td>Nanotechnologies, materials and production</td>
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<td>Energy</td>
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<td>Security</td>
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<td><strong>Total</strong></td>
<td><strong>32 413</strong></td>
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Cooperation

Information and Communication Technologies

- ICT Technology Pillars
- Integration of Technologies
- Applications Research
- Future and Emerging Technologies

1019 M€
(ICT-1)
8 May
Cooperation

Information and Communication Technologies

- ICT Technology Pillars
- Integration of Technologies
- Applications Research
- Future and Emerging Technologies

1019 M€
(ICT-1)
8 May
Cooperation

Energy

- Renewables, clean energy, CO2 emissions, efficiency, etc.
- Nuclear fission and radiation protection (under Euratom FP)
- Fusion energy research (under Euratom FP)

109 M€
RTD
3 May
Cooperation

Environment (inc. climate change)

- Climate change, pollution and risks
- Sustainable management of resources
- Environmental technologies
- Earth observation and assessment tools

200 M€
2 May
Cooperation

Transport (inc. aeronautics)

- Aeronautics and air transport
- Surface transport (rail, road and waterborne)
- Support to the European global satellite navigation system (Galileo)

Various budgets
Total: 229 M€
3 May
Cooperation

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

58.5 M€

10 May, 29 November
Cooperation

Space

- Space-based applications at the service of the European society
- Exploration of space
- RTD for strengthening space foundations

34.5 M€
19 June
Cooperation

Security

- Protection against terrorism and crime
- Security of infrastructures and utilities
- Border security
- Restoring security in case of crisis
- Security systems integration and interoperability
- Security and society
- Security research Coordination and structuring

80.3 M€
31 May
WCTR TRB-ECTRI Special Session - Berkeley - 26 June 2007

TRANSPORT RESEARCH (with strong elements of policy/applied research)

FP7 AND OTHER EUROPEAN PROGRAMMES

CALL ROADMAP 2007

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ECTRI
TRANSPORT RESEARCH (with strong elements of policy/applied research)  
FP7 AND OTHER EUROPEAN PROGRAMMES  
CALL ROADMAP 2007

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OTHER EUROPEAN PROGRAMMES

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Coordination between National research programs

- The ERA-NET scheme in FP7
- ERA-NET actions in FP7
- ERA-NET Plus actions
- EUREKA and COST
- Additional Information
Coordination between National research programs

Coordination of national programs Overview FP7

- **ERA-NET**
  Like in FP6: Coordination of programs
  - MS agree and fund joint calls/programs
  - EU funding only for coordination

- **ERA-NET Plus**
  New in FP7: To up of a single joint call
  - MS contribute to a joint trans-national call 2/3
  - EU funding for research: 1/3 of the joint call

- **Art. 169**
  Full integration of national programs
  - Scientific and financial: strong EU funding
  - Single implementing structure
Coordination between National research programs

COST

bottom-up, intergovernmental mechanism – facilitates coordination and exchanges between nationally funded scientists and research teams

- Enhanced complementarity and synergy sought between FP7 and COST
- Support “…at least 210 M€ and up to 250 M€, subject to the midterm evaluation" from Cooperation SP
- 210 M€: +50% compared to FP6 (250 M€: ~+80%)
- Grant agreement between the Commission and the ESF, the legal entity designated by COST (as under FP6)
- Partnership between the Commission and COST further developed
Coordination between National research programs

ECTRI

EUREKA

- The inter-governmental initiative aims to strengthen European competitiveness by promoting cross-border, market-oriented, collaborative R&D
- 38 members, including the European Community

Implement and reinforce co-operation and coordination aimed at increasing complementarities and synergy between EUREKA and FP7 in areas of common interest to further structure the ERA

Enhance links between EUREKA and FP7, in particular in the process of the development of initiatives based on Articles 169 and 171 of the EU Treaty

- preparation of the launch of the Eurostars §169 initiative, aimed at R&D performing SMEs
- preparation of the launch of the ARTEMIS (embedded systems) and ENIAC (nanoelectronics) JTIs, based on § 171

As member of EUREKA, participate in its governance structures (HLG, NPC, Executive Group)
Thank you
for your attention