

Benchmark of practices of transnational cooperation in transport research programs and policy

Deliverable 1.3.

October 2005

For further information on this report,
please contact:

Work package 1 leader

Austrian Federal Ministry for Transport,
Innovation and Technology (bmvit)
Unit of Mobility and Transport Technology

Andreas DORDA (Work package leader)
Renngasse 5
A-1010 Vienna
Phone +43 (0) 1-534 64-3109
Fax +43 (0) 1-534 64-2230
www.bmvit.gv.at

www.transport-era.net under Workplan and WP1

Main author(s)/editor(s)

Claus SEIBT
ARC systems research GmbH.
A-2444 Seibersdorf
Phone: +43 (0) 50550-0
Fax: +43 (0) 2254-74 0 60
www.arcs.ac.at

Heimo KROPF (bmvit)
Renngasse 5
A-1010 Vienna
Phone +43 (0) 1-534 64-2119
Fax +43 (0) 1-534 64-2230
www.bmvit.gv.at

www.transport-era.net under Workplan and WP1

For further information on the ERA-NET TRANSPORT,
please contact:

Coordination and Secretariat

TÜV Management Systems GmbH
Am Grauen Stein
D-51101 Köln
Phone +49 221 65035 111
Fax +49 221 65035 115
www.tuvpt.de

Oliver Althoff (Coordinator)
www.transport-era.net under Contact

Secretariat

TetraPlan A/S
Kronprinsessegade 46 E
DK-1306 Kopenhagen
Phone + 45 3373 7100
Fax + 45 3373 7101
www.tetraplan.dk

Anette Enemark
www.transport-era.net under Contact

***This document was created as part of the
ERA-NET TRANSPORT.
All information is public and we encourage the use.***

***Copyright (c) 2005
Copyleft: Permission is granted to copy, distribute and/or
use this document under the terms of the
Free Documentation Dissemination License, Version 1,
available at <http://pauillac.inria.fr/~lang/licence/v1/fddl.html>***

Version no.: 1.0
Date of publishing: 24. November 2005
Drafted by: Claus Seibt (arcs) and Heimo Kropf
(bmvit)
Edited by: Claus Seibt (arcs) and Heimo Kropf
(bmvit)
Checked by: AD, JH, MW

Deliverable no.: 1.3.
Project no.: ERAC-CT-2003-10223
Project acronym: ERA-NET TRANSPORT
Project title: ERA-NET TRANSPORT
Instrument: Coordination Actions
Thematic Priority: ERA-NET
Project duration: 010104 – 311207

Table of contents

Abbreviations	2
1. Introduction	1
2. Overview on multilateral cooperation practices	3
2.1. <i>European Union cooperation and funding practices</i>	3
2.1.1 <i>The Framework Program</i>	3
2.1.2 <i>Euro-regional projects</i>	3
2.1.3 <i>Technology Platforms</i>	4
2.2. <i>Inter-governmental cooperation and funding practices</i>	4
2.2.1 <i>European Platform of Transport Research (EPTR)</i>	4
2.2.2 <i>ERA-NET Initiatives</i>	5
2.2.3 <i>The European Science Foundation (ESF)</i>	5
2.2.4 <i>EUREKA</i>	6
2.3. <i>Multi- and Bilateral cooperation and funding practices</i>	6
2.3.1 <i>Nordic cooperation</i>	6
2.3.2 <i>The DEUFRAKO initiative</i>	7
2.3.3 <i>Open national programmes</i>	7
3. Benchmarking of these cooperation Practices	8
4. Recommendations for model procedures	10
4.1. <i>Model procedures for joint policy cooperation activities</i>	10
4.2. <i>Model procedures for each level of cooperation (LoC)</i>	11
4.2.1 <i>Information and knowledge exchange</i>	11
4.2.2 <i>Project clustering</i>	11
4.2.3 <i>Joint projects</i>	12
4.2.4 <i>Joint programming (coordination of national programs)</i>	13
4.2.5 <i>Joint programs (trans-national programs)</i>	13
5. Conclusions and next steps	15
5.1. <i>ERA-NET TRANSPORT as a trans-national cooperation platform</i>	16
5.2. <i>ERA-NET TRANSPORT as an inter-governmental policy network</i>	17
5.3. <i>Next Steps</i>	17
Sources	18

Abbreviations

ACARE	Advisory Council for Aeronautics Research in Europe
ACMARE	Advisory Council on Maritime research and Development
AINO	R&D program on real time transport information. AINO (2004-2007) is a continuation of the research and development program activities on ITS (Intelligent Transport Systems) of the Ministry of Transport and Communications in Finland.
CEPI	The European Co-ordination of Independent Producers
COST	European Cooperation in the field of Scientific and Technical Research
DEL	Deliverable
DEUFRAKO	German-French Cooperation in Traffic Research
ECCREDI	The European Council for Construction Research, Development and Innovation
EFPIA	The European Federation of Pharmaceutical Industries and Associations
EFTA	European Free Trade Association
ENT	ERA-NET TRANSPORT
ENTx	Thematic action group of ENT
Eoi	Expression of interest
EPTR	European Platform for Cooperation and Coordination in Transport Research
ERA	European research area
ERRAC	The European Rail Research Advisory Council
ERTRAC	European Road Transport Research Advisory Council
ESF	European Science Foundation
EU-COM	Commission of the European Union
EURATEX	The European Apparel and Textile Organisation
EUREKA	EUREKA is a pan-European network for market-oriented, industrial R&D (an inter-governmental initiative supporting European innovation)
EUROCORES	EUROpean Science Foundation COllaborative RESearch
EWS	Explorative Workshop

EURYI	European Young Investigator Award
EU FP	EU Framework Programme
ICT	Innovation and communication technologies
IEA	International Energy Agency
IPR	Intellectual Property Rights
IV2S	Austrian Impulseprogram Intelligent Transport Systems and Services (Impulsprogramm Intelligente Verkehrssysteme und Services) in 2002-2006.
MoU	Memorandum of understanding
NC	Nordic Council
NMR	Nordic Council of Ministers
NTF	Nordic Transport Forum
PREDIT	Programme de recherche et d'innovation dans les transports terrestres (French program of research, experimentation and innovation in land transport)
R&D	Research and development
SRA	Strategic research agenda
TP	Technology Platform
TWS	Targeted Workshop
WP	Work package (+number within the project)



1. Introduction

The ERA-NET TRANSPORT (ENT) is an attempt of a multi-level, multi-actor framework to improve trans-national cooperation in transport research policy in the European member states. The current main focus of ENT is to advance the trans-national coordination of transport research programs (research funding and support activities) and with that to encourage program owners and program managers from national ministries, subordinate state agencies (e.g. research promotion agencies, transport infrastructure agencies) and public funding bodies (e.g. national funds or national research councils) to cooperate and to collaborate in this policy field.

But trans-national cooperation in transport research policy is not as easy to access. In transport research policy various institutional or policy actors with diverse policy rationales are involved. Main actors are transport and infrastructure ministries with a strong demand for policy driven and problem oriented research, e.g. inquiries on options to solve transport infrastructure problems. On the other hand science and research ministries are involved. These ministries have on one side an interest in problem oriented research, but as well a strong purpose to promote the competitive advantage of national research arenas and industries. Another main group of institutional actors are subordinate state agencies as well from the research policy and the transport policy side. These agencies act subordinate to the ministries, but have partially evolved as well their own policy strategies. Other important institutional actors in several member states are the traditionally strong national public research centres in the transport sector.

The above mentioned agencies are to a certain amount institutional funded and hold financial budgets for direct public funding or smaller research program initiatives. But in the last few years in most European member states a transition towards a research funding practice with less institutional and direct funding but instead program/ project research funding practices emerged. There are still direct financing budgets to fund smaller research activities, but most research funding is achieved by national research programs or earmarked budget shares within national research funds. Even more it has to be noticed that public funding presents only a small share of the overall financial sources for research. With that as well other policy instruments to promote research activities have to be kept in mind.

There are several institutional arrangements for transport research policy coordination and multilateral research funding activities at the super-national and the trans-national policy level. The term super-national refers to EU-COM or international organisations, while the term trans-national refers to arrangements initiated and managed by the European member states. For transport research policy cooperation there are e.g. super-national arrangements like some of the technology platforms or trans-national arrangements like the EPTR group. There are initiatives at the super-national and the trans-national policy level to fund and support trans-national collaborative research activities (e.g. multi- and bilateral research programs), which do as well or exclusively address the transport sector.

Work package one (WP1) is in charge for proposing guidelines and model procedures to enhance trans-national transport research policy cooperation and the coordination of research programs under the patronage of the ENT. As a first step WP1 carried out a survey on current practices of national transport research policies. The survey started with a questionnaire survey asking for national transport research programs and research funding and support activities.

The first result of this survey was an overview on policy regimes of national transport research policies in thirteen European member states regarding in particular national research programming and funding practices (Deliverable 1.1.)¹. The result illustrated, that there are structurally quite similar policy regimes regarding national research programming and funding practices, but varying policy procedures (governance mechanisms) due to different political cultures behind.

In the questionnaire survey national representatives were asked for their estimations on barriers of trans-national research policy cooperation (Deliverable 1.2.). One important result was that legal barriers for cooperation at the transport research program level are less critical than expected. From a legal standpoint there are several opportunities for trans-national research policy cooperation and transport research funding activities. Barriers are more serious regarding bureaucratic rules of public administrations and the political legitimation of public funding budgets.

To implement trans-national research programs and public research funding and support activities several practical experiences of other institutional arrangements exist. In this deliverable (Deliverable 1.3.), we will at first give an overview on relevant arrangements for trans-national research policy cooperation and multilateral public research funding and support activities and secondly assess and benchmark these arrangements. The idea behind this approach is to define on one hand the position and role of the ERA-NET TRANSPORT in-between other research policy arrangements and secondly to learn from the observed initiatives regarding their administration and financial resource allocation practices.

As a result of the survey of policy regimes in national transport research policies and the analysis of already operating initiatives for trans-national research policy cooperation and research funding and support activities two clear outcomes turned up. There is actually a clear tendency to establish cooperation platforms to enhance research policy cooperation in the European Research Area (ERA) on all policy levels (regional, national, trans-national, super-national policy level). These platforms can be as well portrayed as cooperation networks: as policy networks and as innovation networks. The term policy network describes a structure in which various actors are cooperating in a policy process. The term innovation network characterizes a structure in which various actors, e. g. from public administration, the research arena and industry are cooperating to achieve particular research result and innovative problem solutions. Implicitly the ERA-NET TRANSPORT has started to act as a policy cooperation platform or policy network launching different thematic research areas and activating particular thematic innovation networks.

¹ The report is available on www.transport-era.net under the link Documents.

2. Overview on multilateral cooperation practices

2.1. European Union cooperation and funding practices

2.1.1 The Framework Program

The European framework program is the largest research funding and support program and has the most advanced common pot model in the European Union. There are several billion Euro a year within the framework programs to promote and fund research and technological development. The administrative procedures are regarded as difficult; but on the other hand they are kept ambitious to manage the quality of research proposals and projects and to endow transparency and accuracy within the administrative process. Several national programs are serving the framework program and vice versa national programs are strongly related to the research priorities of the framework program. Research priorities in national program designs are in several countries strongly related to the research priorities in the framework program for example due to enforce and prepare national research organisations for the participation in the framework programs. In most countries there is a remarkable political debate how national financial resources raised for the European framework program can be repatriated as efficient as possible. This issue stays very important for political legitimation.

2.1.2 Euro-regional projects

In 1995 the European Commission DG for Energy and Transport initiated the Euro-regional projects in the transport sector. The first five Euro-regional projects were CENTRICO, CORVETTE, VIKING, SERTI and STREETWISE. These projects are aiming to promote intelligent transport systems (ITS) for coordinated management of the Trans-European Road Network (TERN). With the European enlargement two further projects were launched (CONNECT, TEMPO). The Euro-regional projects focus mainly on four strategic domains: monitoring of road infrastructure, a European network of traffic management centres, traffic management and control systems and traveller information services.

Between 1995 and 2000, the European Commission contributed over Euro 125 million to this European Union action, funding research and the implementation of intelligent transport systems and services for road management within the Euro-regional projects, and allocated additionally Euro 192 million for the period from 2001 till 2006. Beside of this common pot of the European Commission further national financial resources were allocated by the national project partners. The main project partners in the Euro-regional projects are public road administrations and private road operators but as well public authorities and research organisations are involved. In specific the public road administrations are as subordinate agencies to national transport ministries directly public financed and hold normally an own budget to fund national research activities or to participate in international research activities and research implementation projects. Each Euro-regional project has its own secretary to manage the time consuming administration procedures for the projects. The administrative procedures follow the official rules of DG for Energy and Transport (DG TREN) and the overall management procedures of the European Commission (Müllner, Vienna 24.02.2005).

2.1.3 *Technology Platforms*

The idea of technology platforms was first mentioned at EU COM (2004)353: Science and technology, the key to Europe's future – Guidelines for future European Union policy to support research. Technology platforms play meanwhile an important role within European research policy as cooperation platform among national industries, national and European public administrations, academia, research organisations, the financial sector and small and medium sized companies. Even the end user or civil society actors are supposed to be involved. But currently the operating technology platforms are clearly industry driven. Most of the around 28 technology platforms were established during 2004. Several of them were initiated by advisory boards, e.g. ERTRAC, PV-TRAC, ERRAC, ACARE, ACMARE etc., or initiatives launched by European industrial umbrella associations (CEFIC, CEPI, EURATEX, EFPIA, ECCREDI).

Technology Platforms are research policy cooperation actions. The European Union funds networking activities, travel expenses and conference costs but not the working costs of the participants. The administrative structure in most technology platforms is similar: there is a steering committee, working groups and often an advisory board in charge. One significant goal of technology platforms is the articulation of a vision for future technological developments within the addressed key-technology field and furthermore the blueprint of a strategic research agenda (SRA) for future development. Further steps are strategic planning activities like negotiations on the future allocation of financial resources from the public and as well the private sector for research in this key-technology field and the development of research cooperation platforms (technology initiatives). Technology platforms act as an advisory board to the European commission, e.g. the results of the SRA's are a key input for design of the thematic areas in FP7.

2.2. *Inter-governmental cooperation and funding practices*

2.2.1 *European Platform of Transport Research (EPTR)*

The European Platform for Cooperation and Coordination in Transport Research (EPTR) was established in November 2001 by representatives of different EU Member States and Candidate Countries. EPTR group aims on improving the coordination of national transport research policies and to strengthen trans-national transport research activities in areas of common interest. This includes information and knowledge exchange on transport research trends and strategic improvements, cooperation regarding national transport research programs and the submission of joint positions to the European Commission and the Framework programs. EPTR performs own activities such as targeted workshops and other support actions.

EPTR is an inter-governmental transport research policy cooperation platform. But EPTR holds not an own budget. Travel expenses and costs for networking activities have been taken over by the EPTR partners. The EPTR is open to all Member States and Candidate Countries – in addition participation is open to the EFTA countries. EPTR is based on voluntary participation and is independent from the European Commission (subsidiary principle). The participating countries are in addition represented by national officials in the Transport Program Committee for the EU framework program. With that EPTR representatives act as an advisory board to take position concerning transport research issues in the upcoming FP7.

2.2.2 *ERA-NET Initiatives*

In European Research Policy within the 6th Framework Program a new policy instrument emerged, the ERA-NET scheme. The overall policy goal going along with ERA-NET is to enforce inter-governmental coordination of national research policies, in specific among national research programs. The traditional fragmentation of public research promotion efforts in the European Union causes the funding of similar research projects in several European countries and with that a probably inefficient accounting of financial resources for research within the European research area. ERA-NET and other up-coming instruments to enforce research policy coordination and cooperation are still in a distinction process to find position in-between the plurality of the whole of research policy instruments in Europe.

ERA-NET is a European Union coordination action to enhance inter-governmental cooperation among national research policies and research programs. The main target of most ERA-NET's is to enhance the collaboration of research program executives from different national ministries, public funding bodies and research promotion agencies in charge of national research programs. A substantial budget for these cooperation enhancing and networking activities is obtained by the European Commission, but the involved national partners have to contribute as well with own financial resources. Meanwhile a multitude of ERA-NET's are established. But while in some research areas (mainly basic research) first multinational calls were already launched in other research areas a number of considerable barriers for cooperation among national research programs occurred due to political legitimation aspects, administrative rules and bureaucratic hindrance². (Seibt, 2005)

2.2.3 *The European Science Foundation (ESF)*

The European Science Foundation is a pan-European association of around 78 major national public science and research funding agencies and national research funds of around 30 Member states. All scientific disciplines are represented: physical and engineering sciences, life-earth and environmental sciences, medical sciences, humanities and the social sciences. ESF supports its national member organisations by organising networking activities, exploratory workshops and conferences to work on themes of common interest including the development of research infrastructure. ESF also conducts joint studies in areas of strategic importance for European science and research policy and executes on behalf of its member organisations two public funding and support programs: EURYI, an European young researcher mobility grant scheme (European Young Investigator Award) and EUROCORES, an umbrella program for trans-national funding and support activities dedicated to scientific research. Currently around 20 EUROCORES programs are proposed, 16 programs are fully running, for the remaining four programs a call for proposal will be published this year. The EUROCORES program is based on a virtual pot model.

ESF is on one hand an inter-governmental research policy coordination and cooperation platform, but on the other hand launches on behalf of its member organisations trans-national research funding and support activities. ESF is dedicated to basic research and targeted basic research. The organisation is highly institutionalised, has 55 employees and holds an annual budget of 44 Mio Euro. ESF manages today the COST actions, an inter-governmental research policy cooperation initiative which was already established in 1971. ESF has already

² Cp. p 3, ERA-NET TRANSPORT, Deliverable 1.2, May 2005.

gathered major experience with multilateral research funding and support. In the EUROCORES program several administrative barriers emerged similar to the above mentioned barriers of ERA-NET. The inter-governmental administrative process caused for example an overburden of the involved national organisations, e.g. the peer review system for the evaluation of research proposals was strongly overstretched or the virtual pot model was partly not reliable and difficult to administrate. The experiences of ESF illustrate the main barriers of multilateral research funding and support activities: obstacles due to cultural and bureaucratic differences, obstacles due to diverse national research priorities and financial resource allocation practices and overall the difficult procedures regarding the inter-governmental administration of multilateral research programs. (Williamson, Speyer 20.10.2005).

2.2.4 EUREKA

The EUREKA initiative was firstly declared in 1985 based on the political idea to mobilize Europe's capability to innovate. EUREKA is a pan-European, inter-governmental public funding and support initiative (umbrella program) devoted to near market research and research and technology development towards innovative advantages. EUREKA foremost promotes on one hand innovative R&D projects on the other hand significant industrial cluster and networking activities to further develop key-technology areas. The inter-governmental EUREKA initiative governs a number of programs; one of these programs, called *logchain*, is dedicated to R&D and innovation in the transport sector. The present selected research priorities in *log-chain* are the improvement of international freight transport by the development and optimisation of continuous transport and logistic chains or the integration of innovative technologies (e.g. ICT applications) into the transport sector.

The EUREKA initiative is a bottom-up oriented intergovernmental cooperation platform for joint research funding and support activities. Collaborative research projects can be introduced by at least two or more member countries of EUREKA. Most national EUREKA administrations welcome project proposals throughout the year and some member countries organise seasonal calls. For the evaluation of the project proposals high level representatives of the involved member organisations meet several times a year and decide on the incoming research proposals. EUREKA relies on a virtual pot model. In some of the participating countries an annual budget for EUREKA projects is earmarked. In other countries the actual budget is negotiated regarding the submitted project proposals. The EUREKA initiative relies on a lean organisational structure and very simple administrative rules. But due to the fact that EUREKA is an inter-governmental initiative national administrative rules are in command. These national administrative rules and procedures are heavily differing, partly not compatible and can not really be synchronized. (Loward, Vienna 24.02.2005)

2.3. **Multi- and Bilateral cooperation and funding practices**

2.3.1 *Nordic cooperation*

There is a longstanding tradition in the Nordic countries (Denmark, Island, Sweden, Norway and Finland) to cooperate and collaborate due to a common history, similar languages and similar cultures. Within Nordic Research policy there are several cooperative institutions and cooperation networks like the Nordic Council of Ministers (NRM), the Nordic Council (NC), NordPlan, NordKolt etc. and several other initiatives. Specially dedicated to transport research is the Nordic Transport Forum (NTF) and a particular cooperation network of the Nordic road directorates.

The Nordic council of Ministers governs a large joint research budget – around 100 Mio Euro a year – from Nordic governments (common pot model). The research budget is dedicated to research funding and support of research activities of common value for the Nordic Countries. For example the NordForsk program or the bottom-up oriented sustainable development program co-funds national research projects if they can contribute to a Nordic added value. Within this two research programs funding for transport research is as well accessible. The NTF holds a small annual budget of around 100 K Euro a year. NTF funds mainly networking activities and the organisation of research seminars but recently as well some joint research projects. The Nordic road directorates have just committed to fund joint research projects and provide for that an annual budget of 0,5 Mio Euro. In Nordic research funding cooperation the administrative procedures are simple. Regarding joint research projects, the main project contractor takes over the accounting for the other involved research partners. In the NRM a secretariat takes over formal responsibility. Bureaucratic barriers are as well obvious but can be overruled if for all partners a clear benefit is apparent. (Krawack, Vienna 24.02.2005).

2.3.2 *The DEUFRAKO initiative*

DEUFRAKO is a bilateral cooperation action between France and Germany dedicated to transport research. The DEUFRAKO initiative promotes and funds networking activities and collaborative transport research projects. In 1998 a bilateral research program focusing on four main research areas was installed: railway transport, transport telematics, urban transport and freight transport. In December 2003 – past several years of preparation – a first joint call for proposal and with that a first bilateral research funding and support action was published. Twelve project proposals were submitted and four project proposals were kept for funding. DEUFRAKO organizes the funding with a virtual pot model: the French authorities fund the French- the German authorities fund the German partners.

The DEUFRAKO experience shows, that bi- and multilateral transport research program implementation is a long standing process and a result of several years of joint efforts and trust building. Strategic decisions which research themes ministries want to prioritize as well as decisions on open research funding budgets have to be carefully considered. The synchronisation of budget decisions is quite difficult due to different budget calendars. The experience within DEUFRAKO points as well on several bureaucratic barriers: e.g. varying national project proposal evaluation criteria or different formal standards regarding the contracts for collaborative research projects. (Kratzl, Vienna 24.02.2005)

2.3.3 *Open national programmes*

A number of national public research programs are open for the participation of non-resident research organisations. Non-residents can normally take part in collaborative research projects funded by programs of national research funds or federal ministries on an unpaid basis. But because this is in most cases not sufficient, several measures were established to finance contributions of non-resident researchers. In some programs a national research organisation acts as coordinator and is in charge to account the other involved research partners abroad. In other programs national program owners are very open regarding cross-border accounting and pay to a minor extent as well the expenses of non-residents. Regarding transport research there are several public funding and support actions financing research cooperation and networking activities at a pan-European and

even an international level like e.g. CALFRANCE a networking initiative between French government and the California state authorities.

Some national transport research funding and support activities are generally open for research partners abroad. If for a collaborative research project a national research partner is not on hand, a non-resident research organisation can be introduced and financed. But it has to be clearly mentioned that till now in most countries only smaller lump-sums are available for non-resident organisations.

Most of the above mentioned open national research programs fund and support foremost networking activities or the organisation of conferences and seminars. The programs finance mainly travel expenses and organisation costs but do only to a minor extent finance working costs of participants. In some cases the working costs of non-resident researchers are accounted by the national research organisation in charge. In other cases the funding of engaged non-residents is assumed by national research funding agencies or even federal ministries. For the last mentioned the administrative procedures for cross-border accounting stays in most cases difficult. As expected this is easier for research funding agencies – as soon as a budget is earmarked, they are more unbound to political legitimation.

But political legitimation stays a major concern. In all programs a strong rationale to underline a clear benefit for the national research arena by funding non-resident research organisations can be observed. And beside of that only a small budget share in national programs is kept available for non-resident research organisations.

3. Benchmarking of these cooperation Practices

The purpose of this benchmarking exercise is to perform a simple comparative analysis of yet operating European (EU COM) and pan-European (inter-governmental) research policy cooperation and research funding and support activities. The first objective is to locate on one hand the position and role of ERA-NET TRANSPORT among other European research policy arrangements or more metaphoric the position within the European knowledge and innovation system. The second objective is to learn from the observed initiatives regarding their administrative procedures and financial budget allocation practices. Above we presented and overviewed the relevant institutional arrangements for trans-national research policy cooperation, on one hand plain coordination and cooperation platforms, on the other hand public research funding and support activities as well on the policy level of the European Union, as governmental initiatives and as well as bi-, tri- and multilateral research programs or national programs open for cross-border cooperation.

In most member countries there is a lasting tradition of participation in inter-governmental policy cooperation activities. ERA-NET as such an inter-governmental initiative is compellingly dedicated to enhance cooperation among national research program representatives from national ministries, national funding bodies and research funding agencies. There are several other cooperation platforms which have a similar purpose like the European science foundation (ESF) focusing on the cooperation of executives of funding bodies, funding agencies and federal ministries in the field of scientific research or the EUREKA initiative enhancing the cooperation of public promotion of R&D and market near research.

Several studies recommend that the coordination of national research programs is easier that closer to basic research. The reason for that is on one hand that national

research priorities in basic research are in common quite similar and on the other hand that the research arena in this field is meanwhile no more national but international. However a much more important reason is that trans-national research project funding is easier to manage if expected research results are not affiliated to Intellectual Property Rights (IPR). This is mostly the case with basic research, where research is published within scientific communities and a base principle is open distribution of research results for public assessment and evaluation. (TAFTIE 2005)

This is in our opinion as well the case regarding policy oriented research. This type of research is normally to a 100% public funded and it has to be freely accessible and openly disseminated to the public: not ministries are ordering in a democratic system these research results but in a wider sense the state citizens and tax payers. For R&D in contrast there is a strong focus on intellectual property rights (IPR) and with that a strong political demand in strengthening national research arenas to compete with other national research arenas.

In most member countries there are not really barriers for inter-governmental cooperation regarding national law and other legal regulations, but there are several barriers due to bureaucratic rules and procedures. Formal and informal rules of national program owners and as well executive program officers in person do strongly differ. They are normally not designed to accommodate trans-national research cooperation and cannot easily be modified in short-term. See for example the above mentioned experiences with the bilateral DEUFRAKO program: the coordination of the French and the German administrative rules proved to be significantly difficult. Since national research program administration practices tend to be a barrier for cooperation, it seems more successful to accept and adopt these practices than trying to harmonize them. There are no distinct governance mechanisms or a toolbox how to reach inter-governmental cooperation, but the opportunity for step-by step actions, which will slowly and in a systemic way change the culture of cooperation showing up clear benefits for national program managers.

A very challenging issue concerning trans-national research program cooperation is the financial resource allocation practice for research funding and support activities. The common pot model as a resource allocation practice works well at the European Union level with the framework program as the largest operating common pot for research funding. Within intergovernmental initiatives a common pot model is much more difficult to adopt. The experiences of the International Energy Agency or the European Science Foundation show – member organisations determine in a consensus the budget shares they want to bring into particular funding activities – that there are tremendous administrative challenges going along with this model. The IEA provides for example a secretary and a considerable legal department dealing with varying research contract regulations. (Muntwyler, Vienna 24.02.2005)

A common pot model needs a strong commitment of the participating countries to overcome national restrictions due to legal and bureaucratic barriers. There are several intergovernmental initiatives using a virtual pot model, like e.g. EUREKA or DEUFRAKO. The virtual pot model is easier to handle regarding by funding administration but much more unpredictable regarding the allocation of financial resources. In nowadays national financial situations research budgets are strongly based on ad hoc negotiations and are dependent on the current political situation.

Europe has today a very pluralistic research funding and support area causing as well several conflicts. Differences are obvious between various research policy instruments, among different policy levels and even between the demands of the

research arena and public actors. While in many cases for example the research arena is clearly staking towards trans-national research cooperation, public actors are often slowing these attempts down prioritising their own policy agendas. In other cases there is a particularly strong demand from public actors for research cooperation and the sharing of research results. Public demand oriented research can be problem-oriented and challenge-driven (broadening the knowledge base) but as well industrial oriented to strengthen the national research arenas. Most countries have not formulated joint strategic research policy agendas yet; there are even more diverse departmental policy agendas. The experiences of ESF and EUREKA illustrates in our opinion that a missing policy agenda can cause a research promotion mechanism funding in particular research projects – performing as a bottom-up oriented research funding scheme – but do not really enforce challenging research programs with a high strategic value.

4. Recommendations for model procedures

4.1. Model procedures for joint policy cooperation activities

There are meanwhile several practical attempts to enhance cooperation in transport research policy in Europe. Examples are the EPTR group or ERTRAC, ERTICO and ACARE as technology platforms. These initiatives are important options for knowledge and information exchange within European transport research policy. While in the EPTR group representatives of national ministries and subordinate agencies are involved, the mentioned technology platforms involve next to public actors stakeholders from the research arena and industry. Initiatives which directly promote and fund collaborative transport research projects in Europe are on one hand the European framework program (FP6) or the so called Euro-regional projects and on the other hand inter-governmental research funding activities like EUREKA.

The national engagement in technology platforms has a major response into national transport research policies, e.g. the priority setting for thematic research areas. With that in our opinion implicitly an adjustment or even a mainstreaming of national transport research policies towards the European research area (ERA) takes place. Most of the EU-COM financed technology platforms have drafted or agreed on joint strategic research agendas (SRA) for the coming years. The EPTR group has in our opinion as well a major impact on national transport research policy, but without any major funding it stays primarily a “round table initiative” for knowledge and information exchange.

Based on the experiences of operating European (EU COM) and pan-European (intergovernmental) activities, we will discuss in this chapter opportunities for ERA-NET TRANSPORT to improve transport research policy cooperation and transport research funding and support activities. This goes in hand with a strong political declaration of the involved ERA-NET TRANSPORT partners towards trans-national transport research policy cooperation and a clear demand of all partners for trans-national research programs and funding activities complementary to the present super-national and national transport research initiatives. We will recommend model procedures for each particular level of cooperation already defined in the ERA-NET TRANSPORT process and hopefully in the following “trial and error” phase transferring these procedures into robust transport research policy cooperation practices.

4.2. Model procedures for each level of cooperation (LoC)

4.2.1 Information and knowledge exchange

According to a similar taxonomy summarized by the Nordic transport forum (NTF), ERA-NET TRANSPORT defined as a first level of cooperation knowledge and information exchange. Knowledge and information exchange is in our opinion one of the most significant issues but particularly inherent the science and research system. There is a long standing tradition in basic science and research, organising knowledge and information exchange on a regularly basis with conferences, seminars etc. as well as with scientific publications in journals, text books and even in the public media. From a constructivist point of view science and research is nothing else than an ongoing discourse on new findings and changing paradigms and with that it would not exist without knowledge and information exchange.

The promotion of knowledge and information exchange is in our opinion much more important regarding policy cooperation platforms characterized as so called innovation networks. The term innovation network was created in the late 1990s following the empirical examination that policy cooperation platforms among public actors, the research arena and industry are very promising. These cooperation platforms are particularly significant for the transport research sector, because research for transport infrastructure problems is to a large extent pushed by public actors and not pulled by the demand of private customers. Within the ENT action groups there was a strong obligation for opportunities for knowledge and information exchange. The involved public actors like ministries, subordinate agencies and the research arena explained their interest in starting up knowledge and information exchange on particular transport research themes.

Regarding our examination on European and pan-European research policy cooperation practices and research funding and support activities it is obvious that knowledge and information exchange is an inherent part of these practices. We recommend as a model procedure for this level of cooperation in particular the operation of policy cooperation platforms among public actors, the research arena and industry (innovation networks) on particular research themes. The financing of these networking activities is in our opinion a minor problem because mainly travel expenses and costs for accommodation and conference sites have to be considered. These expenses can be taken over in the starting phase by ERA-NET TRANSPORT and later be financed e.g. by the departmental budgets of national ministries, subordinate agencies and even the research organisations themselves.

4.2.2 Project clustering

The second level of research cooperation defined within ERA-NET TRANSPORT is project clustering. In our opinion this level is closely linked to knowledge and information exchange, which is the basis for bringing together complementary parts of research projects. Project clustering opens the opportunity to deepen the exchange of knowledge and information on the project level by coordinating parts of research projects or the sharing of research results. Project clustering is regularly the starting point for successful innovation networks and gives the chance to strengthen research endeavours in particular thematic research areas.

Even though numerous experiences illustrate that the clustering of projects stays difficult. There is so far a high interest in exchanging knowledge and information, but less interest in coordinating varying research approaches: e.g. there are around

seven different floating car data projects, which are heavily competing. On the other hand there are several thematic areas where a strong common interest is apparent, e.g. in the field of GSM applications or passenger evacuation practices in the maritime sector and networking activities are requested. The Euro-regional project initiatives are in our opinion an effort to operate trans-national research networks.

We recommend for this level of cooperation as model procedure the operation of so called generic research funding and support activities. Generic research support activities are e.g. the promotion of networking or platform building, the promotion of education and training or the promotion of mobility of researchers. The promotion of networking activities can be funded by lump-sums of departmental budgets of ministries or funding agencies using a virtual or even a common pot model. For mobility of researchers as well as education and training or networking activities there are as well other national research funding and support programs in force that can be additionally employed to advance project clustering in transport research.

4.2.3 Joint projects

In Europe there are several strong national transport research arenas. Not long ago these national research arenas were partly funded by institutional or direct public budgets. Today they rely strongly on being financed by national and super-national public research program/ project funding programs. With this shift to a more competitive program/ project oriented funding system – instead of direct funding – the national transport research arenas are in our opinion opening up more and more towards cross-national research cooperation (collaborative research projects) and as well towards cooperation with research partners from other research disciplines (interdisciplinary projects). In some countries institutional funding plays still a major role regarding the transport research arena (France, Germany, Poland). Since several years as well a notable reorganisation process in some of the national innovation systems in the transport sector (e.g. railway sector, road construction sector) can be observed, e.g. as a result of the transformation from a pure public investment sector to a now partial private investor market.

Regarding the promotion and funding of joint transport research projects, there are two different policy rationales noticeable. On one hand there are the interests of national science and research ministries to promote the national transport research arenas and transport industries. On the other hand there are the perspectives of transport policy with a strong demand on problem oriented or policy driven research, e.g. inquiries on options to solve transport infrastructure problems or research on best available technologies on behalf of preparatory activities for international standardisation processes. We recommend as model procedure for this level of cooperation to operate ERA-NET TRANSPORT as a policy platform to kick off trans-national collaborative research projects (joint projects) and to activate innovation networks. But the ERA-NET TRANSPORT can only support the start of these activities. Later the national partners have to organize and finance these activities.

Regarding public funding opportunities for trans-national collaborative research projects we recommend to fund transport research projects of common interest directly or realize a call on invitation addressing distinct research partners. We recommend running a virtual pot model, even though a common pot model for international research project funding is operated successfully by the International Energy Agency (IEA). But in our opinion the common pot model is uncertain for our inter-governmental research policy cooperation practices. Funds from general budgets of ministries, from budgets of subordinate agencies or national umbrella

programs and even earmarked budgets of national research funds are basically available for joint research projects. Funding is in fact available to finance the national partner and it is as well possible in most countries that lump-sums can be offered to non-resident research organisations.

4.2.4 Joint programming (coordination of national programs)

There is a rising interest of national program managers for knowledge exchange and a platform for cooperation of national research programs, e.g. for the coordination of thematic research priorities and research program design like the organization of calls or project proposals. Furthermore there is an opening of national transport research programs towards cross-border funding. The reason is that national transport research arenas are asking strongly for opportunities to involve non-resident research organisations. Rather often in a public funded research project a specific project partner is not available in the national research arena or not interested in participation, but a research partner abroad can suit the purpose.

There are not really legal barriers for cross-border funding, but bureaucratic barriers. In most countries for cross-border funding actually only smaller sums are available. It is still difficult to legitimise the funding of non-resident research organisations regarding a national research policy context where the full repatriation of national in-payments in super-national or trans-national funding schemes still seriously dominates the national debates in research policy.

We recommend as a further model procedure for ERA-NET TRANSPORT the encouragement of cooperation and the opening of national transport research programs. We mentioned above the rising interest of national program owners and program managers in knowledge and information exchange and coordination of national transport research programs. ERA-NET TRANSPORT can serve as a policy platform (and policy network) and has in our opinion a substantial mission to encourage the ongoing process of opening national transport research funding programs for the participation of non-resident research partners. Not in all European member states this practice is well established yet. But in our opinion it is crucial to institutionalise this practice within the European research area. Such a policy coordination platform/policy network can in our opinion be performed and financed in the beginning by ERA-NET TRANSPORT and later by the national partners.

4.2.5 Joint programs (trans-national programs)

In most European countries actually no legal barriers exists for joint research programs – in terms of bilateral and multilateral public research funding activities – but numerous barriers are appearing. Some ERA-NET initiatives have started multilateral research funding activities yet, chiefly initiated by national research funding agencies and national research funds. It can be noticed that these activities primarily fund basic research projects. The research arena in this field is normally not as much national oriented and competitive than in applied research and R&D.

Even more a strong driver for pan-European cooperation in basic and targeted basic research is the aspired competitive advantage against research areas overseas like the US, South-Asia, Japan or China. “Innovation- and research networks in applied research” and “R&D” are regularly competing. There is on one hand an advance towards a common ERA. On the other hand there are still competing national and regional location policies among European member states.

Besides of that there are numerous applied research areas of common (trans-national) interest in the transport research sector and with that an explicit demand

on joint programs or multilateral transport research funding and support activities. At the moment national ministries as well as research funding agencies have in most European countries a very strong interest towards the internationalisation of their research promotion activities. However the policy coordination and legitimization of multilateral transport research funding programs stays difficult. The reason for that are on one hand barriers regarding policy coordination due to the different and sometimes conflicting policy procedures going along with the varying rationales of the involved institutional and political actors.

On the other hand it is important to mention, that the promotion of transport research currently seems to have not the same priority than the promotion of other research areas like ICT, Biotechnology and Nanotechnology. Along with that comes the situation that the role of transport research as a national research priority and in particular the general budgets for transport research (mainly as umbrella programs for transport research hosting several thematic sub-programs) have to be negotiated every few years in most European Member states. With that the national research policy in general, and transport research policy in particular, is heavily periled by the red pencil policy of national finance ministries. A high pressure on distinct policy legitimization within the overall national research policy is evident. Fortunately transport research as a research priority has at the moment a high legitimization in most national research policy arenas due to the fact that transport research is a major priority in the coming 7th EU-framework program.

We recommend as model procedure for this level of cooperation the implementation of multilateral transport research funding and support activities concentrating on thematic research areas of common interest. Research priorities and financial budgets of national transport research programs have to be negotiated every few years. With that there is a clear mid-term perspective for the implementation of multilateral research funding programs with coordinating the negotiation of next budget periods of national transport research funding programs (umbrella programs), e.g. the Austrian IV2S, Finnish AINO or French PREDIT. The ERA-NET TRANSPORT plays an evident role as policy network for coordination.

For the implementation of multilateral research funding programs we recommend to run a virtual pot model. There are several experiences which illustrate that a common pot model can cause tremendous problems. By the way the preference for a virtual pot model is taken meanwhile by most ERA-NET initiatives. The program budget can be earmarked within national umbrella programs as a particular (sub) program line for multilateral activities or as a particular budget share of running national thematic research programs. We recommend for the program operation a two step approach: first a call for tender and then a call for research proposals. The management of multilateral programs is in our opinion a minor problem, because there are already enough experiences with the management of multilateral research programs. Regarding the results of our former survey (Deliverable 1.2.), we recommend firstly that the formal pre-requisites for the call for tender and the call for proposal are as simple as possible to address smaller research organisations too. Secondly we recommend an efficient and transparent program administration practice which follows recent research program management standards.

5. Conclusions and next steps

We mentioned in the introduction that we decided to follow in WP1 a process-related approach. In this deliverable we primarily recommend model procedures based on first experiences supervising the ERA-NET TRANSPORT process and based on the survey of other rather similar institutional arrangements. Secondly we will during the following “test and error phase” of the above introduced model procedures monitor and evaluate the ongoing process and refine our recommendations. With this approach we expect to realize fairly robust practices for trans-national and inter-governmental transport research policy cooperation and research funding and support activities. The reason for the choice of this process-related approach is the high grade of complexity in this policy field due to the various and differing rationales coming along with different institutional regimes and governance mechanisms.

But in our opinion one definite interrelationship is obvious within this complex area: the growth from a platform to a distinct network character. This means on one hand the track from a policy cooperation platform to a policy network and on the other hand the way to the implementation of particular thematic innovation networks. In our opinion a network is a specific kind of institutional arrangement based on a high level of commitment and trust. A network relates strongly on a participative and deliberative internal negotiation system.

One of the most central issues for the anticipation of a well coordinated future trans-national transport research programming and funding practice is at first the processing of well organized knowledge and information exchange. In our opinion systematic knowledge and information exchange among program owners/ program managers of national transport research funding programs – as well from ministries, research funding agencies and national research funds – has to be well performed. The patronage of ERA-NET TRANSPORT for such a information and knowledge exchange platform opens for national program owners and program managers the opportunity to coordinate their national research funding and support activities regarding e.g. the co-organization of thematic research priorities or to co-ordinate the pre-requisites for the research program designs. There is obviously a broad interest of national research program managers to open up national research programs and propose opportunities for the participation of non-resident research organisations. The reason for that is the strong demand of national research arenas to integrate foreign research partners into nationally funded collaborative research projects. Furthermore there is a strong demand for bilateral and multilateral research funding and support activities in particular thematic areas.

On one hand there is a demand of public authorities for policy driven and problem oriented research, e.g. inquiries on options to solve transport infrastructure problems or research on best available technologies to prepare standardisation activities in the transport sector. On the other hand there is a strong demand of national researchers to get larger cross-national collaborative research projects funded. The current opportunities for the public funding of these projects are the EU Framework Program, the Euro-regional initiatives or inter-governmental initiatives like EUREKA or actions of the European Science Foundation. DEUFRAKO is the only particular bilateral transport research funding and support program operating. But ERA-NET TRANSPORT can possibly initiate the operation of several further bi- and multilateral transport research programs.

Each of these research promotion activities requires a different funding policy. In most national research programs lump-sums to fund not-resident research partners are available. For networking activities smaller budgets can be offered often by direct funding of national ministries or subordinate agencies. But for the funding of joint projects the coordination of national funding policies is much more complicated. To fund joint projects, budget shares of operating umbrella programs or earmarked budget shares within national research funds may be accessible.

Budget decisions regarding national umbrella programs or budget shares regarding national research funds have to be coordinated to synchronize national research programs to multilateral research programs. Time schedules for budget negotiations have to be co-ordinated. This coordination opens a “window of opportunity” for the operation of joint research programs embedded in national umbrella programs.

5.1. ERA-NET TRANSPORT as a trans-national cooperation platform

ERA-NET TRANSPORT is on one hand an institutional arrangement to enhance trans-national transport research cooperation activities. The action groups illustrate that there is actually a strong demand for such a cooperation platform (see introduction) to coordinate trans-national research activities and further for activating particular thematic innovation networks. Innovation networks are described as a way of problem oriented research cooperation including actors from public authorities the research arena and industry. Innovation networks play a significant role within transport research. One of the reasons for that is, that the problem solving of transport infrastructure problems is to a large amount public authority driven. Public authorities act as clients for research results and innovative advantages (demand side) and are as well a vital part of the innovation networks (supply side). Public authorities are e.g. main investors regarding the later implementation of research results.

We recommended in Deliverable 1.2. a three-step bottom-up approach regarding the organisation of ERA-NET TRANSPORT as a research cooperation platform. The experience so far in the action groups (ENT2³ and ENT5⁴) illustrates that there is actually a high demand for cooperation between the research arena and public actors. . It showed up that it is actually not constructive to separate within the workshop series into a policy workshop and a stakeholder workshop. It is in our opinion more efficient to arrange two or three workshops subsequent to each other to negotiate and further detail thematic research areas of common interest and further specify the prerequisites for a public funding initiative or research program. In our opinion these networking activities can result in particular in the implementation of joint projects and further information and knowledge exchange activities. They can as well facilitate joint research programs in the future. ENT will stop moderating and financing these networking activities as soon as a first joint activity is launched. But it can provide guidance for further steps.

³ The action group ENT2 “Real-time data collection: Overview of sensors research” was founded at the TWS1 in Paris in November 2005. Two meetings have already been carried out at the 17th of May 2005 and the 16th of April 2005 in Vienna.

⁴ The action group ENT5 „SURSHIP - Survivability for ships“ was proposed by the ENT partner Sweden. The preparation workshop was held in June 2005 in Stockholm.

5.2. ERA-NET TRANSPORT as an inter-governmental policy network

On the other hand ERA-NET TRANSPORT can be understood as a pan-European, inter-governmental transport research policy network. There is a strong demand regarding systematic knowledge and information exchange and coordination among executives (program managers, program owners) in charge for national transport research programs. This can be initiated under the patronage of ERA-NET TRANSPORT. At the moment the objective of this knowledge and information exchange is mainly focusing on the coordination of national transport research programs even though research programs are not the only significant policy instruments in transport research policy. Other policy instruments like national strategic transport research plans, public procurement and investment strategies and even joint campaigning activities are not considered yet. In particular the coordination of public procurement and investment strategies do direct transport research strongly (even more than public research funding and support activities). In our opinion ERA-NET TRANSPORT has to serve in the future as well as a policy cooperation platform to discuss (knowledge and information exchange) these issues although the coordination of national research programs will stay the central subject.

The ERA-NET TRANSPORT consortium is in our opinion till now mainly an institutional arrangement to direct the ENT-process but does only partially achieve the rationale of an inter-governmental policy cooperation platform or policy network. The reason for that is that in the ENT consortium national program owners and transport research policy executives are until now only partially involved. We mentioned that not only representatives of the institutional program owners (ministries, funding agencies etc.) are sufficient, but the “personified” program owners or explicitly assigned national representatives. So we recommend in parallel to the current ERA-NET TRANSPORT process to direct attention to achieve an inter-governmental transport research policy cooperation platform and network.

The experience in EWS and TWS illustrates how difficult it is to get the right persons involved. But the EWS and TWS workshops are actually the starting point for an intergovernmental transport research policy cooperation platform. We recommend to set in particular emphasis on involving program owners of national umbrella programs or existing bi- and tri- lateral research programs like e.g. Austrian IV2S, the French PREDIT, the Finnish AINO program or DEUFRAKO into the ERA-NET TRANSPORT process. In our opinion this would be the best way to obtain, in a mid-term range, multilateral transport research programs, for example as a separate (sub)program line in national umbrella programs.

5.3. Next Steps

The next step of work package one will be the monitoring and evaluation of the ongoing activities in the ERA-NET TRANSPORT process: on the one hand monitoring the ongoing workflow of EWS and TWS, and on the other hand the monitoring and evaluation of the activities in the action groups performing as cooperation platforms to activate particular thematic innovation networks. These activities will be organized by WP3 and accompanied by the monitoring activities of WP1. For the monitoring we will provide a simple evaluation method. Based on information from workshop documents, personally observing with a participative investigation method and a standardized questionnaire disseminated via the ERA-NET TRANSPORT webpage we will analyse how the participating actors transact in the workshops. Based on this evaluation a synthesis report framing robust transport research policy cooperation practices will be prepared during 2006.

Sources

- Benz (2004); Governance. Modebegriff oder nützliches sozialwissenschaftliches Konzept?, in A. Benz, W. Seibel (Hrsg.) Governance Regieren in komplexen Regelsystemen. Eine Einführung. Wiesbaden 2004.
- Cooper, R. (2003); The Breaking of Nations. Order and Chaos in the 21th Century. New York 2003.
- Edler, J., Kuhlmann, S. (2005); Towards One System? The European Research Area Initiative. The Integration of Research Systems and the Changing Leeway of National Policies, in: Technikfolgenabschätzung – Theorie und Praxis. Nr. 1, 14. Jahrgang. März 2005.
- Kowol, U. (1998); Innovationsnetzwerke. Rekursive Technikentwicklung zwischen Nutzungsvisionen und Verwendungspraxis. Wiesbaden 1998.
- Kowol, U., Krohn, W. (1995); Innovationsnetzwerke - Ein Modell der Technikgenese, in: Technik und Gesellschaft. Jahrbuch 8. Frankfurt am Main 1995.
- Kratzl H. (2005); Experiences on procedures and criteria for cooperation in DEUFRAKO, Presentation at the second workshop of ERA-NET TRANSPORT's work package one (Vienna, 24. February 2005).
- Krawack, S. (2005); Experiences from Nordic cooperation – Barriers for cooperation - Experiences of the NTF-activities regarding transport research programmes open for trans-national cooperation., Presentation at the second workshop of ERA-NET TRANSPORT WP1 (Vienna, 24. February 2005).
- Loward, P. (2005); 20 years of Pan-European innovation – EUREKA and ERA-NET TRANSPORT – a possible cooperation?, Presentation at the second workshop of ERA-NET TRANSPORT WP1 (Vienna, 24. February 2005).
- Mayntz, R. (1993); Policy-Netzwerke und die Logik von Verhandlungssystemen, in: A. Heritier (Hrsg.) Policy-Analyse. Kritik und Neuorientierung. Opladen 1993.
- Müllner, M. (2005); The Euro Regional Projects – Administration and Funding, Presentation at the second workshop of ERA-NET TRANSPORT WP1 (Vienna, 24. February 2005).
- Muntwyler, U. (2005); The IEA hybrid and electric vehicle agreement – International Energy Agency - Implementing Agreement for Hybrid and Electric Vehicle Technologies and Programmes, Presentation at the second workshop of ERA-NET TRANSPORT WP1 (Vienna, 24. February 2005).
- Scharpf, F. H. (1993); Positive und negative Koordination in Verhandlungssystemen, in: A. Heritier (Hrsg.) Policy-Analyse. Kritik und Neuorientierung. Opladen 1993.
- Seibt, C. (2005); Governance in the Age of ERA, in: A. Blumenthal, S. Bröchler (Hrsg.) From Government to Governance. Lit Verlag (forthcoming).
- TAFTIE (2005); Program Mangement in the era of ERA – TAFTIE Task Force, draft version, 10th of March 2005. www.taftie.org (unpublished).
- Weyer, J. (2000); Zum Stand der Netzwerkforschung in den Sozialwissenschaften, in: J. Weyer (Hrsg.) Soziale Netzwerke. Konzepte und Methoden der sozialwissenschaftlichen Netzwerkforschung. Oldenbourg 2000.
- Williamson, R (2005); Organising for Basic research in Europe form the ESF to an ERC; ERA conference Towards a European Research Area; Speyer, 19.– 21. Oct. 2005; http://www.dhv-speyer.de/jansen/ERA_Conference/

