Current SERRP project descriptions (March 2008)
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1. Mobility, Transport & Infrastructure (MTI)

FEC Supervisor – Patrick Malléjacq

CVIS (FP6 Integrated Project – €41M, 50%, DG InfSo)
Co-operative Vehicle-Infrastructure Systems

The CVIS Integrated Project will develop and integrate the essential basic and enabling technologies such as a multi-channel communications and network platform readily adaptable for both vehicle and roadside, a highly accurate positioning and local map module, and an open software environment for applications. Combined into a “CVIS platform” unit, these components will allow a vehicle to share urgent information with nearby vehicles, and to dialogue with both the immediate roadside infrastructure and with infrastructure operators and service providers. New tools for “cooperative monitoring” will both deliver real-time traffic information over the entire road network, and augment the information available to local control functions such as intersection controllers.

The CVIS project will develop, demonstrate and assess at test sites in 6 countries, selected reference applications of cooperative systems in the urban and inter-urban environments, and for freight & fleet and public transport management. The results will be a library of basic service components and functions, for in-vehicle and roadside implementation, to be used for shaping cooperation in a flexible way. Both core technologies and generic application services will use open standards for maximum interoperability and ready take-up into products attractive for the individual, profitable for the manufacturer and effective for the infrastructure operator. Members of the CVIS team play an active role in global standardisation for mobile communications, and it is intended that the results of the project will form a major input to validating and finalising the CALM standards in ISO.

Participants:
5T, ALCATEL, ASF, ATC Bologna, AVVC, Bae SATC, BMW, BOSCH, CIT, Communauté urbaine de Lyon, CRF, CTS, Daimler Chrysler, DIT, DLR, Efkon, Ericsson AB, ERICSSON Microwave, ERTICO, ETSI, FEHRL, Gatespace, Heudiasyc UTC/CNRS, Highways agency, HSVV, HTW-Saarland, Infoblu, INRIA, Intempora, ISMB, Kapsch Traficom, LACROIX traffic, LCPC, Logica CMG, Mapflow, Min.Vlaams.Gemeensch, Mizar Mediaservice, Mizar, MM Lab (ex Alcatel), NAVTEQ, Peek, POLIS, Provincie Brabant, PTV, Q-Free, RACC, Ramsys, Renault, Rijkswaterstaat, Siemens, SINTEF, SRA, Technolution, TELCORDIA, Tele Atlas, Telecom Italia, TfL, Thetis S.p.A, Thomas Miller, TNO FEL, TRIALOG, Vialis, Vodafone, Volvo,

- **FEHRL Contact:** René Jacobs, BRRC (r.jacobs@brrc.be)
- **Coordinator:** Paul Kompfner, ERTICO (p.kompfner@mail.ertico.com)
HEAVYROUTE  (FP6 STREP – €3.28M, 50%, DG RTD)

Developing a system for optimising performances of HGV and their supporting infrastructures:

- Intelligent route guidance using dynamic and static road data with “HGV specific data” (including e.g. bridge heights, rest areas etc)
- Optimise speed management vs infrastructure (texture, etc) and areas with accident risks
- Use in-vehicle information on e.g. axle load distribution relating to infrastructure/vehicle damage
- Longitudinal separation between HGVs e.g. keeping appropriate loading of bridges
- Accurate (within confidence) lateral positioning of HGV using road data information (e.g. lane bearing capacity) using GPS+INU technology
- Enable dynamic management of HGVs before and during journeys

Participants:
Arsenal, ERTICO, FEHRL, LCPC, Navteq, PTV AG, Teleatlas, Volvo Technology, VTI.

- Coordinator: Anita Ihs, VTI (anita.ihs@vti.se)
- EC Project Officer: Cristina Marolda, DG Research (maria-cristina.marolda@ec.europa.eu)
- Website: http://heavyroute.fehrl.org

FIWI (Internal FEHRL Project)

FEHRL institutes Weigh-in-motion initiative

Since the early 90's there have been considerable developments in the field of Weigh-in-Motion in Europe. Interesting results have been achieved by cooperation in international projects like DIVINE, COST-323, WAVE, Top-Trial and Remove.

One of the aims of the FiWi project is to implement the key recommendations of the Remove project. The Remove project concluded that for enforcement applications of Weigh-in-Motion there currently exist no international (EU) regulations and specifications. Considering the recent developments in both the technology and applications of WIM, the FiWi project will produce an up-to-date set of international WIM-specifications. Bridge-WIM systems and WIM systems for direct enforcement will be included.

Furthermore there will be an update on the research and applications in the field of Weigh-in-Motion in Europe. This will concentrate on the area’s Traffic Monitoring & Safety, Pavement Engineering, Bridge Engineering, and Enforcement.

Usually there are only a few people specialised in Weigh-in-Motion technology and its applications in a country. The result of this is that the process of peer review and the exchange of experiences only can take place at an international level. To facilitate this exchange the FiWi project aims to create a platform where FEHRL-members can share information from all WIM-projects in Europe.

Despite its ambitious level, the FiWi project will be a relatively small project with a few well-defined tasks that will result in concrete results. Results are made available for all the members and partners of FEHRL. The nature of the topic makes it necessary to have close contact with specific external organisations, experts, and manufacturers.

The FiWi project is a "low-budget“ project with minimal management and travel costs. All partners care for their own expenses. The project will run for 2 years and has a total workload of 23 man months.

Partners:
BASt, CEDEX, EMPA, LCPC, RWS DVS (former DWW), UCD, ZAG, and the FEHRL office.

- Coordinator: Bernard Jacob, LCPC (bernard.jacob@lcpc.fr)
- Website: http://www.fehrl.org/index.php?m=140
2. Safety & Security (S&S)

FEC Supervisor – Karl-Josef Höhnscheid

**INTRO (FP6 STREP – €4M, 50%, DG RTD)**

**Intelligent Roads**

The INTRO project aims to address the problems of road safety and capacity combining sensing technologies and local databases with real-time networking technologies. This will improve both road safety and capacity by providing rapid feedback of emerging problems to maintenance authorities and road users:

Validation of real-time warning systems at network level to achieve a significant decrease in the number of accidents due to “surprise effects” from sudden local changes in weather (e.g., onset of ice and rain) resulting in low friction and hence skidding. Use Europe’s most advanced driver simulator to optimise driver responses to new types of information.

Fusion of different sensor types data (infrastructure or car based) to improve real time safety and performance indicators estimation and prediction.

Innovative use and combination of new and existing sensor technologies in pavements and bridges in order to prevent accidents, enhance traffic flows and significantly extend the lifetimes of existing infrastructure by improving maintenance planning.

A synergistic clustering action led by FEHRL (Forum of European National Highway Research Laboratories) will actively seek to integrate results and shape current and emerging practice with other national and international projects using the extensive network of the FEHRL institutes.

Dissemination of results to users at a pan-European level will be given a high priority in the project. This will result in guidelines and implementation strategies for Intelligent Road Systems with a particular focus on the needs of new member states.

**Partners:**
- Arsenal Research
- Forum of European National Highway Research Laboratories
- INRETS
- ISIS
- Prisma Solutions
- ROC
- Swedish National Road and Transport Research Institute
- Swiss Federal Institute of Technology of Lausanne
- TRL Limited
- TSS

**Coordinator:** Leif Sjögren, VTI (leif.sjogren@vti.se)

**FEHRL Umbrella Manager:** Hans van Saan, DWW (j.g.vsaan@dww.rws.minvenw.nl)

**EC Project Officer:** Cristina Marolda, DG Research (maria-cristina.marolda@ec.europa.eu)

**Website:** http://intro.fehrl.org
TYROSAFE (FP7 CSA – €1.1M, 100%, DG RTD)
Tyre and Road Surface Optimisation for Skid resistance and Further Effects

TYROSAFE is a Coordinated Action, funded by the European Community under the Seventh Framework Programme (FP7/2007-2013), currently under negotiation (expected start in summer 2008). The main objectives of the TYROSAFE project are to raise awareness, coordinate and prepare for European harmonisation and optimisation of the assessment and management of essential tyre/road interaction parameters to increase safety and support greening of European road transport.

This Coordinating Action will not only focus on the road surface but also on tyres and on the interaction between the road surface and tyres. Only an optimised interaction can lead to a high level of safety for drivers on the roads in European countries while ensuring the most positive greening effect, through reduction of CO2 output and noise emissions.

This project will provide a synopsis of the current state of scientific understanding and its current application in national and European standards. It will identify the needs for future research and propose a way forward in the context of the future objectives of European road administrations in order to optimise three key properties of European roads: skid resistance, rolling resistance and tyre/road noise emission.

Partners:
Arsenal Research, BAST, DVS (RWS), LCPC, TRL, ZAG, FEHRL,

- **Project Coordinator**: Ms. Damaris Omasits, Arsenal research (Damaris.Omasits@arsenal.ac.at)
- **EC Project Officer**: César Pérez García, DG Research (Cesar.PEREZ-GARCIA@ec.europa.eu)

COST 353
Winter service strategies for increased European road safety

A previous COST Action 344 “Improvements to snow and ice control on European Roads and Bridges has been a useful platform for identifying the most important topics for short- and long-term winter maintenance research. It is one of the few Actions involving so many countries in the domain of winter maintenance and road weather. Hence it has provided a good network for contacting the relevant experts in Europe, and through them, experts elsewhere.

This COST Action deals with research of different aspects of the winter service domain and to build on the achievements of COST Action 344. Experts believe that up to 50% of the total maintenance budget is spent on winter maintenance in many European countries. It therefore has a high significance in not only keeping roads and footways free from ice and snow but also in matters of pedestrian and driver safety. Understandably, drivers and pedestrians should also take responsibility for their behaviour in adverse weather conditions.

The Action targets safety, environment and economy issues and the necessary optimisation of these in delivering a quality winter service. For example, freight traffic is particularly vulnerable to economic factors when road and rail surface conditions in winter are poor.

- **Chairman**: Christian Holldorb (christian.holldorb@holldorb-consult.de)
- **FEHRL Contact**: Hans van Saan, DWW (j.g.vsaan@dww.rws.minvenw.nl)
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3. Environment, Energy and Resources (EER)

FEC supervisor - Bojan Leben

**DIRECT_MAT (FP7 CSA – €1.5 M, 100%, DG RTD)**

The DIRECT_MAT project objective is to share, at a European scale, knowledge and practices on recycling road and closely-related road waste in the aim of ensuring an environmentally-friendly and sustainable end-of-life for road infrastructure. Road material recycling processes have previously been studied in national and European research projects and have led to various levels of practical implementation; unfortunately, the national experiences developed across Europe almost never benefit other European countries. This is especially true for the newer Member States. Furthermore existing knowledge and practices are presently scattered. Reliable practice-oriented data on all types of road materials and waste will be identified and compiled by skilled experts working in both research and construction capacities. Field experience and relevant research issues will be integrated into a Web database to provide the European road community with unrestricted access to updated online data on end products that have been classified, assessed and illustrated with jobsite practices for dismantling and recycling applications. This database will not only offer information to stakeholders on facilitating the correct re-use of road and closely-related road waste products back into roads without generating health impacts, but will also provide technical and scientific information for CEN Technical Committees. Lastly, such a tool will make it possible to better identify outstanding research needs in this area. Best practice guides on green techniques for recycling road and closely-related road waste back into roads will be delivered; benchmarking processes will be detailed and shared by all stakeholders in order to achieve a road material recyclability level of nearly 100%. FEHRL (Forum of European Highway Research Laboratories) will contribute by performing decisive clustering tasks and engaging in a comprehensive dissemination plan to promote the required knowledge sharing for end-users”.

Partners:
BRRC, Inec, LCPC, KTI, TU-bs, UCD, VD, CDV, VTI, IBDIM, CEDEX, ZAG, IP

- **Project Coordinator**: Yannick Descantes, LCPC, Yannick.descantes@lcpc.fr
- **EC Project Officer**: Bill Bird, DG Research (william.bird@ec.europa.eu)

**Re-road (FP7 Collaborative Project – € 3.2M, 75%, DG RTD)**

End of life strategies of asphalt pavements

The Re-road project aims to develop knowledge and innovative technologies for enhanced end of life strategies for asphalt road infrastructures. Such a strategy has an important impact on the energy efficiency and the environmental footprint of the European transport system and fits within the life-cycle thinking which is being introduced in waste policy at European level. It leads to reduction of the need for new raw materials, prevents the creation of waste and the occupation of landfills and consequently minimizes the need to transport these materials to and from the work site and hence reducing energy, pollution including CO₂-emissions.

The project will cover the following topics that are important for the determination of an end of life strategy:

- **Dismantling strategies**: Impact and potentially adverse effect of different dismantling procedures on the quality of RA will be investigated.
- **Characterization strategies**: Improving characterization of RA and technical evaluation of RA as a raw material considering the heterogeneity of the material and considering the specific industrial process for producing the asphalt mix.
• Handling strategies: optimization of the recycling at highest possible level and for the original layer, depending on the RA characterization and environmental sound reuse or disposal of the marginal materials that cannot be recycled.

• Environmental criteria: Assessment of risks and benefits to the environment with the use of RA will be developed. Special attention will be paid to potential harmful substances (like tar-containing asphalt) and life cycle analysis (LCA) will be used as a tool for this assessment.

• Cost-effective recycling: Short and long term performance, life-time prediction by modeling of asphalt mixes produced with different levels RA and with different production techniques.

• Industrial processes: Study of the potentially adverse effect on the final asphalt mix quality derived from the specific method for introducing the RA in the mixing plant. How to avoid problems in the recycling of polymer modified RA and how to take full advantage of their special qualities.

Partners:
- VTI, LCPC, Technische Universität Braunschweig, Swedish Geotechnical Institute, DRI, Dresden University of Technology, University of Nottingham, Hogeschool Antwerpen, PEAB, BBRC, TRL FEHRL (ZAG, CDV, IDIM, LNEC, UCD)
  - **Project Coordinator**: Mr. Bjorn Kalman, VTI (bjorn.kalman@vti.se)
  - **EC Project Officer**: Bill Bird, DG Research (william.bird@ec.europa.eu)
  - **FEHRL Umbrella Manager**: Bojana Lukac, ZAG (bojana.lukac@zag.si)

**IPG SB (Contract – €350K, 100%+, Rijkswaterstaat)**

*Scientific Strategy for the Noise Innovation Programme, 2006-2007*

The Dutch Innovation Programme on noise mitigation, IPG, is aiming towards the implementation of a new set of source-oriented measures for decreasing the traffic noise near highways and railways. Besides testing the new set of measures on vehicles, roads and rail, the acceleration of the implementation of the innovations is a second important issue of the IPG. The implementation will lead to a significant noise reduction and will halve the costs of existing noise measures.

The Scientific Board, organised by FEHRL and comprised of experts from FEHRL national road research institutes throughout Europe, will provide an impartial audit of all of the technical aspects of the programme. The experts, who are not involved in the execution of projects in the IPG, have a background in all of the subject areas that are fundamental to the activities of the IPG. The Board will be responsible for helping to ensure that the IPG is carried out to an appropriate level of excellence, makes best use of existing and developing European (and/or International) practice and reports results from its component projects in an appropriate manner.

The Board normally meets every 6 months to discuss progress and strategic issues which are relevant to the activities of the IPG during the previous 6 months.

The Board is supported by a Secretary, who is responsible for providing all of the briefing and background material required for these meetings through liaison with the IPG Project Team at DWW.

Partners under FEHRL umbrella:
BAST, BRRC, LCPC TRL, TUWien and VTI
  - **Chairman**: Prof Johann Litzka, TU Wien (j.litzka@istu.tuwien.ac.at)
  - **Secretary**: Phil Morgan, TRL (p.morgan@trl.co.uk)
  - **Project manager**: Steve Phillips, FEHRL (steve.phillips@fehrl.org)
**IPL SB (Contract – €400K, 100%+, Rijkswaterstaat)**

Air Quality Innovation Programme, 2004-2007

The Dutch Air Quality Innovation Programme, IPL, generates, develops and tests innovative measures which contribute to meeting the limit values for air quality (NO2 and PM10) in 2010 in a cost-effective way.

The challenges of IPL consist of stimulating research institutes, universities, local authorities etc. to invent and develop new technical, infrastructural or spatial planning measures; taking away the barriers (economic; technical; social; etc.) to a successful implementation; finding clever combinations of already existing measures; and sharing relevant knowledge through an international web-based knowledge database.

IPL is a cooperative venture between the Ministry of Transport, Public Works and Water management (VWS) and the Ministry of Housing, Spatial Planning and the environment. The programme is implemented by the Department of Road and Hydraulic Engineering (DWW) of the Ministry of VWS.

The Scientific Board, organised by FEHRL and comprised of experts from FEHRL national road research institutes throughout Europe, will provide an impartial audit of all of the technical aspects of the programme. The experts, who are not involved in the execution of projects in the IPG, have a background in all of the subject areas that are fundamental to the activities of the IPG. The Board will be responsible for helping to ensure that the IPG is carried out to an appropriate level of excellence, makes best use of existing and developing European (and/or International) practice and reports results from its component projects in an appropriate manner.

The Board normally meets every 6 months to discuss progress and strategic issues which are relevant to the activities of the IPG during the previous 6 months.

The Board is supported by a Secretary, who is responsible for providing all of the briefing and background material required for these meetings through liaison with the IPG Project Team at DWW.

Partners under FEHRL umbrella: TRL

- **Chairman:** not appointed
- **Secretary:** Dr Ian McCrae, TRL, (imccrae@trl.co.uk)
- **Project manager:** Steve Phillips, FEHRL (steve.phillips@fehrl.org)

**INQUEST (FP6 CA – €0.20M, 100%, DG RTD)**

Information Network for Quiet European (road) Surface Technologies, 2006-2008

The project aims at providing guidance to less advanced European countries - in that particular field - on the use of low-noise technologies for road surfaces. The main instrument will be the dissemination of the Guidance Manual developed by SILVIA ("Sustainable Road Surfaces for Traffic Noise Control", a European project completed in August 2005) by means of a round of workshops in countries that were not involved in SILVIA, with a preference for new member states. Three partners that were leaders in SILVIA (Belgian Road Research Centre, Transport Research Laboratory Ltd and Danish Road Institute) will present lectures and conduct trainings. The local organizers will be members of FEHRL, the fourth partner in the Consortium.

Participants:
- BRRC
- DRI
- FEHRL

- **Coordinator:** Guy Descornet, BRRC (g.descornet@brrc.be)
- **EC Project Officer:** César Pérez García, DG Research (Cesar.PEREZ-GARCIA@ec.europa.eu)
SILENCE (FP6 Integrated Project – €18M, 50%, DG RTD)
Quieter Surface Transport

SILENCE aims at developing an integrated system of methodologies and technologies for an efficient control of urban traffic noise. “Integrated” means the combined consideration of city authorities and the two main players of urban traffic, individual traffic (on road) and mass transport (on rail and road). “System” means the holistic treatment of all traffic noise facets reaching from urban noise scenarios with individual noise sources (vehicles) via effects of traffic infrastructure and management up to the aspects of noise perception and annoyance.

The SILENCE approach starts with three steps: the assessment of urban noise situations based on data from European cities, the definition of two urban noise scenarios as reference basis for the whole project, the identification of the related noise abatement priorities and noise reduction potentials. On this basis, the RTD activities are developed and integrated to produce an unique system of noise abatement technologies and tools and methodologies for noise reduction and policies. Thereby, the essential categories of urban traffic vehicles are considered like cars, light duty trucks, buses, trams, metros, trains etc. One key element of this RTD approach is the global modelling for the prediction of noise effects on urban scenarios. Based on models for individual traffic elements developed in previous EU projects like VISPeR, RATIN and ROTRANOMO for road traffic and STAIRRS, and the TWINS model for railways, the global model predicts the overall noise emission of complex traffic situations and allows the prediction of noise emission by a source model coherent with the models used in HARMONOISE. This global model is used to apply the noise abatement technologies developed to the two reference noise scenarios, to predict their noise reduction effects and to validate the noise reduction potentials.

Over 50 partners led by AVL List
FEHRL role includes: arsenal, BASf, BRRC, DRI, IBDiM, KTI, LCPC and VTI.

- **Coordinator**: Franz Brandl, AVL List GmbH (franz.brandl@avl.com)
- **FEHRL Contact**: Bjarne Schmidt, DRI (bjs@vd.dk)
- **FEHRL Umbrella Manager**: Finn Thogersen, DRI (fit@vd.dk)
- **EC Project Officer**: Bill Bird, DG Research (william.bird@ec.europa.eu)

CALM II (FP6 Coordination Action – €0.2M, 100%, DG RTD)

CALM II aims at the synchronisation and encouragement of European transport noise research through an holistic system approach involving all related research areas. It is designed to facilitate the networking of organisations, the co-ordination of activities and the exchange and dissemination of knowledge.

CALM II will
- optimise research efforts
- identify synergies between noise research & development in the different transport modes
- strengthen the coherence of future noise research objectives
- identify remaining research needs
- check the actual state-of-the-art of noise abatement technologies and support their industrial implementation

By involving the most relevant stakeholders from European and national activities from road, rail, aeronautic and maritime transport as well as complementary research issues such as health and socio-economic aspect, the European Noise Working Groups and the respective European Research Advisory Councils, CALM II will support the European Commission in setting up the agenda for future transport noise research and development. The outcome will be published in the form of "Community Noise Research Strategy Plans" and the CALM II Consortium will use all modes of modern communication, electronically as well as brochures, papers, presentations and discussions at events to disseminate the results and enhance the Coordination of European noise research.

Altogether CALM II will essentially contribute to the vision for 2020 "to avoid harmful effects of noise from all sources and preserve quiet areas"
Participants:
- Adam Mickiewicz University, Institute of Acoustics
- AVL List GmbH
- Birmingham City
- FEHRL
- NL Ministry of Housing, Spatial Planning and Environment (VROM)
- O1dB Acoustics & Vibration Metravib
- RWTUEV Fahrzeug
- Umweltbundesamt (UBA)
- UNACOMA Service srl

- **FEHRL Budget**: €6,000 over three years
- **Coordinator**: Alfred Rust, AVL List GmbH (alfred.rust@avl.com)
- **FEHRL Contact**: Steve Phillips, FEHRL (steve.phillips@fehrl.org)
- **EC Project Officer**: Patrick Mercier-Handisyde, DG Research (patrick.mercier-handisyde@ec.europa.eu)

**TRN (Study Contract – €180K, 100%, DG Enterprise)**

Study about the technical possibility to apply the tyre/road noise emission levels of Directive 2001/43/EC without compromising vehicle safety.

FEHRL was contracted by the Automotive Unit of the European Commission’s DG Enterprise to examine the revision of the Directive concerning the limits for rolling noise emission applied to tyres.

Specifically, we investigated whether and to what extent technical progress would, without compromising safety, allow the introduction of more stringent limit values regarding tyre/road noise emission limits compared with those detailed in Directive 2001/43/EC.

In addition, we considered possible amendments to the Directive regarding provisions relating to safety, environmental and rolling resistance aspects. We also gave a detailed explanation about the necessity of the changes and their possible positive/negative contributions.

Participants:
FEHRL with arsenal, BASt, RWTUV, TRL and VTI

- **FEHRL Contact**: Mike Ainge, TRL (mainge@trl.co.uk)
- **EC Project officer**: Ian Knowles, DG Enterprise (ian.knowles@ec.europa.eu)
4. Design & Production Systems (DPS)

FEC Supervisor – Daruisz Sybilski

**ARCHES (FP6 STREP – €3M, 50%, DG RTD)**

Proposal full title: Assessment and Rehabilitation of Central European Highway Structures

There is one main objective of the project – to reduce the gap in the standard of highway structures between the New Members States and the rest of the EU. This will be achieved by developing appropriate tools and procedures for faster and more cost-effective rehabilitation and maintenance of sub-standard highway structures.

The increasing volume of European transport urgently requires an effective road and rail system in Central and Eastern countries. To bring this transport infrastructure up to modern European standards will require an immense investment – estimated by the European Commission to be about €100 billion, and a long term vision. New motorways will be required with a number of new bridges. Numerous existing road and rail bridges will need to be assessed, and eventually improved or replaced.

The overall goal of the proposed project is to develop ways to raise the standard of the highway structures of NMS and CEECS to the level necessary for their full economic integration in the EU and for the future development of the union.

The works will focus on the development of technologies and procedures for optimised rehabilitation of highway structures, taking into account issues particular to the NMS. This will be achieved by a global conceptual approach which can be summarised as Avoid, Prevent and Harden.

Rehabilitation and replacement will be as far as possible avoided by developing better safety assessment methods. Corrosion of reinforcement in concrete structures will be prevented with new concepts of localised cathodic protection, and application of new, cheaper, low alloy steel reinforcement. Advanced materials with very low permeability and high ductility will be used to replace deteriorated concrete and waterproofing membranes, harden structures in critical zones and provide long-term durability.

A strong emphasis will be put on pilot applications to demonstrate on real structures, in several countries of the consortium, the applicability of the concepts and techniques set forth.

Participants:
- Autostrade (IT)
- CDV – Transport Research Centre (CZ)
- Cementarna Anhovo (SI)
- EPFL – Technical University of Lausanne (CH)
- FEHRL – Europe’s National Road Research Centres (BE)
- IBDiM – Road and Bridge Research Institute (PL)
- Leggedoor Concrete Repair (NL)
- UCD – University College Dublin (IE)
- University Zagreb (HR)
- UPC – Technical University of Catalonia (ES)
- ZAG – Slovenian National Building and Civil Engineering Institute (SI)

- **Coordinator:** Tomasz Wierzbicki, IBDiM (twierzbicki@ibdim.edu.pl)
- **EC Project Officer:** César Pérez García, DG Research (Cesar.PEREZ-GARCA@ec.europa.eu)
In most of the NMS there is a constant need for new resistant pavement materials, that should comply with the EU regulations. Due to the priority of motorway construction, the standard of maintenance of other roads has lowered, resulting in an increased need for effective road maintenance and improvement over the years to come. The materials and technologies now used in the NMS differ from those adopted in common practice in the EU-15.

The research work will focus on developing procedures for producing and implementing materials for road construction, taking into account the tradition in the NMS, the availability of materials and construction techniques, as well as the specifics of already constructed roads. This will be achieved by four technical Work Packages, which will deal with the optimization of assessment techniques and procedures for roads, the improvement of pavement structures and road upgrading methods, and the minimization of the impact of road traffic on the environment.

The goal of all the technical work packages and transparent management is to produce practical guidelines. Field trials and demonstration activities will be used to verify the research results. The wide dissemination of outcomes, as well as clustering of the research work, will be a task of great importance. The consortium is composed mainly of experts from the New Member States in order to ensure that the research will be focused on issues relevant to the NMS.

Participants:
- Arsenal research (AT)
- CDV – Transport Research Centre (CZ)
- DDC – Consulting & Engineering Ltd. (SI)
- FEHRL (BE) - Europe’s National Road Research Centres (with TECER – Estonia, Transport and Road Research Institute (TKTI) – Lithuania, Road executive agency - Central Roads and Bridges laboratory (CRBL) – Bulgaria, Civil Engineering Institute of Croatia (IGH) – Croatia, Institut za puteve (IP) – Serbia and Montenegro)
- Ferriere Nord SpA (IT)
- IBDiM – Road and Bridge Research Institute (PL)
- KTI – Institute for Transport Sciences (HU)
- TUZA – Zilina University (SK)
- UCD – University College Dublin (IE)
- VTI – The Swedish National Road and Transport Research Institute (SE)
- ZAG – Slovenian National Building and Civil Engineering Institute (SI)

- **Coordinator:** Mojca Ravnikar Turk, ZAG (mojca.turk@zag.si)
- **EC Project Officer:** César Pérez García, DG Research (Cesar.PEREZ-GARCIA@ec.europa.eu)

**COST 354**

**Performance indicators for road pavements**

The specification of performance criteria from the perspectives of both road users and road operators is a key prerequisite for the efficient design, construction and maintenance of road pavements. Particularly the increasing use of life-cycle analyses as a basis for the selection of road pavements and the decision of whether or not to implement a systematic road maintenance scheme calls for an exact definition of the goals to be achieved and/or the performance criteria to be satisfied.

- **Chairman:** Prof Johann Litzka, TU Wien (jilzka@istu.tuwien.ac.at)
**NR2C (FP6 STREP – €4M, 50%, DG RTD)**

**New Road Construction Concepts**

Surface transport infrastructures in European countries represent a tremendous “heritage”; their adaptation to new societal demands (safe, efficient and environment-friendly multifunctional infrastructures, Inter-modal and Intelligent Transport System) are a major objective.

New technical innovations have been developed in research laboratories and introduced in test projects in different European countries; further developments however are quite slow, due to the multiplicity of road owners and to their cautiousness, the lack of design guidelines and a lack of cost/benefit ratio information. Furthermore, such innovations have not been integrated into a global vision of the road of the future, and thus appear as only marginal progress.

The objectives of this STREP are as follows:
- to express and derive new concepts for the road of the future, from a more global perspective,
- to develop a number of targeted innovations of special interest,
- to fulfil society’s most urgent needs concerning sustainable surface transport.

Some concepts will be analysed and ranked through a multi-criteria analysis that includes large-scale socio-economic considerations within the scope of sustainable development. The selected concepts will then be further developed in order to prove their technical and economic feasibility, clarify unsolved problems, propose specific innovations for problem resolution, and lay out a path towards their progressive implementation.

In addition, very promising innovations will be developed within specific fields leading to laboratory tests or pilot applications. For each innovation, the research will be concluded by an incremental implementation scheme and along the road network. These technical improvements may be introduced at the design and construction stages of a new infrastructure, but they will mainly be applied at the time of a large maintenance operation.

List of partners
- Laboratoire Central des Ponts et Chaussées
- Dienst Weg- en Waterbouwkunde, Ministerie van Verkeer en Waterstaat
- Ecole Polytechnique Fédérale de Lausanne
- Magyar Scetauroute Ltd.
- Forum of European Highway Research Laboratories
- Belgium Road Research Center
- Autostrade Concessioni E Costruzioni Austrade S.p.A.
- Greisch Ingénierie
- Eurovia
- Jean Muller International

- **Coordinator**: Brigitte Mahut, LCPC (mahut@lcpc.fr)
- **FEHRL Umbrella Manger**: Aleš Žnidarič, ZAG (ales.znidaric@zag.si)
- **EC Project Officer**: César Pérez García, DG Research (Cesar.PEREZ-GARCIA@ec.europa.eu)
**BiTVal (internal FEHRL project)**

**The Bitumen Test Validation project**

BiTVal was set up by FEHRL in response to a request from TC 336, Bitumen and bituminous binders, of the Comité Européen de Normalisation together with other stakeholders in the industry to assess the relevance of the results of bitumen tests on the required properties of asphalt mixtures. It is envisaged that there will be the following three phases to the project:

- Phase 1 - A review of existing data on bitumen tests used by TC336 WG1
- Phase 2 - A study of the gaps in the knowledge identified in Phase 1
- Phase 3 – A study of any bitumen test methods missing from the original list

Phase 1 has now been completed. The key outputs of Phase 1 of the BiTVal project were a database, covering publications of the identified bitumen properties and their relationship to asphalt properties and/or road performance, and a FEHRL report to TC336 WG1 summarising the performance-related aspects for each test method, together with recommendations for their use in the next generation of standards.

- **Project manager:** Ian Carswell, TRL (icarswell@trl.co.uk)
- **Website:** http://bitval.fehrl.org

**ELLPAG (joint CEDR-FEHRL project)**

**European Long-Life Pavement Group**

During 1998/99, the Western European Road Directors (WERD), now called the Conference of European Directors of Roads (CEDR), asked its members for topics of interest affecting the European road network, with the aims of identifying any knowledge gaps and initiating research. Long-life pavements (LLPs) was one of the topics suggested by the UK Highways Agency and was later endorsed by WERD as an appropriate area for a co-operative approach.

The European Long-Life Pavement Group (ELLPAG) was subsequently established as a FEHRL Working Group to act as the focal point for determining the way forward. Members of the Group comprise representatives of research institutes (FEHRL members) and the UK Highways Agency, representing CEDR.

The original objectives of ELLPAG can be stated chronologically as short-term, medium term and long-term objectives.

- The short-term objective of the Group is to produce within 12 months of starting the formal project a State-of-the-art Review of current European knowledge on the design and maintenance of long-life fully-flexible pavements.
- The medium-term objectives are to produce similar state-of-the-art reviews for the other common pavement types.
- The long-term objective is to produce a user-friendly comprehensive Best Practice Guidance note on long-life pavement design and maintenance for all the common types of pavement construction used in Europe.

- **Coordinator:** Brian Ferne, TRL (bferne@trl.co.uk)
- **CEDR Project manager:** Ramesh Sinhal, UK Highways Agency
5. Horizontal projects

FEC Supervisor – Govert Sweere

**ERTRAC II (FP6 CA – €1.2M, 100%, DG RTD)**
European Road Transport Research Advisory Council

The ERTRAC Coordination Action will provide a platform to all relevant stakeholders for establishing consensus on future road transport research directions. The objective is to provide the management and organisational together with technical support, required to facilitate ERTRAC achieving its mission. In addition the cooperation with the European Union services, Member States as well as other Technology Platforms will be ensured. Finally, ERTRAC results need an extensive promotion and dissemination towards a large audience of research partners and the public.

Participants:
- AVL List GmbH (AT)
- CLEPA (BE)
- CONCAWE (BE)
- CRF (IT)
- Daimler Chrysler (DE)
- ERTICO (BE)
- Faurecia (FR)
- FEHRL (BE)
- Ford (DE)
- POLIS (BE)
- Renault (FR)
- UITP (BE)

- **Coordinator**: Josef Affenzeller, AVL List GmbH ([josef.affenzeller@avl.com](mailto:josef.affenzeller@avl.com))
- **FEHRL Contact**: Steve Phillips, FEHRL ([steve.phillips@fehrl.org](mailto:steve.phillips@fehrl.org))
- **EC Project Officer**: Patrick Mercier-Handisyde, DG Research ([patrick.mercier-handisyde@ec.europa.eu](mailto:patrick.mercier-handisyde@ec.europa.eu))

**CERTAIN (FP6 CA – €0.75M, 100%, DG RTD)**
Central European Research in Transport Infrastructure

Strategic objectives addressed:
- Form and coordinate a sub-cluster of the three STREP proposals dedicated to the New Member States (NMS) and integrate it into the FEHRL Strategic Road Research Programme (SERRP) Cluster.
- Create a platform for exchanging future technologies of the road infrastructure industry (including SME), particularly for the actors from the New Member States and other Central and Eastern Europe countries (CEEC).
- Realise a system approach for future R&D activities in NMS and CEEC to avoid their fragmentation and to open the best possible routes to the end users and industrial implementations.
- Support integration of R&D activities from the NMS and CEEC member states into the European Research Area (ERA), particularly where they relate to the European Road Transport Research Advisory Council (ERTRAC).

The aim of CERTAIN is to facilitate integration of the EU New Member States (NMS) and other Central and Eastern European countries (CEEC) into the established research and development community of the European Union. Due to the poor success rate of NMS partners under the first two calls of the Sustainable Transport Programme of the Sixth Framework Programme, three clustered STREP proposals on road materials, pavements and structures are being prepared by the national road research institutes of three NMS.
WP 1 will provide the necessary clustering environment for the three STREPs and the relevant on-going projects in which they will work in synergy to provide maximum output for the NMS and CEEC without duplicating their work.

Language is a major obstacle for efficient dissemination of European research results in the NMS and CEEC. Thus, apart from four international events, WP 2 will organise six workshops in mother languages to attract much higher number of the interested end-users. For the same reason, it will translate into the mother languages some of the key documents of the three projects.

Until today, partners from some NMS have taken part in the EU Framework projects on road infrastructure research, but without major responsibilities. WP 3 will organise training courses for leaders of European research projects, in order that partners from NMS and CEEC will play a much more active role in the future European research activities.

WP 4 will work on dissemination of results. It will prepare a consistent multi-lingual Internet platform for the three projects and manage the common end-users group (road administrations, designers, construction companies, industry etc.). This will provide an effective link between the road research activities at the European level and the implementation at local level.

Participants:
- CDV
- FEHRL
- IBDiM
- ZAG

- **Coordinator:** Aleš Žnidarič, ZAG (ales.znidaric@zag.si)
- **EC Project Officer:** Cristina Marolda, DG Research (maria-cristina.marolda@ec.europa.eu)
- **Website:** http://certain.fehrl.org

**TRA (FP7 CSA – €0.45 M, 100%, DG RTD)**

Transport Research Area (CEDR/ERTAC/EC conference initiative)

TRA 2008, the second European Road Transport Research Arena, will be held in Ljubljana, Slovenia, from 21-24 April 2008.

This CSA supports activities to encourage delegates from New member states and EU neighbouring countries.

Partners:
ZAG – Slovenian National Building and Civil Engineering Institute, Slovenia, DRC – Road and Transportation Research Association of Slovenia, DDC Engineering and Consulting Ltd., Slovenia, FEHRL

- **Project Coordinator:** Aleš Žnidarič, ZAG, (ales.znidaric@zag.si)
- **EC Project Officer:** Enzo Guelli, DG Research, enzo.guelli@ec.europa.eu
YEAR (FP7 CSA – €272K, 100%, DG RTD)
Young European Arena of Research

YEAR is a competition for early-stage researchers who are exploring the area of road transport within their research. The competition will give the students an opportunity to showcase their work to experts within the field, both on the web and, for the best applicants, at the Transport Research Arena conference in Slovenia in April 2008.

Students from 27 European countries have submitted abstracts to http://year.fehrl.org under one of six pillars. This collection of abstracts showcases the breadth and range of Transportation research in Europe and is open for viewing by all those interested in the field.

From over 260 submissions, 50 finalists will be invited to attend the TRA08 Conference in Ljubljana, Slovenia in April 2008, to display their work. Gold, Silver and Bronze winners will be announced at this conference for each of the 6 pillars, for up to 1500 delegates to observe.

The TRA08 Conference (www.tra2008.si) enhances the alignment of road transport research at European and national levels and it brings together all stakeholders. It is a prestigious forum for all YEAR finalists to discuss their transport research with established researchers, policy makers and end-users alike within the field.

Aims & Objectives
- to have a strong participation of young transportation researchers in the TRA08 Conference
- to identify the top performing young researchers and acknowledge their achievement
- to build a vibrant community of young transport researchers in Europe and neighbouring states
- to provide students with the opportunity to view their abstract in the context of what others are doing, to compare their work to the work of others and to make contact with others working in similar fields
- to create an important opportunity for early-stage researchers to meet each other and to discuss their work with researchers from all over Europe
- to stimulate the imagination of delegates at the TRA 2008 conference and provoke discussion on the future of road transport

The 6 Pillars
All submissions must fall within one of the following pillars:
1. Energy, Environment & Resources
2. Safety & Security
3. Transport, Mobility & Infrastructure
4. Automotive Design & Production
5. Infrastructure Design & Production
6. Future Visions of Road Transport

Participants:
University College of Dublin (UCD), ZAG, Continental Corporation, FEHRL

- **Project Coordinator**: Eugene O’Brien, UCD, (eugene.obrien@ucd.ie)
- **EC Project Officer**: Susana Martins, DG Research, (Susana.martins@ec.europa.eu)
**SIMBA2** (FP7 CSA – €800k, 100%, DG RTD)

Strengthening road transport research cooperation between Europe and emerging international markets

SIMBA2 will map the national and regional R&D activities, policies and future requirements and propose demonstration cases to the regional stakeholders, organise seminars, business meetings, and industry visits in order to keep a close contact between the key players. The dissemination of results will be carried out through the established cooperation network.

Participants:
- (Coordinator) ERTICO - EU
- POLIS - EU
- AEA – Brazil
- CSIR – South Africa
- FEHRL - EU
- ITS China
- ITS Denmark
- SIAM – India
- FEHRL Umbrella members: – DRI, TRL and VTI

- **FEHRL Budget**: €100 000 over two years
- **Coordinator**: Marianna Andrade, ERTICO (m.andrade@mail.ertico.com)
- **FEHRL Contact**: Hans Ertman Larsson, FEHRL (hel@vd.dk)
- **EC Project Officer**: Patrick Mercier-Handisyde, DG Research (patrick.mercier-handisyde@ec.europa.eu)

**SIMBA** (FP6 CA – €1.1M, 100%, DG RTD)

Strengthening road transport research cooperation between Europe and emerging international markets

SIMBA will map the national and regional R&D activities, policies and future requirements and propose demonstration cases to the regional stakeholders, organise seminars, business meetings, and industry visits in order to keep a close contact between the key players. The dissemination of results will be carried out through the established cooperation network.

**Areas covered**
- Infrastructure development
- Automotive R&D
- R&D cooperation on Intelligent Transport Systems and services

Furthermore the project aims to:
- Increase road safety
- Support the strategic objectives of the research programme, to prepare, support and facilitate the rapid adoption and transfer of technologies and research results
- Create joint R&D activities
- Define R&D priorities and cooperation areas
- Define key stakeholders and create networks
- Make recommendations for new innovative road research activities to be launched locally and in the EU
- Define future priority cooperation projects
- Increase the visibility of the European industry and support the industry to respond to emerging business opportunities
- Support consortia of experts from the industry, research sector, and public authorities
- Map political, environmental, and infrastructural development trends
Participants:
- (Coordinator) European Road Transport Telematics Implementation Coordination Organisation s.c.r.l. ERTICO - EU
- ACEA - EU
- AEA – Brazil
- CSIR – South Africa
- FEHRL - EU
- ITS China
- ITS Denmark
- SIAM – India
- FEHRL Umbrella members: – TRL and VTI

- **FEHRL Budget**: €100,000 over two years
- **Coordinator**: Marianna Andrade, ERTICO (m.andrade@mail.ertico.com)
- **FEHRL Contact**: Steve Phillips, FEHRL (steve.phillips@fehrl.org)
- **EC Project Officer**: Patrick Mercier-Handisyde, DG Research (patrick.mercier-handisyde@ec.europa.eu)