



Conférence Européenne  
des Directeurs des Routes  
Conference of European  
Directors of Roads

## **CEDR TRANSNATIONAL ROAD RESEARCH PROGRAMME**

**Call 2013**

### **Roads and Wildlife:**

- **Cost-efficient Road Management**
- **Cost-efficient Mitigating Strategies**

Cross-border funded Transnational Research Programme

funded by

Austria, Denmark, Germany, Ireland, Norway, Sweden,  
Netherlands and UK

### **Description of Research Needs (DoRN)**

September 2013

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## 1 General introduction

This Call for Proposals is launched by the Conference of European Directors of Roads (CEDR). CEDR is an organisation which brings together 28 road directors of European countries. The aim of CEDR is to contribute to the development of road engineering as part of an integrated transport system under the social, economical and environmental aspects of sustainability and to promote co-operation between the national road administrations. The website [www.cedr.fr](http://www.cedr.fr) contains a full description of its structure and activities.

CEDR recognises the importance of research in the development of sustainable transport and has established a Technical Group (TG) to monitor European research activities and to advise the CEDR Board on issues relating to research. TG Research responsibilities include dissemination of research results as well as initiating research programmes that support CEDR members in current and future situations.

This Transnational Research Programme follows on from previous programmes organised under the ERA-NET ROAD brand. “ERA-NET ROAD – Coordination and implementation of Road Research in Europe” was a Coordination and Support Action funded by the 7th Framework Programme of the European Commission which concluded in December 2011. The goal of ERA-NET ROAD (ENR) was to develop a platform for international cooperation and collaboration in research areas of common interest. This included the production of an “ENR-toolkit” for carrying out transnational research and trials of the various procedures developed through a series of projects and programmes funded directly by European Road Administrations. Full details of the research projects commissioned through this process can also be viewed at the ENR website [www.eranetroad.org](http://www.eranetroad.org).

The Governing Board of CEDR (CEDR GB) recognised in June 2010 that ERA-NET ROAD was delivering significant value for money as it structured the way CEDR members identify commonalities, reduce duplication of research and plan for transnational calls if needed. CEDR gave a mandate to its Technical Group Research (TG Research) to identify opportunities for further transnational road research programmes on the basis of the excellent start and of the experience gained during the ERA-NET ROAD project. CEDR also requested that:

- TG Research only proposes suitable research topics and identifies good research proposals;
- TG Research presents research proposals, when appropriate, to CEDR GB for decision; CEDR GB will decide what programmes are taken forward;
- All call procedures shall be open and transparent and all EU members shall be invited to participate, with no advantages given to preferred suppliers or groups of suppliers; and
- The costs of developing and managing the transnational calls shall be supported only by those CEDR members taking part in the programme.

## 2 Introduction to Call 2013

This Transnational Research Programme was developed to fulfil the common interests of the national road administration members of CEDR. The topics considered for this programme were initially identified through discussions with specialists from the road administrations and then prioritised in relation to their particular needs. This process was used to select the topics for possible inclusion in the Call. The need for research and the expected outcomes were

then discussed at thematic workshops organised by TG Research to which all road administrations were invited to send delegates. The detailed specification of the topic, as contained in this Description of Research Needs (DoRN), was then developed by a Task Force, the members of which are listed on page 2 of this document.

The national road administrations participating in this Call are Austria, Denmark, Germany, Ireland, Norway, Sweden, Netherlands and UK. As in previous collaborative research programmes, the participating members will establish a Programme Executive Board (PEB) made up of experts in the topics to be covered. The Common Obligation Programme Model from the “ENR-toolkit” has been adopted, with some modifications to take account of the role of TG Research in the process. The research budget will be jointly provided by the road administrations who will also provide participants to the PEB as listed above. PEB members will designate one of them to act as chair.

TG Research has, on behalf of CEDR, appointed a Programme Manager (ProgM) to take charge the administration of this Call for Proposals. For this programme, the ProgM will be the National Roads Authority, Ireland. Responsibilities of the ProgM include preparation of the Call for Proposals, financial management of the programme and setting up and managing the contracts with the research providers. These responsibilities will be conducted by the ProgM in its country under its law and regulations under the direction of TG Research. The terms under which the ProgM and PEB will operate will be set out in a Collaboration Agreement, signed by senior representatives of each participating road administration. The Collaboration Agreement will also provide the basis for the financial governance of the Programme.

Applications are invited from suitable qualified consortia in response to this Call for Proposals. Consortia must consist of at least two legal entities from different EU countries. Individuals and organisations involved in the formulation of the Call specification are prohibited from any involvement in proposals. Applications should focus on the sharing of national research, knowledge and experience at all levels as an important prerequisite for achieving the goals of CEDR and its members. This will accelerate the development of faster and durable methods and techniques for road maintenance and management. It is particularly important that the results can be easily implemented through various demonstration projects in order to contextualise **the benefits of the transnational collaboration**. The applications will be evaluated by the PEB in relation to:

- Extent to which the proposal meets the requirement of the DoRN
- Technical quality of proposal
- Track record of consortium members
- Management of project
- Value for money

Details of these evaluation criteria and how they will be interpreted and applied by the PEB are presented in the Guide for Applicants (GfA) which accompanies this Call for Proposals.

### 3 Aim of the Call

The aim of this research programme is as follows: To understand the effectiveness of different mitigating strategies in order to solve the conflict between wildlife and roads and investigate more cost-efficient methods for building and maintaining road structures and structures for reducing the impact on wild life such as fauna passages.

The European road network does not only support an extensive and vital transport system, it also influences the surrounding environment to a great extent.

Biodiversity is an area of priority for the EU. On 3<sup>rd</sup> May 2011, the EU Commission announced a new strategy to halt biodiversity loss within ten years. This strategy emphasizes the severity of habitat degradation caused by fragmentation and the importance of incorporating ecological connectivity and green infrastructure into spatial planning. In November 2010, the UN and the parties to the Convention on Biological Diversity adopted a new Strategic Plan for Biodiversity 2011–2020, which also stresses the need to integrate biodiversity values into planning processes and for all stakeholders to keep the impacts on natural resources within safe limits. The UN General Assembly has declared 2011–2020 the Decade on Biodiversity.

Hence maintaining a green infrastructure in Europe is of equally great importance to the EU as maintaining and developing a transport infrastructure. Methods of combining these two goals should, therefore, be investigated and best practices should be identified.

Road investments are subjected to extensive discussions between road authorities and environmental authorities with often long planning periods and sometimes result in demands for expensive mitigating actions as a result. It is therefore important that the mitigating strategies are cost-efficient.

In order to achieve a more cost-efficient approach to comply with environmental demands, including demands from different EU legislations; new research has to be performed. In order to get broad enough databases for sound conclusions the research in some areas has to be European. This call will therefore focus on subjects with the greatest need for international cooperation. It should also focus on implementation by the road administrations so that the new information is as useful as possible.

This call for proposals focuses on the following issues:

- Cost-efficient road management for the compliance with the demands from\_wildlife:
  - Compliance with EU legislation
  - Procurement
  - Maintenance
  
- Cost-efficient mitigating strategies for roads and wildlife:
  - Effects on populations of mitigating strategies.
  - What is good enough?
  - Strategies for safeguarding the effect of mitigating actions.
  - Mitigating strategies for bats.

## 4 Reasons for the Transnational Research Programme

The main reason for this Transnational Research Programme is to gain better knowledge and guidance on how to combine roads with the surrounding nature and wildlife. Many national initiatives have been taken to gather information, but for the last ten years no European initiative has been launched.

Several European countries collaborated in an EU financed project COST 341 in order to produce a handbook on best practice on roads and wildlife. The data is still valid and used in many countries, including USA, as a source of information.

Although still relevant the handbook has been in circulation for some time and does not cover new developments such as EU legislations. Many questions outside the scope of the handbook are also important and require resolution.

## 5 Research Objectives

The programme is based on two objectives which are described below together with expected outputs:

1. **Cost-efficient road management for the compliance with the demands from wildlife**
2. **Cost-efficient mitigating strategies for roads and wildlife:**

These objectives were developed following a series of workshops involving specialists from a number of partner Road Administrations. In these workshops, it was recognised that the traditional approach without pan-European co-operation often resulted in duplication of research. This research programme seeks to readdress the problem by integrating these issues into an optimised management framework.

Applicants should ensure their project proposals are **clearly linked to at least one of the objectives** listed above, although it is accepted that there may be overlap between them. Proposals should emphasise the **transnational benefit** of the project outcomes for the participating national road administrations.

### Description of the objectives:

1. **Cost-efficient road management for the compliance with the demands from wildlife**
  - Environmental legislation - The infrastructure providers have to take into account the provisions of the EU Birds and Habitats and Species Directives. It is therefore important to develop guidance that enables the NRAs to understand and meet the requirements whilst being cost effective with design, construction and future maintenance. There is great variation across the EU in undertaking both appropriate assessment and more general Environmental Impact Assessment in order to meet the directives requirements and this leads to different interpretations of the severity of the impacts. Guidance is therefore needed to promote a more consistent approach to defining and measuring the impacts.
  - Procurement - All administrations are seeking to drive down costs whilst moving towards outcome based specifications in construction and maintenance contracts. It is desirable to have a common understanding across Europe of how to procure complex civil engineering projects that deliver quality outcomes for the protection of nature. This should be achieved through describing the functions that the project provides. These functions should be able to be monitored and validated easily.
  - Maintenance of roads can have a significant role to play in adapting the road to the surrounding landscape. But maintenance of mitigating structures such as fauna passages is also vital to maintain the function of the structures. The road is also not only a threat to nature but can also function as a respite for species pushed away from the agricultural landscape. Proper maintenance can increase these positive

effects of roads. It is therefore vital to understand how a maintenance strategy should be designed to support the ecological functions in a cost-efficient way.

- The outcome of the above bullet points should partly be in a form of an update of the existing guideline of best practice (the so called COST 341 hand book).

## 2. Cost-efficient mitigating strategies for roads and wildlife:

- Effects on population by mitigating strategies - Many European countries have defragmentation strategies or strategies to reduce the conflict between roads and wildlife. In this work, a significant amount of data have been gathered on a project level showing that structures such as fauna passages are working. However, less is known on a population level. Some examples, such as the Danish work with otters, strongly suggest that strategies for wildlife can be successful. A better understanding is however needed in order to design advice on mitigating strategies. This issue needs data from many places and with many species in order to understand “where to do what?” and “where to follow which strategy?”. In a highly fragmented landscape, with a dense road network and with high traffic intensity, another strategy should, most likely, be outlined compared to another situation with less roads of high traffic volumes. Different strategies have also to be adapted to different groups of species. Meta-studies or similar approaches could help sort out which strategy fits which situation. Since this is a field which requires significant data sources collaboration with, for instance, USA and Australia could lead to better results.
- The demands from environmental organisations and legislators can require road authorities to expend large amounts of resources on mitigating the negative effects of roads on nature. At the same time it is often difficult to assess how significant an effort is required to solve the conflict. Is one fauna passage per 100 km sufficient? Or two? Or ten? It is therefore vital to define a method and criteria to assess if a road is permeable or not and what is good enough.
- Sometimes structures such as fauna passages lose their function due to actions taken in other sectors of society. It can be a new housing development or changed land-use in other ways in areas around the road that destroy the ecological function that the fauna passage is safeguarding. For a cost-efficient strategy to work in the long run it is important to understand how these events are prevented. An analysis of institutional arrangements that leads to safeguard the result of road authorities' effort to reduce ecological effects of infrastructure is therefore needed. This can be done as a “best-practice” study over Europe.
- Mitigating strategies for bats. Many European road authorities face problems with conflicts between roads and bats. Bats are protected by European directives and the conflicts often stops or delays road projects. Different species of bats have totally different behaviours. It is vital to get a state of the art report on what strategy helps what species of bats so that effective solutions to the conflict can be designed.

## 6 Overview of current and previous activities

A general overview of current and existing relevant research projects undertaken across Europe and other sources of information are outlined in Appendix A. These resources and subsequent reports will provide the starting point for proposals submitted in response to this Call and proposals will be evaluated on this basis. **Applicants must not duplicate existing results or ongoing projects.** Proposals should be based on the outcomes and state-of-the-



art identified in these projects listed below. Failure to take account of available research conclusions will disqualify proposals from this call.

## **7 Additional information**

The aim of this Transnational Research Programme is to provide applied research services for the benefit of national road administrations in Europe. The Call is open to legal entities established in Europe. Applications using the templates provided must be submitted by a coordinator of a consortium of at least two independent organisations from different countries. A maximum 75% of the workload can be assigned to one partner.

The expected duration of this programme is 36 months. The target dates within this programme are as outlined in the Guide for Applicants.

The duration for individual projects can be up to 24 months within the programme timescale.

The programme language is English: only proposals submitted exclusively in English are acceptable.

The target budget provided by the participating national road administrations for this programme is EUR 1.2 million.

Please refer to the Guide for Applicants (GfA) for full details of how to submit proposals in response to this Call. Submissions using the templates provided should be made electronically using the eTenders postbox system. Submissions received after the deadline will not be considered.



## Appendix A: Existing projects and resources

### Europe wide

EU ERA-NET ROAD Part of the SUNRA (Sustainability for National Road Administrations).

The network IENE gathers organisations and scientists involved in Road and wildlife issues. Information on existing research can be found on [www.iene.info](http://www.iene.info) under the conferences. The next conference will be in spring 2014.

The sister organisation ICOET is a platform for mostly USA based scientists and similar information can be found at [www.icoet.net](http://www.icoet.net).

ERA-NET ROAD - [www.eranetroad.org](http://www.eranetroad.org)

World Road Association - PIARC - [www.piarc.org](http://www.piarc.org)

### National programmes

Many of the European countries have programs or projects related to this topic. Here is a short survey:

**Sweden:** Triecol-an research program financed by the Swedish Transport Administration. ([www.Triekol.se](http://www.Triekol.se))

**France:** Research on landscape connectivity for mitigation planning.

**Portugal:** Genetic and population effects on small mammals.

**Norway:** Various projects on impact of roads and traffic on reindeer and moose by NINA ([www.nina.no](http://www.nina.no))

**Germany:** Impact on biodiversity etc.

**Hungary:** Research on the spread of invasive species.

**Netherlands:** Substantial national research