

## ACRONYM

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a research project of the  
cross-border funded joint research programme  
“ENR2011 MOBILITY – Getting the most out of Intelligent Infrastructure”

#### 1) Introduction

“ENR2011 MOBILITY – Getting the most out of Intelligent Infrastructure” is a trans-national joint research programme that was initiated by “ERA-NET ROAD II – Coordination and Implementation of Road Research in Europe” (ENR2), a Coordination Action in the 7th Framework Programme of the EC. The funding partners of this cross-border funded Joint Research Programme are the National Road Administrations (NRA) of Belgium, Switzerland, Germany, Netherlands, Norway and United Kingdom.

#### 2) Project Facts

<b>Duration:</b>	01/10/2011 – 30/11/2012
<b>Budget:</b>	EUR 390.000
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<b>Partners:</b>	Chris van Hinsbergen, Fileradar, The Netherlands Chris Tampère, Katholieke Universiteit Leuven, Belgium Monica Mendez, ETH Zurich, Switzerland Hans van Lint, Technische Universiteit Delft, The Netherlands

#### 3) Project Description

A critical element of making better use of existing road capacity is the prediction, in virtually real time, of short-term future traffic conditions, so that adjustments can be made to controllers such as traffic signals and Variable Message Signs, and information can be provided to drivers to stay away from incident areas and avoid the onset of gridlock. Real-time modelling is perceived to be highly specialist, expensive and data hungry; however, across Europe a number of Traffic Control Centres already operate supported by considerable sophistication in the prediction tools. These systems are provided by a plethora of suppliers, depend on a variety of data sources, with high maintenance cost and use a range of alternative forecasting algorithms, software and hardware, whilst the user interface is generally bespoke. These barriers stop the National Roads Authorities from collaborative learning from each other’s mistakes and successes, as the constraints and idiosyncrasies of each individual implementation are probably too great to encourage joint innovation.

STEP (Short TErM Prediction) is a project that has been designed to explore and hopefully overcome many of these institutional barriers, with the ultimate aim of implementing and testing a robust solution for real-time traffic modelling in an operational environment, based on generally available data, with lower maintenance costs. We have agreement with two

Traffic Control Centres in two countries so that we can apply our short-term prediction tools in practice and test their reliability and usefulness for operators. Barriers to innovation are overcome by running the short-term predictions remotely, removing the need to install new software and hardware in the TCCs. The risk to existing operation will be minimal; but the possible gains are considerable.

If successful, the two implementations will form the basis for the production of trans-national standards and specifications for implementation in Traffic Control Centres across Europe, including the design of user-friendly interfaces easing the understanding of dynamic information.

The project team consists of respected academics, consultants and operators from a number of European countries who collaboratively provide all the required know-how to achieve a system that aligns with best practice, is deliverable across Europe, and is low cost in data inputs and maintenance. In addition to established organisations our consortium includes an exciting new small size enterprise.

#### **4) Expected Results**

All partners have entered the Consortium with a clear focus on the potential for exploitation, should the trials be successful and lead to practical implementation of real-time predictions.

After the project, we will seek opportunities to deploy the beneficial elements more widely. The results will be most directly applicable to inter-urban roads networks, so we will seek opportunities to improve the traffic management in our regional UTMC systems and generally in national and regional traffic management centres. Although not as directly transferable, the project results should also inform urban traffic management contexts, where we are aware that local traffic managers have expressed a requirement for effective short term predictions. The project results are aimed to be transferable, and the project partners will be able to use the knowledge gained through STEP to support wider needs for European deployment.

STEP Deliverables include:

- Technical Report: Traffic management systems with short-term prediction: review of existing models and recommendations for widespread deployment
- Technical Report on customer requirements
- Development of user interface
- Evaluation Reports on the Dutch and English pilots: live predictions and live evaluation of measures
- Specification for a generic real-time network model
- Recommendations for standardisation of user interfaces
- Evaluation Report: key findings and recommendations

Further activities to ensure the wide visibility and identification of the project will be developed as part of a marketing driven dissemination campaign which will include the production of and distribution of standards and specifications on short-term prediction. These will be promoted via the partners' own organisational websites, as well as through conference papers and presentations; and participation in relevant events, workshops, specialised international meetings etc. Examples include ITS Europe and ITS World Congresses, the European Transport Conference, and TRA 2014.