

COBRA **COoperative Benefits for Road Authorities**

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

Duration: 01/09/2011 – 01/02/2013

Budget: EUR 415.000

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3) Project Description

Road authorities traditionally use road side systems to perform their classic traffic management and traffic information tasks to inform road users. In various front-runner countries in the world cooperative systems are being developed. Cooperative Systems communicate and share information dynamically between vehicles or between vehicles and the infrastructure, to give advice or take actions with the objective of improving safety, sustainability and efficiency. These systems are on the verge of a breakthrough and many services will develop quite rapidly over the next couple of years to become ‘common reality’. With the advent of mature cooperative systems, road authorities are increasingly confronted with the question whether to keep investing in their existing solutions or to make their infrastructure intelligent. Several aspects play a role in this decision such as costs and benefits, return on investment, expected deployment of ITS, and legal and privacy issues. The main question of this project therefore is how road authorities need to position themselves to optimally benefit from changes in the field of cooperative systems and stay connected to the in-car developments.

4) Expected Results

For road authorities to optimally benefit from the changes in the field of cooperative systems they need answers to questions such as: What CS-services can be expected to become market-ready within short/medium term in Europe? What are the functional, legal and technical requirements for road side equipment to allow these CS-services to become reality? What are the benefits of these investments for road operators in terms of traffic efficiency, traffic safety, environmental impacts, and which applications can be implemented on a European scale? What investment, operational and maintenance costs are to be made in order to reach the expected benefits? What to do with the current in-use ITS technology? To provide answers to these questions, the research in COBRA will deliver in the following results:

1. An overview of the 'state of the art' about the deployment of cooperative systems and the roles for various actors, among which the road authorities.
2. An overview of requirements for decision making on the deployment of cooperative services and intelligent infrastructure.
3. An impact assessment matrix and report, containing an overview of expected impacts of (configurations of) cooperative services in terms of optimised vehicle flow, traffic safety and emission reduction, compared to existing Intelligent Transport Systems.
4. A cost-benefit analysis of cooperative systems, based on the impact assessment and given investments and maintenance costs.
5. A decision support tool for road authorities, to be used to make balanced decisions about the investment in intelligent infrastructure.
6. An analysis of the legal issues that play a role around the deployment of cooperative systems.
7. A set of clear recommendations for road authorities about the actions to take to enable the deployment of cooperative systems, including a roadmap to meet the challenges for the implementation.

These results can be used by road authorities to make well founded decisions whether to continue current programs and whether to invest in different configurations of cooperative systems.