

# Ex ante Evaluation of the deployment programme for Intelligent Transport Services (2007-2013) following the MIP TEMPO programme 2001-2006

Framework Contract for Evaluation in the Field  
of Energy and Transport (TREN1-009)

Executive summary

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# Executive summary

## *The study objective of this ex-ante evaluation*

Between 2001 and 2006 the Directorate General for Energy and Transport has financed studies and deployment of Intelligent Transport Services (ITS) on the Trans European Road Network, in the targeted programme for transport TEMPO. This programme is a part of the TEN-T Multi annual Indicative Programme (MIP)<sup>1</sup>. The main objective of TEMPO is to enhance the service quality on the road network through a number of interlinked multinational Euro-Regional Projects. These projects cover the EU15 Member States except Greece.

The need now is to assess whether there is a need to continue the EU involvement in the deployment of quality network management, using intelligent transport services, and if so, to assess the most appropriate format for such continuation. Through a dedicated Framework Contract on Impact Assessment and Ex ante Evaluations, DG TREN has approached the consortium led by ECORYS to carry out the ex ante evaluation for a possible new programme for deployment of ITS.

ITS is seen as an effective tool in fighting congestion, increasing road safety and reducing the environmental impacts of transport. It directly and indirectly contributes to the three main European Transport Policy objectives:

- Since ITS is effective in increasing the average speed in highly congested areas, it contributes to the economic competitiveness of Europe.
- Since ITS is also effective in reducing the number of accidents on the road network, it contributes to the (transport) safety of European citizens.
- And since congestion has a negative environmental impact due to the high energy consumption, ITS also contributes to a sustainable transport system.

## *Problems in the ITS domain*

A series of problems has resulted in a too slow deployment and in not reaping the full potential benefits of ITS. These problems are summed up below and explained in more detail in the report:

- Lack of interoperability of ITS;
- Huge initial investments required;
- Lack of awareness and knowledge on the impacts of ITS;
- Lack of clarity in ITS deployment objectives;
- Lack of coherence between ITS deployment at European, national, regional and local level;
- Lack of economies of scale;

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<sup>1</sup> Commission Decision C(2654) September 2001

- The involvement of many actors with different jurisdictions;
- Weak link with multimodality.

#### *The roles of different actors involved in ITS Deployment*

Until now, deployment of ITS has mainly been a role of National Road Administrations (NRAs) or highway concessionaires. Road administrations have often initially introduced ITS to solve single problems such as safety black-spots or congestion. Later on it has become clear that the many (congestion) problems are not just local problems and need a network approach. However, there is still a patchwork of fragmented regional and national ITS services, rather than a homogeneous network or market. NRAs, as well as concessionaires need to collaborate in order to serve the European road user in the best possible way. Due to national priorities and conflicting interests, this collaboration requires strong co-operation and a clear vision on how all Member States and their citizens would benefit most from a harmonised ITS approach.

The private sector is not directly involved in the current ITS Deployment Programme, but acts as supplier of systems and services. However, the development of personalised traveller information services by private organisations makes that more sound business cases for these kinds of services will be translated into effective business models in the near future. In the collection of monitoring data telecom organisations are taking strategic positions by using floating car data.

There are four reasons that point at a role for the Commission in ITS deployment:

- Ensuring interoperability of ITS systems across the EU, thereby stimulating the TEN-T development and uninterrupted movement of goods and persons.
- Stimulating standardisation of the ITS networks, resulting in lower total transport costs and thus higher efficiency of the transport system.
- Integrating the management of the various national road networks into one European network, thus allowing a true optimisation of the network instead of sub-optimisation per country.
- Deployment of ITS helps to bring forward the policy objective of an efficient and sustainable transport system, thereby increasing the competitiveness of Europe. ITS also allows transport policies to be more effective and efficient.

#### *Several lessons can be learned from the current ITS Deployment Programme*

Some lessons that can be learned from the current ITS Deployment Programme correspond with the problems identified before, like the lack of common vision & strategy for ITS deployment, the inability to clearly show the benefits of ITS, and the low priority given to ITS. Other important lessons learned from the current programme are:

- The positive evaluation of the current programme structure, organised around Euro-Regional Projects enabling close co-operation between neighbouring regions, which are often confronted by similar problems;
- Ineffective functioning monitoring and evaluation mechanisms;
- Bureaucracy in project and programme management;
- The technical orientation of many programme participants;
- Insufficient dissemination and marketing among stakeholders which are not directly involved.

### *Continuation of TEMPO?*

The role of the EU is presently being reconsidered. The reason for this is the discussion of a possible new ITS Deployment Programme for the period 2007-2013. The present report gives an ex ante evaluation of such a new programme.

The ex-ante evaluation considers various policy options, among which an exit strategy. The six other policy options all assume a continuation of an ITS Deployment Programme, but with different scopes. The first question to be answered is whether the Commission should continue with a European Programme for ITS Deployment.

Based on an analysis of the consequences of an exit strategy, it is recommended to continue with a European ITS Deployment Programme in some form for three main reasons:

- The leverage function of co-funding guarantees deployment on border crossing sections and development of long distance traffic management plans. Without a European Programme, these kinds of projects will no longer be realised as a consequence of a focus on national priorities.
- Without European harmonisation and standardisation of ITS, economies of scale will not be realised, leading to higher costs of ITS and a lower cost effectiveness of ITS applications. It is not expected that another international organisation than the Commission (e.g. CEDR) has the financial resources and the legislative tools to play this coordinating and steering role.
- A new ITS Deployment Programme will also speed up ITS deployment through the exchange of best practices and knowledge across Member States. Countries with a well developed ITS infrastructure pull countries with a weaker developed ITS infrastructure. Without European coordination, the weaker countries would not benefit from this knowledge exchange.

### *How to continue?*

The next question is how to continue with a New Programme for ITS Deployment. Three different dimensions are relevant in defining the different policy options:

- Only ITS deployment on the TERN (corridors) or also ITS deployment on non-TERN roads (regional/urban network)?
- Only ITS deployment on behalf of car-users, or also ITS deployment for multimodal trips?
- Only ITS deployment for traffic management (domains monitoring, data-exchange and traffic management) or also ITS deployment for traveller information services?

As a consequence of discerning these three dimensions the following six intervention strategies have been taken into account:

- Basic TERN strategy: Traffic management on TERN
- Full TERN strategy: Full ITS services on TERN
- Basic TERN+ strategy: Traffic management on TERN+
- Full TERN+ strategy: Full ITS services on TERN+
- TERN & Multimodal strategy: Traffic management on TERN and Multimodal traveller information services
- TERN+ & Multimodal strategy: Traffic management on TERN+ and Multimodal traveller information services

For each of these strategies, the contribution to the general and specific objectives of a possible new Programme has been assessed.

In order to guarantee a new Programme to be effective in its contribution to the policy objectives, the following prerequisites have to be taken into account:

- Vision and strategy: a common understanding of what should be achieved by a new ITS Deployment Programme.
- Focus: a programme scope focused on road transport users.
- Structure: an effective and efficient Programme Management Structure.
- Effective Programme monitoring and evaluation.
- Ability and priority to release the required financial means.

These elements will be elaborated on in the next paragraphs.

#### *A common vision and strategy*

The notion of a need for a European vision and strategy is very much in line with the findings of the mid-term evaluation of the ITS deployment programme. A High Level Strategy Group could help shaping the common vision and strategy of a new programme and could guarantee the right strategic direction of the Programme. Such a High Level Group would also help getting the priority of top politicians on ITS deployment and maintaining ITS deployment on the political agenda.

#### *A focused Programme on road transport*

It is recommended that a new Programme scope is primarily aimed at European road transport users. This does not imply ITS deployment only on the TERN network, but also on roads of European importance that are not part of the TERN network, but have an important function for European long distance road travellers (like certain E-road sections). It is also recommended that urban-interurban integration is included in a new Programme, but only limited to specific cases with a high degree of transferability.

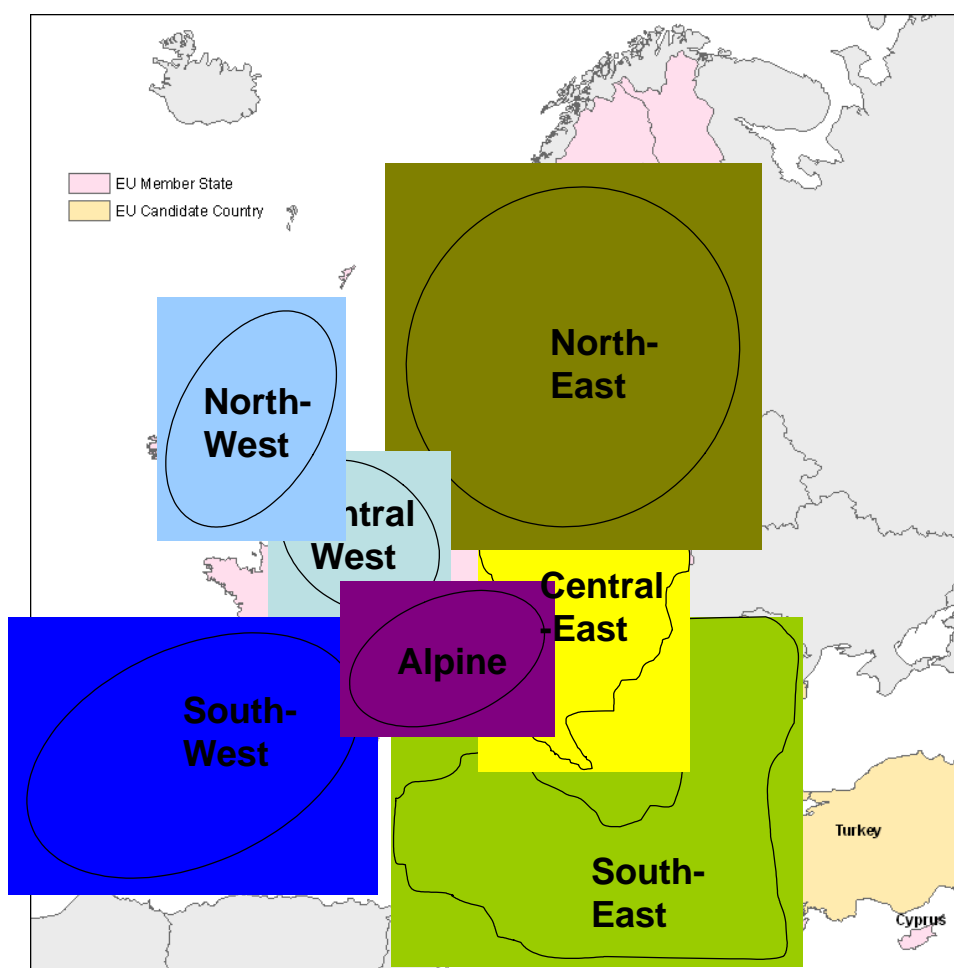
A common vision on multimodality can only be developed when there is clear evidence of the impact and added value of multimodal traveller information services. So far, this evidence is lacking. The willingness to pay for these services determines the creation of a sound business case for these kinds of services. It is up to the private sector to translate these business cases into effective business models. A new ITS Deployment Programme should facilitate data requirements from private sector in a non-discriminating way and stimulate the development of new business cases and models. The development of 'pilot demonstration projects' clearly demonstrating the impacts on multimodality as well as the development of a common vision on multimodality could be embedded in a New Programme by dealing with these actions in a separate expert group on multimodality.

Since it is likely that the private sector will develop personalised services, road administrations have to be proactive to this development and safeguard the public interest. These kinds of issues could be embedded in the Programme by creating a separate expert group on private sector participation and development of personalised traveller information services.

### *An effective Programme structure*

One of the strong points of the current TEMPO programme is the geographic spread of the programme into Euro-Regional Projects (ERPs). The ERPs provide the opportunity for close co-operation with neighbouring regions, which are often confronted by similar problems. A new Programme needs to be open for New Member States and Candidate Countries. The following rearrangement of regions is suggested, mainly based on specific geographic characteristics (e.g Alpine-crossing, Pyrenees crossing).

Figure 0.1 A possible reorganisation of the Euro-Regional structure



The ERP structure is not the most obvious structure for certain actions, some actions require a pan-ERP approach. For a new Programme two types of pan-ERP structures are recommended:

- Deployment Co-ordination Groups, which are intended to carry out ‘works’ on a pan-ERP level, for example the development of long distance traffic management plans;
- Horizontal Expert Groups, which are intended to carry out ‘studies’ on a pan-ERP level, such as:
  - ✓ an expert group on harmonisation and standardisation,
  - ✓ an expert group on evaluation
  - ✓ an expert group on marketing
  - ✓ an expert group on strategic issues

- ✓ an expert group on multimodality
- ✓ an expert group on the role of the private sector.

#### *Effective monitoring and evaluation*

In the current TEMPO Programme effective monitoring is lacking. Target levels are undefined, which makes it impossible to monitor progress. Adequate control mechanisms to undertake actions if deployment is lagging behind are missing. A new Programme must have clear target levels. In the annual reporting, progress on measurable output or deployment indicators have to be compared to the target levels.

Closely related to monitoring, but even more important, is the evaluation of impacts. What are the actual impacts of ITS deployment projects on safety, congestion and environment?

An evaluation expert group can support in applying a common evaluation methodology for the projects, exchange best practices and provide common templates. But in order to really embed a common evaluation methodology in the Programme, the project participants and actors involved must apply this methodology and report on the planned evaluation activities in annual workplans and report on the achieved impacts of the actions in the annual reports. That requires allocating sufficient budget to evaluation activities, like impact assessment studies within the project plans.

#### *Challenge to release the required financial means*

Obviously, a new ITS deployment Programme would require significant investments and co-funding budget. The total costs of a new European wide Programme for the period 2007-2013 is estimated to be in the range of €1.7 – 2.9 billion. The co-funding budget depends on the overall cost budgets and the funding principles in a new MIP. This co-funding contribution is estimated to be in the range of €280 – 500 million. The remainder (€1.4-2.4 billion) has to come from Member State funds.

For some Member States, this could be a challenge to release the financial means in order to realise the planned activities since it means a significant budget increase for some Member States.

#### *When these five prerequisites are met, the Programme can be very effective*

The impact assessment has shown that many ITS applications provide significant improvements in reducing congestion, increasing travel speed and reducing the number of accidents. Furthermore ITS helps to improve the effectiveness of policies. Some ITS applications provide more cost-effective benefits than others, and as the technology evolves, the choices facing those deploying ITS change. Economies of scale and widespread application of evolving technologies are expected to lower the costs of applications, while the benefits will even further increase given the autonomous growth of transport. As a consequence, the cost effectiveness of Intelligent Transport Systems and Services is expected to significantly improve in the coming years.