

# Inter-urban Traffic Management STREETWISE: a Euro-Regional ITS Project

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Background

## 1.1 Introduction

The European Commission's Directorate General for Energy and Transport (DG-TREN) has developed a multi annual indicative programme for 2001-2006 called the TEMPO programme, to build upon previous Euro Regional projects and establish funding for new initiatives. This paper describes a Euro Regional project – STREETWISE – that forms part of this programme with the aim to deliver a **Seamless TRavel Environment for Efficient Transport** in the **Western ISles of Europe**.

STREETWISE has a defined vision for its work:

*"To deliver to road users seamless, reliable and accessible travel information services of a consistent quality and common standard on the Trans European Transport Network.*

*This will be achieved through co-ordinated network management operations, data exchange and effective use of ITS technology, creating the environment that encourages the participation of both the public and private sectors in the provision of inter modal travel information."*

## 1.2 The Partners

The project brings together the roads authorities of:

- England – the Department for Transport and the Highways Agency;
- The Scottish Executive;
- The Welsh Assembly Government;
- Northern Ireland – Roads Service, Department for Regional Development; and
- The Republic of Ireland – the National Roads Authority.

This project reflects the needs of the above "Western Isles of Europe" within the European dimension by:

- becoming seamlessly linked in transport terms to mainland Europe;
- remaining competitive by reducing isolation from mainland markets, particularly for Ireland, Wales and Scotland; and

- benefiting from and at the same time supporting new ITS services being implemented across Europe. This will ensure these five countries are seen as part of a single integrated market for ITS both in urban and inter urban terms.

There is already a large degree of integration in the area in some fields and a number of projects (INSTANT, COURIER, and CENTRICO), which are already supported by European funds. STREETWISE focuses activity in areas where additional effort is required to add extra value to these existing projects and integrate their results. These targeted areas are:

- information services for travellers, transport operators and network managers;
- traffic management and control; and
- traffic information and control centres.

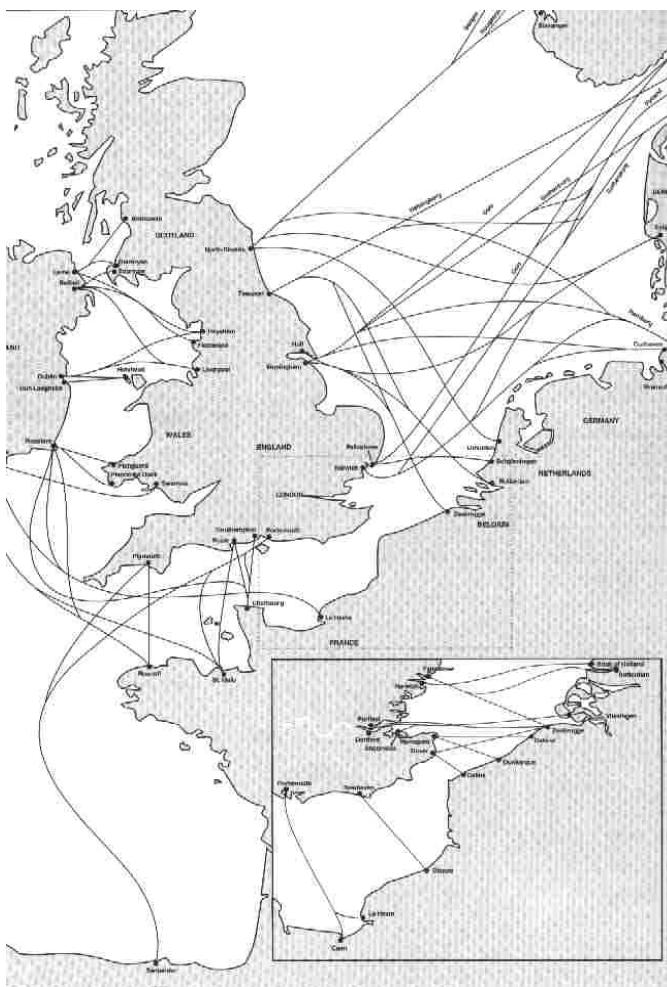
## 2 The Need for the Project

### 2.1 Travel in the United Kingdom and Republic of Ireland

The Western Isles of Europe are an integral part of the economy of the EU. However, their location and relative remoteness from mainland Europe requires special attention to the development of an efficient transport network.

63 million citizens live in these islands, which represents 17% of the EU population. The region also contributes 17% of the gross domestic product of the EU. A key consideration in transport terms is that the smaller countries all essentially rely on overland passage through England to gain access to mainland markets. The development of these links has been accelerated to meet increasing demand in line with the scale of the expanding EU. As an example the economy of the Republic of Ireland grew in the mid 1990's at 7.5 % per year.

Around 4 million trips are made from Ireland to England per year, of which 1 million are heavy good vehicles. Additionally there are around 10 million trips per year between England and mainland Europe, with sea crossing rates increasing in spite of the opening of the Channel Tunnel. Air movements, both passenger and freight, are also growing. The diagram below shows some of the key links for freight traffic.



**Figure 2.1 Key Ferry Links to Mainland Europe**

The public and private sectors have invested heavily in improved links to mainland Europe. Yet there are problems facing those travelling overland to reach these crossings. Key example problems and solutions in this corridor are:

- travellers and freight movements from Scotland and Ireland often are delayed at the motorways around Birmingham on their way to Channel ports or Eurotunnel. With better pre-trip information, their arrival at this bottleneck could be retimed or a different route chosen;
- when there are operational problems with the Channel Crossings, trucks are parked on motorways in the Kent Corridor. Many of these will have come from Scotland or Ireland and could have taken alternative ferry crossings with better pre trip information being provided;
- visitors from mainland Europe to Wales may be delayed during adverse weather at the Severn River Crossing – alternative routes can be chosen; and
- many trips to mainland Europe involve use of the M25 London Orbital Motorway, where there are two alternative routes (clockwise or anti-clockwise) that can be used in times of congestion.

## **2.2 Policy Objectives**

In 1996 the European Parliament and Council of the EU accepted guidelines for the development of the Trans European Transport Network (TEN-T). These guidelines' key objectives were to establish the TEN-T network by integrating land, sea and air infrastructure to:

- ensure mobility across internal frontiers;
- offer high quality infrastructure across all modes;
- allow optimal use of existing capacities; and
- encourage inter-modality.

The TEN-T includes infrastructure, management and navigation systems across all modes, including information and telecommunication systems. Potential projects include the development of traffic management and information systems (in particular infrastructure for collection and exchange of data, information services like RDS-TMC and interoperable systems). This policy has been echoed in the policies of each nation as:

- The Republic of Ireland published a Statement of Strategy, recognising the future role of ITS in development of transport and the economy;
- The DETR published an Integrated Transport White paper in 1998, which sets out strategic policies. In July 2000 a 10-year investment plan was published, showing an investment of 300 billion Euro in that period. Innovative development of information infrastructure will play a key role in this aim, especially through the Transport Direct Initiative offering a one stop shop for modal and route choice;
- In 1992 the Scottish Office published its strategy for deployment of ITS in its "Where Now?" document. The implementation of this strategy is vested in the Traffic Controller for Scotland;
- The Highways Agency in England recently announced 2 billion Euro of investment in technology to improve traffic management;

- The National Assembly for Wales has published its own strategy, “Driving Wales Forward”, which again emphasises the key role of Telematics; and
- “Moving Forward”, the Northern Ireland Policy Statement stresses the need to apply new technology and explore innovative traffic management solutions.

These documents all show the commitment of the various authorities to deliver ITS services nationally. The TEN-T Expert Group report on the deployment of ITS recognised that there is still a patchwork of fragmented services rather than a holistic market. There is therefore an overriding policy need to establish seamless services by integrating regional and national initiatives. The time is therefore now right for STREETWISE, reflecting:

- the above policies and commitment to ITS;
- the wider adoption and rollout of ITS services in Europe as a whole;
- devolved government in the UK;
- the Local Assembly in Northern Ireland and its links to the Republic of Ireland; and
- the maturing of other Euro – Regional projects, so that infrastructure is put in place with standard architectures and approaches to achieve harmonised services.

### **2.3 The Constituent Countries**

Although Scotland, Wales and Northern Ireland have only recently been devolved and had their own political assemblies established, the funding for transport and particularly ITS has been on a country by country basis for much longer. The Republic of Ireland is a separate entity from Northern Ireland and Great Britain but has increasing links to both.

Whilst common standards are in place for traditional infrastructure such as road signing and layout, and there is overall co-ordination between the five countries, different detailed architectures have been adopted for ITS. This simply reflects:

- the relative speed with which the smaller countries were able to implement national systems;
- the rapid evolution of ITS technology, meaning for example that the technology and architecture rightly adopted for the Scottish NADICS system in 1994 is not now optimal for harmonisation with the Highways Agency's TCC project; and
- the nature of traffic problems being different in each country, leading to different solutions. For example, bad weather is much more of a problem in Scotland than in England.

Hence there is a risk that a patchwork of unsynchronised ITS services will emerge. These could have limited interconnections because of their relative evolution and so may not provide a seamless service. This must be avoided through:

- development of a consistent minimum level of high quality data across the various Countries' networks, or at the very least an understanding of the constraints on data quality;

- an architecture and protocols that support exchange of operational information across both technical and institutional/ organisational borders, particularly the urban – interurban interface;
- agreements between organisations that support these technical solutions;
- use of new infrastructure and ITS services to disseminate information; and
- promoting the five countries as a part of a single Europe wide market for ITS services, where high quality information is available from consistent sources and where handover at boundaries (country/ urban interurban) is seamless for the user.

### **3 The Republic of Ireland and STREETWISE**

The NRA are investigating the potential application of telematics in the areas of road safety and traffic management. The objective will be to make the best possible use of the existing road infrastructure.

The NRA, in partnership with Roads Service, is participating in the INSTANT Project. The project scoping study has been completed and a feasibility study is to be commenced. The corridor forms part of the TERN and provides vital access to other parts of Ireland. The system will be generic and capable of being extended to other significant transport corridors within Ireland.

The basis of the system will be the existing Traffic Information and Control Centres in Belfast and Dublin. It is anticipated that these centres will extend their existing services to include the continuous exchange of information with each other and, where appropriate, with other centres in Great Britain and mainland Europe.

They will also receive on-line and off-line information from bus operators, rail, ferry, airport and other relevant bodies. Information concerning traffic conditions will be gained from a variety of sources such as the existing systems in Dublin and Belfast. Development of these systems is an ongoing process and there may be opportunity to provide additional incident detection equipment and CCTV cameras at critical locations as enhancements of the system

A key element of the National Development Plan 2000 is to improve Ireland's physical infrastructure. This includes the development of five major inter-urban routes (Dublin to the Border, to Galway, to Cork, to Limerick and to Waterford) to motorway/dual carriageway standard.

Meeting Ireland's needs for improved transport systems cannot be just a question of providing more physical infrastructure. Demand management will be increasingly important as part of an integrated approach to meeting mobility needs, particularly in the large urban areas in an environmentally sustainable manner. An example of transport demand management measures is the decision to impose tolls on non-HGV traffic using the proposed Dublin Port Tunnel.

## **4 Summary of Activities in 2002**

### **4.1 The STREETWISE Vision**

The first year of the project was important in building the initial foundations for this vision. The project strategy for 2001 focussed upon:

- making best use of existing work and investment, both from other Euro Regional projects and other national initiatives;
- ensuring that the needs of users were correctly identified and plans for meeting them developed; and
- working closely within the MIP (TEMPO programme) with other projects to learn from them and also disseminate our results.

In 2002, the second operational year for STREETWISE, the focus will continue to be driven by the shared vision of the participants. However, the lessons learned, the experience gained and the growing confidence of the project, gained through sound management and excellent internal cooperation, bodes well for the future.

### **4.2 Planning the Future**

There are five key areas of joint work for development of seamless services that will be carried out by all the partners, forming common tasks throughout the project. These are:

- user needs for monitoring traffic conditions to a consistent level across the network, both in terms of traffic flows and also other indicators, particularly journey time;
- user needs for the exchange of this traffic data between centres, both electronically and organisationally;
- the exchange of high quality traffic management information across borders and in addition promote information for service providers to encourage and promote pan-European services;
- handling incidents that affect cross border operations; and
- our evaluation horizontal work.

### **4.3 STREETWISE 'Golden rules'**

In order to provide a common agreed understanding of the basic guiding principles governing the implementation work within STREETWISE, a number of 'golden rules' have been endorsed by the partners. These are:

- Optimising existing procedures alongside stakeholders works better than wholesale change;
- Monitoring should be driven by the data required to meet users' needs not arbitrary standards;
- Knowing and achieving the Quality of Data is fundamental to success – timely, accurate, relevant data is a prerequisite for pan European services;

- We must make information simple to understand by users;
- Meeting the highest data need generally helps all users;
- Maximum use must be made of adding value from data we already collect but don't distribute widely;
- If there is an informal local agreement that works, don't formalise it until technology demands change;
- Don't rely on payment for services but partner with the private sector when its beneficial;
- Journey time has a "shelf life" ;
- Long journeys and Ferries are most important to Pan European travel in our area;
- Past network performance can help predictions; and
- Freight users have specific needs and we should address them specifically.

To support pan-European development, STREETWISE will continue to participate in:

- Data exchange issues;
- Location coding aspects;
- Data quality issues;
- Potential use of predictive and historical data;
- Related development monitoring;
- Freight industry user needs;
- Long distance corridor support and liaison;
- Incident response consistency;
- Optimising safety and other benefits;
- Evaluation;
- Internal communications relating to new developments; and
- External communications relating to STREETWISE and Euro-Regional projects and in support of EC outreach initiatives

STREETWISE continues to lead the evaluation development for the Euro-Regional projects and to build links with other authorities and projects.