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Monday 26th June 2006	
14.30	**Opening Session - What Framework for Improving European Citizen Mobility and Increasing Road Safety?**
	Author: Graeme Scott
1	*EU Strategy Towards Sustainable Mobility: Achievements, White Book Revision and Objectives*
	Zoltan Kazatsay, Deputy Director DG TREN

Zoltan presented background to the revised EC White Paper on Transport, highlighting the key objectives from the original 2001 document.

Rate of change in modal split little change to 2020
Number of casualties from road accidents – down
Increase pollution from road transport and CO2 emissions
Increase oil prices

In general:
- Enlargement – EU now has continental dimension
- Transport industry has changed, seen consolidation and globalisation – now large scale worldwide logistics.
- Threat from terrorism has impacted on transport
- Economic growth weaker than expected
- With rises in CO_2, , global warming and oil prices – situation now is challenging more than ever

The overall objective of the EC's transport policy is still valid, with the key considerations of 'sustainability and environmental'

From the EC perspective, how is policy translated into measures?

1. **Mobility** across all modes, and a combination of investment in new infrastructure (particularly TENs) and maximising use of existing infrastructure.
2. **Protection**, through a combination of road safety, security and passenger rights
3. **Innovation**, which will improve the optimal use of all modes – 'comodality' – coupled with energy efficiency, and the application of the 'user pays' principle. An objective is to bring European road transport systems to the market.
4. **International Dimension** – as transport is inherently international, the EU will represent to ensure "speaking as a single voice"

These and other measures should ensure safe transport and networks and improve the impact on the environment, so that transport can continue to play its part in socio-economic cohesion throughout EU.

ITS – innovation will be at the heart of ITS. This includes services that can be delivered that assist in delivering policy objectives. Infrastructure will still be built, but ITS will be used in tandem to assist in maximising use of such infrastructure. In parallel, the policy of comodality will ensure maximising the return from each mode, resulting in a more balanced network

In his view, some key ITS initiatives include the DATEX2 protocols, development of information services (including personal navigation) and the need for location based services,

driven by Galileo.

From an EC perspective, continue the partnerships with the member states to take forward the measures through EasyWay.

2	*ITS as an Essential Part of Transport Policy*
	Lionel Bichot, Deputy Director of Road Safety and Traffic Management, DSCR, MET, France (Chair, SERTI)

Lionel commenced with an overview of the period 1998 to 2010:

- European road networks face 45% increase in light vehicles, 50% increase in HGV's
- Negative impact on economy and EU citizens safety and mobility
- Estimated that by 2010 external costs will increase by 47%, reaching €80bn, 1% of EU GDP
- Such a high level increase will impact on the quality of living in urban areas

From the French perspective, pan-European traffic is significant – to Spain, to Northern European cities, and Cross Channel traffic – all experience large increases in volumes. Whilst the construction of the French road network is almost complete, levels of safety and congestion are unacceptable.

France has invested in the ERP's, with a focus on road safety and network optimisation. Examples of measures include:

- Cross Border traffic management - avoid blocking main motorways by stacking HGV's at appropriate points – 5,000 HGV's can be stacked in less than 30 mins;
- Speed Control on key corridors – increase traffic volumes and reduce accidents
- Travel time systems deployed – majority of users adapt their journey, and congestion reduced

All such services have been made possible due to investment in monitoring and data exchange investments, and demonstrate the important impact of ITS on:

- road safety
- congestion
- the environment and economy as a whole

In summary, the European dimension, introduced by the ERP's, has been essential. Road safety cannot be dealt with in 6 years, but needs permanent attention. Mobility is an increasing demand, and it is imperative that we seek to limit impact. The continuity of networks and interoperability are key success factors

The high level objectives should be 'towards 0 casualties, 0 congestion, 0 stress"

<u>Pietroantiono Isola, General Director for Planning and European Programme, Minstero delle Infrastrutture e dei Trasporti, Italy</u>
Pietroantiono stated the fact that "road is main mode of transportation in Europe, and we can't avoid this".

In Italy, the architecture for ITS has been improved through the ARTIST project. From a holistic perspective, any ITS project in Italy follows this architecture, ensuring the best possible solution is achieved.

The Ministry works with the big local authorities – regions and larger cities – to ensure a good application of ITS projects addressing the urban/interurban aspects, and cooperation between public and private entities. In addition, DG Regio are funding 5 ITS initiatives in eligible regions in the south of the country.

What is Italy expecting in future years?

- Continuing role for ERP's, with national states and EC cooperating
- EasyWay proposal is an acceptable way forward
- A good focus on CEEC, particularly the Southern States, and notably Greece
- Wider dissemination of results and best practice

Federico Fernandez Alonso, Subdirector de Movilidad, La Direccion General de Trafico (DGT)

Federico presented an overview of Spanish ITS initiatives, with emphasis on achievements made possible through cooperation with the EC and other member states. The 50% support for international collaboration is important from a financial perspective.

DGT has developed on the road network (as of December 2005):
1100 CCTV
900 VMS,
4,500 SOS emergency roadside telephones
125 radar sites for monitoring and controlling speeds; which was implemented in 6 months
All information from the radar sites is transmitted through fibre, and DGT see this as the key for increased ITS deployment

Recognising that Spain has had a good beginning what next?

Firstly, what is role of ITS? For the traffic authorities of each country – ITS can cut road deaths, cut traffic times, and Improve transport logistics

Should ITS be considered as complement or independent of infrastructure? If ITS is viewed as something independent, it will be difficult to achieve the policy objectives.

Finally, there is a need to ensure continuity, starting 1st January 2007 with EasyWay.

16.30	**Plenary Session 2 – ERP Achievements and Vision The Need for a European Approach**
	Author: Graeme Scott

1	*Success Stories in TIS*
	Nicholas Schwab (ASF)

Nicholas presented an overview of the work of the TIS Expert Group, and the deliverable produced by the Group - “Success Stories in TIS”.

The Group has 3 main objectives:
- cross fertilisation and best practices
- analysis of existing services deployment – identification of emerging services
- discussion of priority actions for the future

“Success Stories in TIS” provides a list of existing and emerging services with overall assessment, deployment maps and some noteworthy evaluation studies. In perspectives for the future, institutional aspects, quality of information, and future services are considered.

2	*DATEX 2 – Evolving DATEX: A European Tool for Data Exchange*
	Alain Reme (MET)

Alain presented an overview of the DATEX2 developments, and how this has evolved from the original DATEX project.

DATEX has been used throughout Europe, and whilst being a valuable operational tool, due to being based on old standards and not suited for service providers, it was recognised that there was a need for change – DATEX2.

Key objectives of the DATEX2 project were to reduce the complexity of DATEX, liberate from the requirement for EDIFACT message based exchanges, evolve the DATEX pre standards, introduce new data objects reflecting user needs, and harnessing technology changes facilitate the widespread exchange of travel information

Starting in 2004, the DATEX2 study put the framework in place for the new platform independent model, together with guidelines for a low cost profile and migration between the two protocols.

Since, there has been an extensive pilot implementation, where prototypes for both the regular profile (by Serti, with a web service over http using soap) and the low cost profile (by Centrico, via http using get method). This demonstrates that both work in an operational environment, and ensures interoperability between the two profiles.

Documents will be available by the end of 2006 (at www.datex.eu.org), with deployment thereafter.

In summary, DATEX2 is a robust and reliable data exchange mechanism, and following the completion of the demonstration, the CEN standardisation process will commence.

3	*Traffic Management Without Borders*
	Henk Jan de Haan (RWS)

Henk Jan presented a summary of the aims and work to date of the newly created Traffic Management Expert Group,

After the ERP's recognised the need for a TM EG, Terms of Reference for the Group were defined. The Group's focus is on safety, mobility and the environment, using tools such as strategies, tactical measures and control of the urban/interurban interface.

A key issue is Cross Border TM:

- Traffic does not stop at borders, but road administrations do
- Immediate actions are necessary to respond effectively to events, weather conditions, incidents, congestion
- Can be issues between member states borders v administrative borders – not always identical
- Recognise the different approaches to cross border management
    - Rerouting corridors (CBM)
    - General TMPs
    - Temporary TMPs
    - LDC

Henk Jan outlined some cross border achievements. Firstly, there have been many concrete results, with numerous cross border agreements established, addressing the problems and issues. Secondly, the impact of these agreements has resulted in improvements in conditions for drivers, there is daily contact between neighbouring traffic managers with the ensuing increased awareness of international traffic.

A major initiative in recent years has been the LDC project, where outputs have included:

- Exchange of road works information between partners;
- Coordinated strategy management (CSM) pilots with Germany, Austria and Switzerland; and
- Attention to growing freight traffic (freight traffic by road will increase by 45% by 2020).

The future work of the Group will focus on TM issues defined for 3 main areas

- developing a consensus at the political and organisational levels for implementing TMPs
- harmonisation and common understanding of traffic management concepts and user information
- integration of freight traffic and transport needs

For each of these areas, there will be challenges, solutions, demonstration projects and recommendations for future

To end, Henk Jan set out the Vision for the Future:

- more TMPs and rerouting plans foreseen and improvements and extensions to current ones
- Connect TMPS and CBMs via chain approach like the CSM initiative for LD approach

- Natural development of harmonised TMPs
- Cross fertilisation of best practices
- Focus on freight/long distance traffic

4	*Harmonisation of VMS display: MARE NOSTRUM, 2003:2006*
	Alberto Arbaiza (DGT)

Alberto started with an overview of the harmonisation process in respect of road signs, ranging from the Vienna Convention on Road Signs and Signals in 1968, through the work on research projects such as COST30, VAMPS and TROPIC, to the CEDR FIVE initiative, ongoing work of the UNECE and the more recent activities of the MARE NOSTRUM project,

The MARE NOSTRUM group have met frequently over recent years to progress towards a harmonised approach for the display of pictograms and messages on VMS across Europe, which is recognised as having a key benefit to users of the TERN.

The group has compared approaches from a range of countries, which is now presented in a book launched at the conference. Test work on new pictograms has included empirical approaches, including comprehension, lab and field tests, to better gauge and understand the perception of road users to such messages.

Future work will focus on:

- Optimisation of results relating to alphanumeric
- Apply first to congestion, then focus on surface risks, capacity, itinerary
- Use of double pictogram on full matrix type VMS
- Coordinating and harmonising current practice
- All potentially building towards a European (M)VMS Operator handbook

5	*Monitoring – ERP Achievements and Vision, the Need for a European Approach*
	Risto Kulmala (VTT)

Risto presented the work of the Monitoring Expert Group, whose focus has been on:

- Sharing of best practice and sometimes bad practice
- Exchange of information on plans and achievements
- Discuss new technologies

Throughout the MIP period, there have been significant achievements:

- Deployment of monitoring infra on TERN during MIP 2001 – 2006 has been substantive - real time traffic status monitoring, incident detection, traffic monitoring, situation verification and weather monitoring
- Emphasis is moving - from fixed to mobile stations, from authorities undertaking own monitoring to purchasing monitoring information, from dedicated to multipurpose monitoring systems, and from using data from one source to fusing data from multiple sources
- New technology solutions emerge, therefore the most cost efficient solutions will utilise different technologies

Risto introduced the deliverable of the MEG launched at the Conference (available from www.viking.ten-t.com). The document is underpinned by the message that 'data quality is

essential'

The document details:

- Data Quality Approach
- Data Quality Needs Assessment
- Quality – factors such as coverage, volume and consistency
- Monitoring functions, including real time traffic status reporting, historic monitoring, AID, travel time and weather monitoring

For each of these, the Group has prepared data quality descriptions, which cover:

- quality needs assessment
- technologies available
- best practices in technology applications (mon sites, specifications, maintenance, data applications, access to data, indicative costs)

In conclusion, during this MIP period:

- monitoring has been the cornerstone of ITS services
- provides main service content
- user benefits only arise when quality of services is high enough
- existence of high quality and consistent monitoring information is essential
- cost effective deployment

For MIP2, the Group's recommendations are:

- Sharing info and coordinating monitoring deployments and studies
- Monitoring best practice workshops
- European Monitoring Deployment Plan
- National Monitoring Deployment Plan
- Cost efficiency studies
- Technical assessment studies
- Development of innovative monitoring solutions
- Actual deployments

17.50	Main Challenges for 2007 – 2013: How To Make ITS Count In Europe
	Author: Graeme Scott
	Speaker: Paul Verhoef, Head of Unit Galileo & ITS, EC DG TREN

Paul closed the afternoon sessions with a summary of the main challenges facing DG TREN between 2007 and 2013, and ensuring ITS plays a key part in the solutions.

He started by summarising the successes over the 2001 – 2006 period:

- Cross Border traffic management
- Multilingual and real time information services
- Harmonisation of VMS displays
- Network monitoring
- DATEX

Posing the question "is there more to do?", the issues include

- Congestion – still increasing over the last 10 years
- accidents – too many road deaths and injuries
- lack of accessibility
- more pollution than is desirable
- patchy service levels across TERN

The review of the Commission's White Paper, like all reviews, makes adjustments for the future – it takes account of a more extensive Europe, looks to innovation, and addresses the need for changes in environmental commitments and energy consumption.

The review recognises that one of the most promising priority areas for decongesting European corridors is through the application of ITS.

With this in mind, the EC will, in 2008, launch a major programme to roll out intelligent systems in road transport. In the interim, planning must continue for ITS deployment in member states in the MIP2 period

What elements are in the frame of consideration?

- In Paul's own view, **Easyway** is a solid proposal which should be taken forward
- A concentration on **European added value** – with financial restrictions at both EU and member state levels, there is the need to maximise use of available resources for gaining greatest European value
- Expect increasing use of **"charging for use of infrastructure"** – smart charging

Paul noted that transport didn't secure budget as hoped – current repositioning, and although ITS will find its way, how this is reflected in financial terms remains to be seen.

The potential need now is to:

- study potential Europe wide winning systems and services
- Deploy Europe-wide proven systems
- Deploy on regional basis systems and services from the European toolbox

This will involve cooperation between the EC and member states, with funding from both MIP and non-MIP to be considered. Paul cited some examples:

- cross Europe studies aimed to lead to later deployment (TMPs, traffic and travel information, development of an “e-warehouse”
- cross Europe deployment of tools of European scale (DATEX, data gathering tools)
- local & regional ITS deployment (filling in gaps in network of TCCs, deploying VMS, EFC/tolling Systems).

Paul ended with brief comments on ‘what’s next?’

- TEN-FAC brainstorming on next MIP/non-MIP
- Autumn – stakeholders’ forum, with all interests represented
- Spring 2007: Decision on MIP 2007-2013

Tuesday 27th June 2006	
9.00	**Parallel session A1 - Achievements and stakes in Traffic Management**
	Author: Paul Dewey
	Chairpersons:
1	*Winter problems and traffic management in an international corridor*
	Miguel Angel Rodriguez Jara

The Portugal- Spain-Basque Country France corridor transverses an area prone to low temperatures and intense snow falls. During heavy snowfall serious traffic problems can develop as traffic flows from national roads highways and from local to regional roads. Adequate measures should be taken in order to assist road managers to solve problems efficiently. The Traffic Management Centre in Valladolid receives information on Adverse Weather conditions. Once the Centre has received information of frost/snow they verify the information with sensors on the road. Once confirmed staff are sent to the work areas that are affected, optimising their work hours as the frosts/snow evolve.

SERTI and ARTS have developed a methodology for generating a Traffic Management Plan (TMP) and it is divided in four phases:

- Capture of relevant information for the coverage area study and specification of plan objectives;
- All involving bodies (roads, traffic police) should specify their 'Decision Tables' are shared amongst the organisations;
- 'Snow Protocol' has been developed, validated and computerised; and
- Protocol evaluation is completed in two ways: when a simulation is being tested or when a real incident happens. All improvements are incorporated for the optimisation of the corresponding TMP.

The Control and Regulation measures will be:

- Basic Information Point and Coordination Centre 'Castilla y Leon' to ease exchange of information between all bodies involved and coordinate their actions;
- Control and ease access to emergency vehicles in the area affected;
- Formulate alerts and give notices for snowploughs to be used and adopt preventing measures before safety limits of the road are surpassed;
- Inform users of road conditions, restricted/blocked access as well as measures to take by means of VMS;
- Worsening conditions: prohibition of over taking HGV, reduction of speed limits;
- Even worse conditions: over taking cars are prohibited, drive on right lane. Trucks and articulated vehicles are prohibited;
- Inform through telephone and VMS about alternative routes so as to re-route the truck traffic.

The aim is to provide an acceptable level of service reducing the effects of weather problems. The TMP should identify and use the two existing phases differently in every weather problem: PREVENTIVE (alert phase) or CORRECTIVE (action phase) and specify the roles of involved bodies.

2	*Evaluation exercise for the Brussels-Beaune Traffic management plan*
	Michele Seris

Brussels – Beaune is a strategic motorway corridor as it accommodates long distance lorry traffic, seasonal car and caravan holiday traffic as well as local commuter traffic. Parts of the network experience very dense traffic flows and therefore a Traffic Management Plan has been developed which aims at minimising the impact of incidents by coordinating cross border traffic management and facilitating the provision of information to drivers prior to and during their journeys. A trial has been organised to consolidate the cooperation between partners and evaluate their organisation of communications and operational procedures. The main objectives of the exercise is aimed to:

- Assess and evaluate the transmission and exchange of information between coordinators;
- Test technical quality of the plan, in particular the circuits of communication ; and
- Teach the content of the plan to the various actors; and to contribute to the appropriation of this plan by each service.

The aim of the Traffic Management Plan is to coordinate three neighbouring countries (Belgium, Luxembourg, France) on a wide motorway network in an area that in case of an incident could have a deep impact on traffic conditions on the TERN. The already operational Brussels-Langres TMP has been evaluated and the Brussels-Beaune extension can provide further improvements to the existing plan in terms of better coordination and responsiveness. The results provided weak links of the TMP as well as methods to reinforce them, rules to follow, ways to train staff, technical modifications or means and tools available.

The evaluation exercise can be transferred to other areas of the TERN as the experiments carried out could provide guidelines to other organisations to develop TMPs. For example, the results showed some important organisational elements that have to be modified and avoided. This particular TMP has an international aspect that increases the risk of communication problems but otherwise it can be assimilated to a regular national project.

3	*Traffic Management in the Alpine area of CORVETTE – A Success*
	Martin Mullner

ASFINAG is the Austrian road operator and partner in CORVETTE and CONNECT. In 2004 one of the most modern traffic management systems (TMIS – Traffic Management and Information System) in Europe started its operation in the area of Tyrol, one of the most important transit routes in Europe on the Brenner corridor (Munich – Innsbruck – Verona). The implementation of modern sensor technologies, VMS, digital video system as well as the new TMIS enables AFINAG to control and manage traffic and provide travellers with real time traffic information services. Based on the operational traffic management systems the Traffic Management Plans on the Alpine corridors have been tested between Austria, Bavaria and Italy in 2005 and due to their success they will become operational by the end of 2006.

Using the CORVETTE experience ASFINAG is developing TMPs on the corridors to the new member states due to the fact that these corridors will become more important in the near future. Project evaluation is planned for 2006 but evaluation results from other countries have shown that traffic management systems in combination with traffic information services can lead to the following:

Increase	**Reduction**
Traffic safety	Traffic accidents up to 35%
Traffic flow capacity capability of up to 15%	Travel times and the associated external costs
	Disturbance in operating the roads through active information management
	Vehicle operating costs

All the achieved results are a great success of the Euro Regional projects, the member states and the European Commission. The strong cross border cooperation in the field of Traffic Management between the involved partners adds an important European value to the project.

4	*Traffic Management cooperation at the French-Spanish border: achievements and prospects*
	Mathieu Lisbonis & Rafael Conte

The border between France and Spain are experiencing an increasing cross-border transit (about +8% per year in average over the last 10 years) with a high proportion of HGV (32% in 2004). This high traffic rate requires specific traffic management actions but they are not easy to take because it involves a lot of different partners, public authorities and on the language barrier. ASF and ACESA motorway companies together with Catalan and French administrations SCT and CRICR have undertaken several joint projects to improve the operational coordination between partners on the French-Spanish border.

1. Common operational projects in the field between ASF and ACESA
    - Real time exchange of traffic management displays
    - Real time exchange of pictures from video surveillance cameras
    - On-line traffic information: WebTraffic
    - Cross border operational coordination
2. Common operational projects in the field between SCT, DSCR, DGT, DDE, Min. Fomento, MMEE, ASF and ACESA. Since 2003 a workgroup started to define both technological and procedural mechanisms to solve existing crossborder traffic management dysfunction, between Spanish and French organisations. This workgroup is composed by all organisations in both countries, public and private with competences in traffic management and information services. The Workgroup has identifies two groups of problems concerning cross border traffic coordination:

    - **Procedural**: many different organisations on both sides of the border with different competences and administrative procedures. For this reason a 'communication procedure' was decided and there is a distinction between 'communication for informative purposes' and 'demand of application of traffic management measures'.
    - **Technical**: different languages, and ways of sending/receiving information. The solution was an internet based tool with a bilingual form that can be filled with the action or information requirements. The tool allows the evaluation of the management of crisis situations in order to improve it.

Concluding, this work is concerned with the organisational aspects to manage the cross border workgroup, the agreements for defining the communications protocol between both countries and mainly the technical elements for the definition of the cross border Internet tool.

5	*Cross Border Management(CBM): The Netherlands – Lower Saxony*
	Hans-Joachim Aumund & Henk Jan de Haan

To Improve the traffic flow between the Northern part of The Netherlands and Niedersachsen and to initiate a better cooperation between neighbouring road operators a cross border management project has been started. This project is involved with the cooperation of different national organisations in roadworks management, traffic management and re-routing activities in case of incidents.
The limited capability to build new roads has enhanced the solution for intelligent and

organisational adaptations to maintain the traffic flowing. A workgroup of CENTRICO and VIKING partners started a cross border cooperation of neighbouring road operators and it covers four inter European highways in German. The goal is to develop traffic management measures for wide-range traffic routing and the exchange of transportation related information between the Netherlands and Germany especially for freight traffic.

The analysis was focused on capacity, available traffic management tools, accidents rates and congestions. Results of the analysis approve the high level of equipment with automatic monitoring applications in the Netherlands. Traffic information is collected in the traffic centres and then disseminated to service providers for radio broadcasting, the internet and other services. Several scenarios were developed and consist of alternative rerouting possibilities and corresponding text strategies for dynamic and static signposting. Mobile text cars and traffic information distribution via radio and RDS-TMC will be used to inform the road user on the re-routing option.

Communication between the two Traffic Management Centres as they are responsible for the collection, exchange and distribution of relevant traffic information and warnings. A CMB procedure is necessary when a major delay occurs as the time span from an incident to actual rerouting measures activation takes 1-2 hours. All partners need to decide and agree on whether a CBM is necessary. A three phase pilot is about to take place to strengthen the cooperation and develop a common understanding of the different acting operators:

- Phase 1: CBM recommendations will be given only via traffic information and will be added to the normal traffic information via radio, internet, RDS TMC and SMS.
- Phase 2: CBM procedures will be tested on simulated events. Test similar to former experiences
- Phase 3: CBM procedures will be tested and evaluated actively over a period of several months. Based on evaluation results the next steps in CBM will be defined.

In the Netherlands various CBM procedures have been defined and it has been possible to ease traffic flow and guide long distance traffic trouble-free. This has been made possible not only due to successful technical solutions but also due to improved personal contacts between the different operators. This case can lead to other best practice examples which promise high benefits with minor investments.

09.00	**Parallel session A2: Achievements and Future Stakes in Traffic Information Services**
	Author: Steven Revill
	Chairpersons: Nicholas Schwab (ASF) & Ana Luiz Jiminez (DGT)

1	*Towards Pan-European multimodal traveller Information Services: Experiences with connecting DELFI and EU-Spirit*
	Stefan Kropel, GVS (VIKING),

The project first looked at integrating the timetable and information systems between Denmark and Northern Germany. Further to this flight times and fares were integrated into the timetabling system. The programme is based on the automatic exchange interface for exchange of timetable data and can therefore provide complete information from door to door over the border between Denmark and Germany. The development of this work has moved onto the integration of EU Spirit with DELFI.

Delfi is the German-wide electronic timetable information system for public transport and has combined the internet timetable information systems of the German Lander with each other since 2004, therefore providing easily accessible online seamless travel information to travellers across German regional borders. EU Spirit follows a similar principle to DELFI as it connects existing timetable information across the VIKING area to include information from Denmark, Sweden and Germany.

The technology involved can operate under real conditions with a high quality and stability of service. User evaluations (2005) revealed benefits especially to cross border users from the German states nearby the Swedish and Danish borders. This integration has proved positive and provides encouragement for integration of such systems across regional and national boundaries.

2	*Own Language and en-route Traveller Information Systems*
	Linda O'Connor, Faber Maunsell and Graeme Scott IBI Group (STREETWISE)

Own Language Information System (OLIS)

A research project, commissioned by the Scottish Executive (SE0, found that in 73% of accidents involving foreign drivers the foreign drivers were found to be at fault, and that these drivers were more likely to be on the wrong side of the road.

As a follow up to this research the SE is pursuing the development of a system using automatic number plate recognition to recognise the origin of foreign license plates and display safety messages in the language of that country. The system is to be piloted in 2006 to test the technology and evaluate its effectiveness. It is considered that the system will prove cost effective in terms of accident savings.

Traveller Information Systems

The recent installation of traffic information kiosks has enabled drivers to receive timely information en route regarding route choice and departure times at strategic points on their journey. Targeted at freight drivers the kiosks were installed at four strategic points on the Scottish network including one on a ferry between Northern Ireland and Scotland.

The SE evaluation conducted during 2006 concluded that 94% of respondents believed that

the kiosks were a good idea while 50% of the respondents said they were more likely to stop at a service station if they knew it had a traffic information kiosk. The evaluation also recommended the advertising of kiosks to increase non-user awareness.

3	*Telematics-Controlled Parking for Trucks at Service Areas – First Experiences and Feedback*
	Guido Schuster (LSVRP), et al

Rising volumes of HGV traffic means that the capacity of service areas is often not sufficient. In response the German Land Rheinland Pfalz (GLRP) have developed a Telematics Controlled Parking (TCP) system at one service station on the A3. The solution arranges HGVs into newly produced parking lines based on departure times which are entered by drivers on arrival at the terminal barrier.

The study began in September 2005 and began by successfully calibrating the parking model to ensure efficient space use. The system is automatic and uses magnetic field sensors for auto-surveillance. The system has received positive driver feedback as they understand the system and are able to find a free parking space every night. The evaluation found that the net result was a 40% increase in the number of spaces on the parking area available.

The results are considered transferable to most service areas. The next step by the GLRP is to interlink service areas on the A3 motorway to produce a network wide guidance and information system for HGVs.

4	*Dynamic Management of Parking for Trucks*
	Jerome Ferre (SAPN)

The SAPN operates a 368km network between Paris and Normandy's coast. During peak times this route has high levels of freight traffic. The SAPN aim to provide a suitable service to freight and develop a sustainable share of the motorway between freight and private cars which includes tackling the issue of HGV parking.

HGV drivers generally stop at the same times resulting in saturation of HGV parking areas. Consequently HGVs park outwith designated bays including hard shoulders with obvious safety implications. During peak times not all parking areas are over capacity which indicates that providing HGV parking area information would disperse the HGVs over a wider area.

To address this concern SAPN will implement solutions including automatic monitoring of parking areas and the dissemination of this information through VMS and/or RDS-TMC. The development of such a system will reduce the risk of accidents, increase information provision to the freight community and help with the aim of making freight traffic sustainable freight.

5	*Traffic EuroService.com – platform: Easy Internet Access to Traffic and Travel Information from all over Europe*
	Bernhard Lux (ERIC)

TrafficEuroService.com provides traffic and travel information services all over Europe. The platform provides over 160 links to traffic and travel information (TTI) services on the internet in 29 European countries and includes more than 350 positions of publicly available live - traffic –camera positions.

The user may select a specific country, language, type of provider and information type. The service is available as text only or visualised maps. The main purpose of the service is to simplify the availability of TTI with the hope of mobile internet availability in the future. It is planned to extend the activity to 250 TTI links with over 400 traffic camera positions.

6	*Latest Traffic Information Services Development*
	Paul Mareek (Autoroutes Traffic)

Autoroutes Traffic has been involved for the last three years in providing multimedia traffic information services to its customers and final users. This year Autoroutes Traffic has been extending the traffic data coverage. By the end of 2006 the coverage will exceed 13000km and include Barcelona, Zaragossa, all Belgium networks, all Luxembourg motorway networks, Paris, Lyon and Toulouse.

Autoroutes Traffic will also be involved in developing new live traffic content through the deployment of cameras along the motorway networks. It is expected these additional cameras will reassure the client of the certainty of the information provided to coincide with the trend into real views for traffic information.

In collaboration with Association des Societes Francaises d'Autoroutes (ASFA), Autoroutes Traffic is involved in the "0 stress, 0 traffic jam, 0 accident" project which aims to develop a database where dynamic speed limits around road networks are stored.

11.15	**Parallel session A1 - Achievements and stakes in Traffic Management**
	Author: Paul Dewey
	Chairpersons:

1	*Optimising the existing infrastructure by controlling congestion and traffic flow on the very heavy trafficked motorway: the successful challenge of ASF*
	Nicolas Schwab

The A7 motorway from North to South of France is experiencing high traffic volumes resulting in serious congestion and an increasing accident rate. In 2004, ASF decided to test a traffic management technique in a Northbound 90km long section: the 'speed control system' that is based on the use of a specially written algorithm and a range of ITS technologies. The procedure, in brief, is as follows:

1. Proprietary algorithm: gives advance warnings on congestion (30-45 min) based on historical traffic data and loops;
2. An alarm is triggered in real time in the control centres; and
3. Road users are informed in real time through radio newsflashes, mandatory speed limit pictograms on overhead gantries and VMS.

Speed of individual cars can be identified through an ANPR and if the speed limit is exceeded a VMS illuminating showing the vehicle licence plate with a warning to slow down. Evaluation results proved to be satisfactory with gains in terms of volume and safety. The system is extended to the Southbound section and has also achieved a ban on overtaking for HGV in heavily trafficked sections.

2	*Active Traffic Management*
	Svenja Trettin

Drivers now face a number of new challenges including increasing traffic and congestion on the network and incidents which cause delay to road users. In October 2000 the Government introduced the Ten Year Plan for Transport that sets out targets for all the major transport providers and operators, including the Highways Agency. These targets are to reduce congestion, improve safety and improve information provided to drivers

A number of potential locations were assessed for the possible benefits that Active Traffic Management could bring to the area.
The M42 between junction 3A and 7 was chosen because of its strategic importance to the Midlands area in distributing local and national traffic, providing a link between the M40 and M6 motorways.
This route also serves the National Exhibition Centre (NEC) and Birmingham International Airport, as well as the business parks and busy residential areas also along this corridor.
This route is a particularly good place to trial Active Traffic Management because of local issues, such as:

- High level of traffic flow on both carriageways
- Higher than national average accident rates, particularly between junction 5 and 6
- The combination of local and strategic traffic using the motorway
- Congestion points where traffic joins and leaves the motorway
- The traffic problems associated with major events at the NEC, Birmingham International Airport and Birmingham International train station
- Future growth in the area

On the M42 a number of changes have been done between junction 3A-7. These include the

addition of:

- **Lightweight gantries**
- **Signals**
- **Digital enforcement technology**
- **Driver information signs**
- **Entry/exit signs**
- **Hard shoulder running**
- **Emergency refuge areas**
- **New emergency roadside telephones**
- **CCTV cameras**
- **Full motorway lighting**
- **Sensors**

The achievements and next stages are summarised in the following table:

2004	**2005**	**2006-2007**
New lighting	Advisory speed limits became mandatory	Implementation of 4 lane variable speed limit
Automatic queue detection system	500m MIDAS loops were fully commissioned	Hard shoulder running during busy peak periods or incidents
Electronic signs displaying advisory speed limits over lanes 1, 2 and 3.	All emergency refuge areas became available for public use	

3	*Implementation and Evaluation of a System of Traffic Management for the Alternative Pass of Trucks to the Vielha Tunnel (Lieida)*
	Nacho Sanchez

The objective of the project was the installation of a traffic management system for the alternative pass of trucks to the Vielha tunnel with the help of a **regulatory system** and a **transit management system**. The main characteristics of the regulatory system are:

- Rest areas for HGV either side of the tunnel
- Use of fixed signs before the rest areas
- Use of VMS that indicate whether the tunnel can be transversed
- Use of VMS about waiting times
- Ordering of vehicles inside the rest area
- Use of street lights to regulate exits from the rest area
- Close attention to the rest area maintenance and to the acceleration and deceleration lanes
- Use of a centralised control system that regulates traffic automatically

The transit management system consists of a control centre that controls the flow of HGV that approach each exit. The procedure for trucks passing the tunnel is:

- Vehicles are first detected with a laser system to identify the type of the vehicle (length, longitudinal section height, speed)
- A VMS indicates the truck that needs to deviate to the rest area
- A panel with a street light and a 'window' specifies the waiting time until the light turns green
- Number plates are read at the entrance and exit of the tunnel so the time to go through the tunnel is calculated

There are two waiting areas located 1km and 3km away from the North entrance. The control centre takes the decisions to apply lane blockages and releasing specific trucks.

4	*Ramp Metering – new experiences in NRW*
	Rene Usath

Higher volumes of traffic joining the motorway traffic can cause tailbacks, traffic disruptions and accidents at junctions. Ramp metering systems can guide the traffic to the federal motorway in a controlled way using light signal installations. In NRW there are 48 ramp metering systems installed and by the end of 2007 there will be 100 operational systems. Older pilot installations were evaluated with very positive effects:

- Reduction of congestion more than 50%
- Reduction of accident about 40%
- Increase in average speed for more than 10km/hr during peak hours

The maximum capacity in one cycle had been 720 vehicles/hr with one car per green. Currently, the green interval is extended to 3 seconds that gives access to two vehicles per cycle, increasing the capacity to 900 vehicles/hr. Pilots have shown that the system is more cost effective when it is running during peak hours continuously as a permanent switching on and off causes congestions on the motorway, decreases safety and reduces the system reliability.

5	*New methods of collective traffic control with the World Soccer Championship 2006 as an example*
	Alexander Pilz & Reiner Scharrer & Rene Usath

During the World Championship new technologies for collective traffic control were deployed in Germany. The examples presented were from the Federal States of Hessen, Northrhine-Westfalia and Bavaria.

Hessen

Two alternative route guidance systems handling traffic around Frankfurt. Visitors were guided with the least possible trouble to coloured parking areas of the football stadium.

Northrhine-Westfalia

38 dynamic re-routing systems with integrated congestion information have been installed allowing intelligent re-routing around Cologne. Dynamic re-routing was difficult to be implemented due to various constraints therefore football-related traffic was guided by static signs and the dynamic re-routing mainly covered long distance traffic, commuters and non World Cup related traffic.

Bavaria

ITS systems have been installed in order to facilitate traffic in Munich and Nuremberg. Motorists were guided to relevant parking lots around the stadiums or other destinations of the network. Common strategies have been defined between the Police, the Board of Building and Public Works and the cities of Munich and Nuremberg. The strategies encompass main and alternative routes and are stored in a control computer. In Munich there have been installed and implemented:

- 98 changeable direction signs
- 4 free text lines, 10 prism turnovers
- 37 junctions with net influence;
- More than 450 observation points in all types of roads
- 2 access points to guide traffic to the Munich stadium. Additional parking guidance systems were installed inside the stadium

The VMS systems also display various destinations. The investments for the infrastructure are sustainable as the traffic control systems can be used for network management on the highly loaded road stretches. Finally, these elements of re-routing will play a major role in the context of the future implementation of Long Distance Corridor strategies.

11:15	**Parallel session A2: achievements and future stakes in Information Services**
	Author: Ewan Hobbs
	Chairperson: Roberto Arditi, SINA
1	*WHIST (Walloon Highway Information System for Traffic):*
	Philippe Lemoine (CENTRICO)

Key Point – Central common traffic database allows effective integration of traffic management and traffic information services.

- Wallonia is situated in South Belgium.
- The region has an electronic Traffic management system which feeds into a Regional Control Centre (PEREX).
- Traffic data is in the form of electronic data (loop counters, weather stations etc.) and planned event data from local authorities.
- Data is collected from 900km of motorway and 500km of other roads and stored in a DATEX database
- Partners: Radio Broadcasters and Police.
- Data is disseminated via usual methods – Websites (http://routes.wallonia.be/traffiroutes), RDS TMC, VMS etc.

2	*Enhanced information services and road operations: results of six years of innovation and involvement in CENTRICO*
	Jerome Ferre (SAPN CENTRICO)

Key Point – Evaluation of achievements heavily focussed on end users (user surveys etc.) No tangible results were presented although in general initiatives were considered successful.

Over the past six years a number of initiative have been supported to improve information services:

- Traffic Forecasting
- Travel time information for long distance corridors (200km)
- Internet information services, pre trip.
- Interactive voice server
- RDS TMC
- Roadside information points
- Automatic warnings of alerts on VMS
- Specialised freight portal.

3	*Successful cooperation between 2 operators to provide seamless traffic information to end-users. ASF and ESCOTA*
	Nicolas Schwab &Philippe Coushak (SERTI)

Key Point – A comparison was carried out between travel time data from travel counters and

EFC tags. Results showed that the travel times were very similar and the systems compliment each other to provide reliable robust travel time data.

Project aimed at coordinating travel information cross border. Carried out on A8 near Marseille.

- Travel time data provided cross border, data from both ASF and ESCOTA fused and analysed on the ASF central server for dissemination back to ESCOTA and to the public.
- Work done to ensure compatibility and consistency of information of radio broadcast systems (107.7). 4 broadcasting areas were integrated to provide seamless travel information.
- Work underway to develop traffic simulation and modelling techniques, model will run scenarios to predict traffic characteristics 1-4 hours in the future.
- Exchange of operational systems carried out. Fibre optic data link allows CCTV and radio to be shared.

4	*HA Internet Radio (HAIR)*
	Russell Pinchen (CENTRICO)

Key Point – Surveys have shown that end users want **short snippets of location specific** travel information. This makes it hard to demonstrate high rating figures as only listing times over 15 minutes go into user statistics.

Objectives

- To provide up to date travel information to end users.
- Using audio rather than visual gives safety benefits.
- On demand information (no waiting for broadcast)
- Tailored content (location specific)

System Description

- HAIR uses the internet to broadcast travel information to internet enabled devices.
- Traffic link as professional broadcasters provide the information.
- If issues with achieving user ratings can be overcome then the information could be broadcast over airwaves in the future.

14.30	**Parallel session B1 - Achievements and stakes in Data Processing and Exchange**
	Author: Jacqueline Barr
	Chairpersons: Alain Rème (MET)

1	*Parallel session B1: achievements and future stakes in Data Processing and Exchange*
	Kin Fai Chan - Rijkswaterstaat Transport Research Centre (CENTRICO)

Automatic Detection of Missing and Corrupt Data
Kin Fai Chan - *Rijkswaterstaat Transport Research Centre (CENTRICO)*

The project is called Da Vinci - **Da**ta **V**alidation & **In**spection for **C**orporate **I**nformation Chain. The main goal of the project is to develop a cost effective method for automatically detecting and resolving software and configuration errors from collected traffic data. There are three main steps to achieve this:

1. Detection of the missing and corrupt data
2. Deleting or disqualifying it
3. Re-estimating the missing or deleted data (if necessary)

A variety of validation models are used to detect false alarms. At present these models are being integrated and it is expected that that Da Vinci will be incorporated into a real operational environment.

2	*Seamless traffic information in Rhineland-Palatinate on motorways and conurbation main roads*
	Heribert Rückewold (CENTRICO)

The Internet service, www.lsv.rlp.de/verkehrslage, presents traffic information on a map-based interface. Sections of road are colour coded according to LOS and icons indicate roadworks and current incidents. The presented traffic situation is calculated by a simulation, microscopic cellular automation, and is based on real traffic data. This simulation is able to reproduce the traffic situation based on all available data and also on parts of the network where there are no detection units. TMC traffic messages are also automatically generated and broadcast.

The site also offers users multimodal information, i.e. train timetables and park and ride information. It is expected the service will completely cover the network possibly using private sector FVD and integrating neighbouring regions to the site, this integration would use the common standard DATEX 2 LCP. Investigation into the areas of disseminating information via mobile phones and incorporating a weather element into the system are also planned.

3	*The functionalities of CESAR II , the new Traffic Control and Information Centre of AREA Motorways*
	Eric Pillet - AREA (SERTI)

The new Traffic Control Centre is situated in the Alps region where there are around 100,000 events per year and AREA motorways operates 400 km of roads. The new centre, named CESAR II, consolidates 15 years of experience, has been designed to:

- Integrate features
- Improve ergonomics
- Improve security
- Integrate new technologies

It uses a new feature called EMA (Event Management Assistant). This automatically suggests a series of actions to the CESAR operator to manage an incident. It amongst other functions can

- proposes suitable VMS messages,
- can automatically generate a fax or email; and
- select appropriate CCTV images for the operator.

This is a rules based system where the operator always has ultimate control and can choose not to follow the EMA proposals.

A dedicated Intranet, CII, has been set up to improve communication and an operational DATEX link has been incorporated to exchange information with neighbouring control centres.

Benefits of the system include:

- reduced response times,
- better respect for procedures; and
- better use of VMS.

4	*Italian Motorway Companies Needs For Data Exchange: Historical Background, Evolution And Perspectives*
	Fabrizio Paoletti - Autostrade (CORVETTE

The Italian network is covered by many operators and there is a need for consistent automatic information exchange. Presently almost all motorway TCCs in Italy are connected to a DATEX system.

VMS orientated data exchange is the focus of this project. There is a lack of standardisation in VMS management systems and policies throughout Italy, the aim is to manage VMS effectively and consistently throughout the network. Work has been undertaken to produce a common subset of phrases and attributes for agreed VMS messages. Parallel to this the Italian partners in Mare Nostrum have also been working towards harmonisation of VMS usage and messages.

A successful VMS data exchange trial took place in 2003 between two operators and the aim for the future is to roll this out to a national level.

5	*Introduction to the New Behaviour Indicators In The Metropolitan Area Of Barcelona – Value added from road data*
	Nacho Sanchez - LISITT (SERTI)

The challenge of this project is to obtain a model for handling the large amount of traffic data that allows the traffic managers to understand and respond quickly.

In this project historical data from the Servei Catalá de Tránsit was used, covering a ring road in the metropolitan area of Barcelona that is traditionally used as a departure and arrival point in the city. Two main groups of traffic each with their own characteristics were identified:

1. every day situation – the data group for normal analysis; and
2. special operations – holiday periods where mass mobility is experiences.

Analysis of both groups of data has highlighted weekly, monthly and holiday trends. This has helped produce a congestion database and answer the following questions:

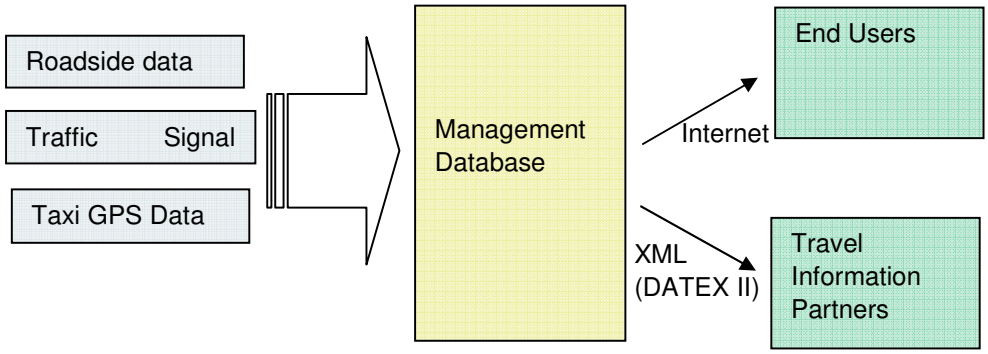
- Where is the congestion? – Which specific routes?
- When does it occur?
- What is the extent and impact of it?

This project has proved a valuable tool in prediction and planning as well as helping operators identify abnormal situations on a day-to-day basis.

14:30	**B2: Achievements and future stakes in monitoring**
	Author: Ewan Hobbs
	Chair: Risto Kulmala, VTT
1	*FCD - INFO*
	Juha Laakso (VIKING)

Key Point – 400 taxis in the city of Tampere are equipped with GPS devices which report the taxi position using GPRS allowing the collection of real time, high accuracy urban traffic information.

- The AINO programme was initiated to develop the collection, management and utilisation of real time traffic information.
- Consortium comprising: Infotripla Ltd, Tampere area local cab Ltd. And Mobisoft Ltd.



- The trial will finish in the summer of 2006 but due to its success the service will remain.

2	*Video System Integration*
	Enrico Ferrante (CORVETTE)

Key Point – 30 Million Euros being spent on 13 year programme to install traffic management system on Venice- Trieste corridor. Primarily CCTV incident detection as it is believed that operators need visual confirmation of automatic system alerts.

- A digital CCTV incident detection system is being installed. 30 cameras monitor the motorway and automatically detect incidents. Video from the camera is transmitted back to the control centre.
- Project runs from 2001 to 2014
- Co - funded by DG-TREN
- Other sensors monitor traffic flow and environmental conditions.

The project was not sufficiently developed to provide any evaluation.

3	*Generalised travel information system on the AREA motorways*

	Benoit Vuadelle (SERTI)

Key Point – Programme to collect travel data and provide Journey times to end users. There are no alternative routes for much of the network and it was stated that the JT provision is for driver information and comfort only.

Travel information collected using standard techniques:

- Traffic counting stations (magnetic loops)
- Traffic events data from traffic control management system (CESAR)
- Toll transaction

Algorithms work on data and produce travel time estimate for links.

Journey time information is delivered to end users by:

- VMS on the network and at its entries
- Motorway information radio station 107.7
- Internet.

4	*Weigh-In-Motion. How a limited investment in Weight Monitoring can provide a road administration with information vital for addressing a significant problem.*
	Arne Lindeberg (VIKING)

Key Point – Following installation of weight sensors it was discovered that 87% of vehicles were overloaded. This equates to over **35 Million Euro increase per annum** in road maintenance.

At strategic points weighing transducers were mounted on bridges. These were not used for enforcement only for monitoring. This survey highlighted the extent of the overloading problem and lead to the development of a business case to reduce overloading.
Plans to reduce overloading include:

- Eliminate incentives for overloading
- Promote transport quality (e.g. extended use of vehicle mounted scales)
- Compliance with regulations and enforcement.

14:30	**Parallel Session B3: Evaluation**
	Author: Maria Politou
	Chairpersons:

1	*Overview of ITS Evaluation in the TEMPO Programme: Role of the EEG, Digest of Results and Cost and Benefits analysis tool*
	Steve Tarry & Dieter Sage

The Evaluation Expert Group (EEG) is a STREETWISE initiative and includes representatives from all Euro Regional projects in order to achieve some specific objectives within the TEMPO programme. The main objectives aim to:

- Demonstrate the benefits of individual applications and highlight the degree at which these applications were successful;
- Disseminate, promote and compare results;
- Demonstrate the benefits of Euro Regional projects; and
- Demonstrate the importance of information exchange between projects.

The basic approach of the EEG is to produce guidance documentation as well as establishing and monitoring the TEMPO Work Plan for evaluation. The aim is to have 100 projects in the standard TEMPO format. This standard format for all documents is necessary in order to:

- Help similar work;
- Produce and present consistent achievements;
- Have reports available to all partners through the website;
- Include contact information for all projects

Evaluation is a very important topic as evidence of benefits is required from policy makers in order to justify further ITS investment. Evaluation is present through all Domains and areas and is must be clear that is an ongoing procedure.

The EEG has produced a template for reporting of project outcomes. That document is complete as it is the only one describing the specific ITS deployment, includes all the necessary assets, describes all the methods and assumptions followed as it targets all policy makers and all stakeholders involved. Since evaluations are available for all ER projects that can potentially raise language problems. The VIKING Expert Group has developed a toolbox as most of the national evaluation reports of VIKING are written in the national languages. The toolbox consists of three parts:

1. TEMPO Framework
2. VIKING Guidelines
3. TEMPO Reporting Guidelines.

The UK Department for Transport, aiming to evaluate costs and benefits, has produced a web based resource providing guidance on investment in ITS. The guidance targets the needs of policy makers, practitioners and technologists and addresses a broad spectrum of applications and policy objectives such as improvements to the environment, safety, efficiency, accessibility and integration of ITS investments.

Across the TEMPO programme projects are evaluating the costs and benefits of a wide area that ITS cover. About 45 projects will be reporting evaluation results over the years to come all of them following the TEMPO guidelines. The results will be accessible through the TEMPO website. Finally, a Handbook of Best Practice in Evaluation is to be created and it will include appraisal of possible options, evaluation of chosen solution, managing the overall process as well as decisions to be taken.

More information and concrete results will be presented at the EEG Workshop in November.

2 *Methods for pre-assessment of effects of Traffic Management*

Charlotte Vithen

The need for an efficient use of the existing network has allowed the implementation of several types of ITS systems. In Denmark various socio-economic calculations have been carried out but a structured cost – benefit analysis was yet to be done.
For this reason, a study had been carried out in order to propose a methodology that will enhance road authorities to carry out cost-benefit analysis of ITS investments. The analysis was based on the previous guidelines and framework for evaluating socio-economic impacts of traditional transport projects.

In order to measure the costs and benefits of an ITS deployment a comparison of situations where the project is not carried out ('do nothing' scenario). Key data was collected in order to evaluate the ITS investment. The evaluation includes a description of whether the ITS application is an appropriate tool, the types of problems it can solve, key data concerning effectiveness, international experiences etc. Finally, an overview of potential consequences is also included.

The study focuses on selected ITS solutions and various effects could be associated to various costs and savings.

Costs	**Effects**
Internal	User effects
Cost Savings	External effects
Environmental	Other effects

Apart from typically measuring the effects of ITS measures on flows, it is possible to quantify how road users valuate them by stating what price they are willing to pay for the services/information they are offered using stated preference or revealed preference studies. Once the main results of the socio-economic evaluation have been obtained it is recommended to produce 1 or 2 pages using tables to present input data and results as well as a conclusion with a short reading of the main results.

This methodology can be applied for international ITS investments but has also brought up serious flaws in knowledge and effectiveness of ITS as well as great uncertainty regarding specific data and information in order to carry out ITS socioeconomic evaluations. List of proposed actions:

- Systematic monitoring and collection of international experiences;
- Need for reliable data in terms of accidents/incidents and ITS impact;
- Better data regarding operating and maintenance costs;
- Studies on how different users value information; and
- Better knowledge of how road users perceive ITS services and information and how they adapt their behaviour.

3 *ITS Evaluation approach of the Czech Republic*

Tomas Starek

ITS deployment under the TEMPO programme is the newest through the Euro Regional project CONNECT. The development of an evaluation process was started in 2004 under the project 'Efficiency of ITS application'. The main objective is to develop and test a comprehensive evaluation methodology in accordance with the Czech ITS Architecture and European requirements. The evaluation process is independent of transport mode, application or service type. The method used is based on US 'market packages' adjusted to

Czech conditions. Each market package represents the smallest ITS application part which can be evaluated separately. Cost and benefit indicators were assigned to all of market packages so the whole ITS architecture was covered and prepared to be assessed. The process aims to evaluate all types of costs (time, operating, environmental, congestion etc) and provide benefit indicators for different groups (companies, operators, various stakeholders). Operating, environmental and time costs savings will be obtained from the output of the software that will be produced.

The final outcome of the ITS evaluation process should be comprehensive, flexible and easy to use. The methodology test will be the prime activity in 2006 with the evaluation of projects included in CONNECT programme.

4	*Evaluation of re-routing measures on Long Distance Corridors (LDC)*
	Michael Dinter

CENTRICO, CORVETTE, VIKING and SERTI have started a network management initiative within the LDC Project where 3 pilot corridors will be implemented and evaluated. The evaluation procedure will define the scenarios, describe the field trials and will produce quantitative (kind, place of disturbance, beginning, end, time loss) and qualitative results (interviews, questionnaires, samples). The first step of the evaluation required to define scenarios, alternative routes and according traffic management measures. It was defined to consider grave disturbances on the highway A3 between two highly congested interchanges (Wiesbaden and Leverkusen). The alternative route runs westwards the Rhine. Traffic will be re-routed via VMS and radio bulletins.

The curve of vehicles will be detected behind the two interchanges when traffic will be re-routed. Due to comparison of curves during normality and during the activation of a re-routing measure the total of actual re-routed vehicles could be calculated. Statistical data will include traffic volumes and types of re-routed vehicles.

The evaluation will be completed on the above data and the benefits to be considered are the reduction in operating costs, the reduction of the driving time, the reduction of environmental impacts and accident reduction. Results so far have showed that the main benefit arise from the reduction in driving time. (84% of the total benefit) therefore a re-routing measure can have a positive effect if:

- The alternative is not much longer as the normal route or
- The incident causes a considerable extension of driving time.

The results of this evaluation will be widely transferable and they contribute to:

- Define a standard and harmonised procedure for re-routing measures
- Optimise organisational structures
- Create a strong cooperation between different partners
- Improve consideration of local, regional and trans-European aspects.

5	*BRISA before and after its participation in ARTS*
	Rui Camolino

BRISA was a motorway operator that used to manage 12 Regional Operational Centres. However, due to operational and management constraints it was vital to concentrate all communication centres to one central point, 'BRISA Operational Control Centre'. The new operating centre had new functions and systems amongst others considering:

- Communications, telephone network, emergency call boxes, radio and data

requirements;
- Procedures for operators to achieve maximum network efficiency
- Integration of financial procedures within ERP
- Data centre requirements

The development of the BRISA Operational Control Centre (OCC) is a major investment that totals 34.52M€. This includes the installation of:

- Monitoring systems (Visiobox model, CCTVs, recording facilities, meteorological stations, VMS)
- Communications Network (ACD, IP Switching integration)
- PMR Network (Remotisation of Operational Centres to OCC)
- GSM Network (Voice fallback, GPS, Data-POS terminal)

At the end of 2005 there are 298 CCTVs, 29 meteo stations, one counting station and 100 VMS with more investments to follow within 2006.

Wednesday 28th June 2006	
09:00	**Parallel session C1: Innovative Traffic Management and Control**
	Author: Steven Revill
	Chairperson: Henk Jan de Haan (RWS)
1	*Traffic Control Systems on Federal Motorways – The German Strategy to Enhance Safety and Improve Traffic using Variable Message Signs*
	George Stern & Angsgar Donges (Federal Ministry of Transport)

The German strategy contains the following traffic control measures to reduce congestion and hence increase safety on motorway networks: Line control, Network control, Junction control, Ramp metering and temporary use of the hard shoulder. Experience has shown that through the use of intelligent technologies such as line control using speed limits and overtaking prohibitions the number of accidents can be reduced by 20 – 30 %. Temporary use of the hard shoulder can enhance the capacity of the road by 20%.

Each single traffic control measure must be pre-evaluated and assessed in terms of benefit/ cost. If the benefit is evident, the measure will be approved and financed by the Federal Ministry. The Federal Minister will be bringing together all existing regulations in Germany in a unique guideline for traffic control systems later this year.

2	*Zero Vision – A Snapshot for the Initiative Congestion - Free Hessen 2015*
	Gerd Riegelhuth (Traffic Centre Hessia)

Hessen principle government has t developed the 'Congestion - Free Hessen 2015' future initiative for the assurance of sustainable mobility. The initiative intends to develop innovative solutions for the traffic infrastructure to provide solutions for the traffic problems of tomorrow.

The main aim of the project is to evaluate the causes which are responsible for the occurrence of malfunctions in traffic movement. This includes the generation of Floating Car Data (FCD) to determine traffic times and congestion hotspots. Further the application of traffic management such as temporary hard shoulder use to help eliminate capacity restrictions.

Traffic management measures are then adapted to produce an encompassing strategy management approach. The proven intermodal approach is being practiced successfully at large scale events and will take into consideration important aspects of intermodality with respect to Congestion - Free Hessen. From the Euro-regional aspect it is necessary to put in place common country wide traffic management strategies. For this to occur there is the need for government agencies to come to form joint strategies regarding dynamic information and adoptive navigation.

3	*Monitoring dangerous goods via satellite in France*
	Bernard Beudou (MET) & Christine Gassies (ARTS)

One of the challenges in terms of road management and safety is the monitoring of dangerous goods due to the various actors who may be involved (fire, police, environmental authorities). One technology that has been tested by CETE SO (South West France) since 2005 is monitoring via satellite.

The main stakeholders were identified and their monitoring needs determined. Information on

the positioning, direction and speed of the vehicle, danger code, product code and load status are transmitted every 5 minutes. Users can access data through the internet for their authorised vehicles i.e a transporters fleet, or road operator's network.

The handling of information when an incident occurs wlll be studied. It is aimed to improve the positioning of vehicles transporting dangerous goods in relation to road events on the network.

4	*Technical Approach for the Implementation of Re-routing Measures on Long Distance Corridors*
	Heribert Kirschfink (Momatec GmbH) & Gerd Riegelhuth (Traffic Centre Hessien)

Within the LDC Project an initiative regarding network management has started between member states and regions coming from CENTRICO, CORVETTE, VIKING and SERTI with the aim of combining information from different regions to agree on re-routing advice. This will require the integration of web-map services.

Strategy communicators are required to coordinate and monitor the process so that partners will be able to define their rerouting strategies within the unique web based administration environment.

The communications will be DATEX 2 compliant so they can be added to DATEX 2 Low Cost Profile.

5	*Using video mapping technology to support highway operation and maintenance management*
	Jerome Ferre (SAPN)

Monitoring systems have been increasingly employed to provide real time information. Extensive knowledge of the network and infrastructure is critical to the operation and maintenance of motorways. The SAPN operate a 368km network between Paris and Normandy's coastline and has been using video mapping technology to aid in decision making and optimize infrastructure management.

SAPN uses spatially encoded video mapping technology that provides image synchronization and GPS positioning. The system can be easily installed on maintenance and patrol vehicles and can be viewed through desktop and Intranet browsing tools. These provide network visualization through video and cartography, image analysis and manipulation, area management, referencing and virtual transformations and Company wide knowledge sharing and information management.

The use of such technology and traffic operations support mobility and road safety through the support of efficient planning of road maintenance and increased accuracy in ITS infrastructure. The evaluation revealed many benefits including increased safety, ITS efficiency, and performance and response of road operators.

6	*Automatic Video Stream Analysis to Optimize the Temporary use of Emergency Lanes - Results and Perspectives from German Motorways*
	Manfred Droste (VIKING)

In 2002 regulated openings of the hard shoulder during peak hours to enhance the capacity of the motorway was introduced in Germany. The improvements were substantial. The administrative regulations contain the following substantial requirements: The hard shoulder must be usable, VMS road signs in place, before each opening it must be examined whether the emergency lane is free from obstacles, this examination must be repeated regularly during the opening of the hard shoulder.

The main problem is safety. Examinations are completed through monitoring. Cameras are in operation at distances of 700 -800m allowing each section of road to be scanned. Video monitoring takes too long therefore infrared is used to detect obstructions. After opening the cameras detect standing cars or threatening congestion. In the future these cameras will have a wider range of uses such as determining speed profiles and traffic volumes.

The hardware for the cameras can be met with current technology further development must concentrate on stabilization of the video image and improvement of the evaluation software.

09.00	**Parallel session C2 - Perspectives in Traffic Information Services**
	Author: Jacqueline Barr
	Chairpersons: Ulrich Just, Ministry of Construction, Environment and Transport

1	*Scottish National Journey Time System and Development of Data Fusion*
	Ian Anderson - Transport Scotland (STREETWISE)

This project is reaching its final stages and is currently focussing on the design and testing of the data fusion algorithm. There are four data sources used in the algorithm:

1. Applied Generics RoDIN 42 mobile phone data
2. Transport Scotland's loop based traffic counter data
3. ITIS floating vehicle data
4. Trafficmaster automatic number plate data

The data undergoes a series of processes to transform it onto a common temporal and spatial network before it can be merged to provide a unified travel time. Preliminary results have shown the algorithm to provide a more reliable combined journey time than from any individual source.

The algorithm will now be tested and validated in a live environment at a second trial on the east coast of Scotland.

2	*Expanding the content of the Ferry Data Pool and deploying multimodal traveller information services*
	Stefan Kropel - GVS (VIKING)

In the VIKING region around 80 million passenger trips are made annually, without travellers having access to a single source linking ferry timetables and port information. The main aim of the project was to create a Ferry Data Pool for cross border multimodal travel purposes. The system uses a combination of the international data format TRIDENT and the Norwegian architecture ARKTRANS to form the TRIDENT+ format. Data can be accessed and downloaded by service providers at www.ferrydatapool.com.

The pilot service www.ferry-routing.com was developed in 2005 and has been open to the public since May 2006 using actual ferry data. The pilot has achieved two main goals:

1. user friendly presentation with maps and graphics with door to door planning
2. adaptations of the routing algorithm that displays all reasonable travel options

This service will operate for a period of 6 to 12 months. The main advantages provided by the service are:

- improved pre-trip information allowing the consumer to chooses between all reasonable route options
- exact timetable information incorporating check-in and check out times

Future steps include:

- extending geographically
- the inclusion of real-time information
- information for freight and travelling on public transport
- further development on the business model and financing options

3	*FIMSAA: Freight information and management system for the Alpine area*
	Karl Fischer - Logistikkompetenz Zentrum Prien (CORVETTE)

The aim of this project is to centralise extra heavy and hazardous goods information at a single management centre and develop an online information service. By providing relevant information the cross border planning and management of extra heavy and dangerous goods can be eased. FIMSAA introduced three transport classes for both heavy and dangerous goods to speed up the authorisation processes.

The system consists of a central database allowing paperless tracking and distribution of relevant information to all parties involved in transportation and authorisation. System focus has been on the development of a technology independent system without high investment and a user-friendly format. Future plans for 2006 include development of two separate online databases for extra heavy and dangerous goods.

4	*On-board information on speed limits*
	Renaud Heitz - ASFA (SERTI, ARTS, CENTRICO)

This project involves implementation of a real-time database of speed limits on all French motorways. Two types of limits are included:

- ***static*** - in vehicle speed information contributes to road safety, making drivers more aware of limits
- ***temporary***.- improve safety for the motorway workforce and warn drivers in advance of road works

The project was deployed in 2006 with motorway companies collecting the data and entering speed limits into a database, Autoroutes-Trafic merge the traffic data and this information is then transmitted to drivers. It is expected that this could provide both pre and on trip information. It could be preloaded into the cars inboard navigation equipment or supplied as a real-time connection.

Test vehicles equipped with GPS technology are being used to evaluate the system which uses Google Mapping. It is planned that the site www.autoroutes.fr will display permanent and eventually temporary speed limits on a map. The interesting issue of legal implications was raised at the end of the presentation and it was explained that the information transmitted was for information only.

5	*Travel Times – A Multi- Purpose Issue*
	Alf Peterson, SRA (VIKING)

The aims of this project are to broaden and improve the existing cooperation between the SRA, professional stakeholders and commercial service providers. They hope to create a win-win situation and generate new stakeholder interest.

The different requirements of travel times for each user group was explained – commuters, commercial transport companies, stakeholders and road managers. The solution devised by the SRA involved a multiuse system that could store and distribute the data. The sources of data used for the calculation of travel times are:

- roadside detectors – loops, microwave detectors and image processing systems
- dynamic detectors – in vehicle GPS devices and mobile phone data
- ANPR data bought from private sources

The process involves data fusion of these sources. Currently in Stockholm there are around 2000 professional carriers participating in the project and exchanging information. The results so far have shown greater efficiency is achieved by using the system and accurate travel times are calculated.

6	*Traffic Information Agency Bavaria- the VIB*
	Peter Pollesch, Bavarian Ministry of the Interior (CORVETTE)

This project focuses on steps towards the merging of all telematic activities in Bavaria. The initial concept was to produce a common technical platform, collect, process and disseminate travel information. This includes:

- congestion
- roadworks
- multimodal travel information

Data from different sources, such as public transport information, roadworks, weather and road detectors is collected, integrated and processed.

There are three types of services offered by the Traffic Information Bavaria:

1. basic, free of charge services for the public – the portal www.bayerninfo.de which provides information on current and predicted traffic situations and the Bavarian network for cyclists
2. public administration services (B2A) – statistics, traffic load profiles, congestion frequencies, average travel times and weather information
3. payable premium services – this includes personalised information and travel time predictions

Further development if the system is planned and cooperation with other European projects is expected to follow.

09:00	**Parallel session C3 - Perspectives in Data Exchange and Monitoring**
	Author: Maria Politou
	Chairpersons:

1	*Migration Study related to DATEX II*
	Pedro Perez

ARTS and CORVETTE have carried out a study that provides accurate guidelines to organisations on when and how to migrate from DATEX to DATEX II. The first step explains the results of DATEX II, the advantages over DATEX and provides a methodology for the classification of the existing DATEX nodes and networks. The results of the DATEX II study have shown that it is a platform independent model that is accurate and includes new data such as travel times and meteorological data according to the requirements provided by the EC. Apart from differences in architecture, the extra assets of DATEX II include an overall traffic situation providing better representation of the network, a structured data model and multiple location information.

The scope of the migration study is to:

- provide a smooth transition from DATEX to DATEX II
- provide information on advantages and results of the new system
- provide guidelines that will help decision takers
- provide an overview of the state of art in Europe and
- provide an instrument to define a strategy for long lasting success of DATEX II

There are three migration scenarios that need to be examined and these are either to identify a common type of DATEX implementation and investigate the solution or have a different DATEX node arch or have 'subnets'. That is groups of DATEX nodes with similar characteristics.
The existing DATEX nodes differ between countries in terms of data exchange technologies and in terms of complexity therefore an up-to-date overview on the different DATEX network and node types currently active in Europe will help the support of a harmonised migration from DATEX to DATEX II.

2	*DATEX II: flexibility and interoperability without contradiction*
	Josef Kaltwasser & Alan Raines

Stakeholders need the stability of the data exchange system in order to justify investments as well as the flexibility required to host diverse requirements from stakeholders all over Europe. The major tool that DATEX II provides is that, it provides standardised data model for traffic information. At the same time offers the opportunity to incorporate 'extensions' into the model, which allows application specific model parts being added to the standard model, without breaking interoperability and standard equipment. The extensibility component needs to be highly considered as there are many different (Europe wide) user communities that require data (TCCs, NTCCs, Police, Operators etc).

The advanced extension mechanism of DATEX II is the component that makes the system to maintain its flexibility and interoperability. All systems are able to exchange the standardised content of the level A DATEX content model but also users are able to upload additional information into national, regional or business specific extensions. It is aimed that these extensions will be used to inform a wider audience through the DATEX organisation that will develop a metadata registry like the one currently developed in the UK (www.itsregistry.org.uk).

3	*Delivering Integrated Traffic Management Tools for the Motorway and Urban Road Networks*
	Brian Maxwell (STREETWISE)

In Northern Ireland the TERN runs through the busy Belfast urban area. The fact that it is not only a long distance corridor but also a commuter's route makes the situation harder to deal with, demanding a more integrated approach to be adopted. The main criteria to be satisfied were to:

- store information from data sets that to date had been overwritten at periodic intervals;
- provide a single information store for data from all traffic systems operated by Roads Service;
- generate value from data storage Roads Service and for the public in development of traveller information services;
- simplify traffic management systems so that control room operators can focus on network monitoring; and
- maintain, or improve, the same standards of network controls as previously available through separate system management.

To achieve these objectives Roads Service has adopted the UTMC initiative that the UK Department for Transport has developed and provides a defined data structure and communications protocol. It stores data from and enables use of the UTC system, the control system for VMS and a journey time monitoring system. Further development includes the interface with the motorway traffic control and CCTV control system. Operators have now a single point of access to all systems allowing them to concentrate on their network monitoring role.

In practice, the system is capable to use traffic characteristics on the TERN to set VMS on the inter-urban network, on the urban network and automatically change traffic signal settings to control traffic on approach roads to the TERN. The benefits of this development:

- monitors travel times
- use of travel times to set information strategies to manage congestion
- extension of the ability to display journey times on VMS
- improved level of information and traffic management

The developed approach aims to address congestion problems in the urban area around Belfast. This fully integrated system provides best practice for development of an integrated traffic control system where there are issues to be resolved due to the different demands for management of the urban and inter-urban road networks.

4	*Planning for monitoring beyond 2006*
	Timo Karhumaki & Risto Kulmala

Traffic management is one of the most important Domains of development within the Euro Regional projects. In order to achieve efficiency in Traffic Management systems it is essential for road operators and authorities to develop relevant, harmonised and consistent traffic monitoring systems. The VIKING partners during this first MIP period have developed the following monitoring information:

- cross-sectional traffic status monitoring
- incident data acquisition
- cross-sectional road weather monitoring

- CCTV monitoring

Currently, the monitoring in the VIKING area is under the technology deployment phase when it will be decided whether the monitoring infrastructure is sufficient to provide the required level of service. The plan is to identify the gaps and differences between different countries and try to build a common platform. (e.g. road weather monitoring vs traffic monitoring). The plan for this year is to produce a map with traffic monitoring equipment installed on the VIKING network and by 2013 to extend it to include number of devices installed and length covered.

Therefore, currently there is no detailed monitoring plan due to differences in status and uncertainty of technology deployment. What is needed from the VIKING partners is a common ITS services approach and support from the European Commission in order to potentially contribute in a European Monitoring Plan.

5	*Innovative Cellular Floating Car Data Traffic Collection technology piloted in Antwerp*
	Nele Dedene

Flanders Government, mobile company Proximus and ITIS Holdings have piloted and validated a project to test the collection of road traffic data from sampling the positions of mobile phones in moving vehicles. The objectives of the study were the:

- Evaluation of the technical feasibility of an FCD system
- Validation of the quality of traffic data obtained

Floating Car Data measures traffic flows by mapping the position of vehicles from the mobile phones inside them. Apart from the collection of FCD it was necessary to have reference data available that would be used for the offline validation of the system. This data was collected with the help of more 'traditional' methods such as loops, CCTVs, video images, Automatic Number Plate Recognition and radars.

The validation showed that the FCD technology can give very promising results. At free flow traffic travel times were accurately predicted for both main road and the underlying road network. A perfect match in velocity was recorded for both the main road and the underlying network with 75% and 81.2% of the measurements respectively.

The next steps of this pilot include the improvement in the quality that FCD provide in order to provide more reliable results. Another target is to provide Origin-Destination data and software changes are required in order to achieve so.

6	*Microwave detectors vs loops – Comparison of technologies*
	David Laoide-Kemp

The M1 Balbriggan to Dublin Port Tunnel is the location of the microwave detection trial that utilises data collected for monitoring, detection and calculation of travel times. The detectors use microwave radar technology to measure vehicles by detecting the reflection of the microwaves from vehicles as they pass the detector. Traffic data is collected and it is used to calculate travel times. This information is disseminated through VMS, websites, email and SMS messages.

This technology was evaluated and its results were compared with data gathered from inductive loops. The tests were completed under a range of conditions both of traffic (congested and free flow) and weather (good and adverse). The results showed that the accuracy of microwave detectors compared with inductive loops is:

- 95% accurate in volume measurement
- 95% accurate in speed measurement
- 95% accurate in occupancy
- 90% in classification

Results satisfy the NRA's requirements for the suitability of microwave technology for monitoring, automatic incident detection and travel time generation. Therefore the potential and identified benefits of this technology are:

- The easy integration with the Traffic Monitoring system
- The accuracy for travel time calculation
- The installation without traffic disruption
- The low installation and maintenance costs

They are a viable option in high traffic and they produce consistent results in various weather conditions. Therefore for the scope of the study to use the technology to calculate journey times this technology proves to be suitable. Loops will still be the dominant technology for traffic counts.