TEN-TEA Project

Evaluation of the TEN-T Road Traffic Management Projects

Final Report: Part 2

Strategic review of ITS project evaluation

Project Number B99-B2704010-S12.98595/P A2 99 020/ETU TRL

Document number:	Final Report Part 2
Document version:	Issue 2
Status:	Final
Dissemination level:	TEN-TEA partners
	EC DG-TREN
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1. Introduction

The European Commission (EC) and the Member States of the EU support a considerable number of deployment projects in ITS[1] under the Trans-European Networks structure. Through the TEN-T budget over the period 1995 to 1999, over 93 million Euros was allocated to road traffic management projects, with overall investments in studies and telematics infrastructures in the region of 550 million Euros. EU funding of up to 50% was provided for studies and up to 10% for implementation work.

During 1995-2000 the individual projects made significant investment in Traffic Management Systems and laid the foundation for a European ITS Deployment Plan. The achievements of these projects are described in detail in another document[2].

The European Commission began to provide financial support to Traffic Management Projects within the Trans-European Network for Transport (TEN-T) in 1995. As the portfolio of projects grew, several issues became apparent:-

- There was a need for an improved assessment framework for the selection of projects and for the approval of final payment.

- There was a need to promote common activities between projects that were tackling similar problems in different regions of the European Community.

- There is a need to assess the overall impact of the TEN-T funding in the ITS domain.

The ASSISTEN-T project was commissioned in 1997 and formally started on 1st January, 1998. The project was set the task of assisting DG-TREN with the development of an improved assessment framework. The project also provided independent assessors to undertake assessment of projects within the portfolio.

When the ASSISTEN-T project came to an end in 1999, the Commission decided to split the work into two, one dealing with the support for cross-fertilisation between projects, and the other dealing with assessment.

The TEN-TEA project was commissioned on 6 December1999 for a period of 21 months. The aim of the project is to support DG Transport (now DG-TREN) in its task of assessing applications and completed studies and implementation projects funded under the TEN-T budget, by providing a pool of experts to review applications, studies and projects.

Early in 2000, DG TREN initiated a process of developing the new funding programme for the period 2001-2006. This has become known as the Multi-annual Indicative Programme, or MIP. The MIP incorporates many of the lessons learnt during the period 1995-2000.

TEN-TEA assisted with the development of the assessment procedures for the MIP projects and with the initial steps for developing evaluation and impact assessment. Six projects were selected for funding over the period 2001-2006. New annual financial and reporting procedures have been established. These procedures will be used for the first time during 2002.

This report provides a history of the improvements made to the assessment processes by DG TREN over the past four years. It concludes with recommendations to the Commission on further actions to improve the financial and administrative oversight of the MIP programme and to develop the philosophy for assessment of impacts in the MIP programme.

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[1] Intelligent Transport Systems

[2] "Achievements of the Road Traffic Management Projects Funded under the TEN-T Programme 1995 – 2000"

2. Development of the assessment framework for TEN-T Traffic Management Projects

2.1 Quality Guidance Handbook for Projects

The DG-TREN ASSISTEN-T contract (1998 – 1999) produced a Quality Guidance Handbook for Projects. The handbook was designed to assist projects in a practical way and to give them quality guidance. It consisted of advice and information, together with a set of pro-formas, which could be used as a basis for producing the documents required from projects.

The handbook provided projects with:

- lists of the documents which applicants needed to refer to in preparing their proposals;

- an improved understanding of how the Commission dealt with applicants and projects at each stage, from submission of proposals to final payment;

- assistance with preparing proposals and the technical annexes to EC decisions;

- guidance on how to prepare the information that was needed to monitor and assess the satisfactory progress of the project, during the course of the work and once it has been completed.

- the forms and templates required, in electronic form, at each stage of a project. This helped projects to present the information in a format fully acceptable to the Commission.

Various forms and templates were issued to projects to standardise the layout of workplans and reports. The forms were as follows:-

- Preliminary Application Forms

- Project Workplan Template

- Project Status Report Form

- Project Final Report Template

- Request for final payment form

This handbook was sent by the Commission to TEN-T proposers of projects in Autumn 1998 and used by them to develop their Workplans for the 1999 TEN-T funding allocation process; it was also used by projects for the 2000 TEN-T funding allocation process.

2.2 Handbook for Assessors

ASSISTEN-T also produced a parallel Handbook for Assessors. The Final Assessment Form was tested in the final assessment of three projects in November 1998 and lessons were drawn from this testing. The Commission issued a revised Handbook to Assessors prior to subsequent final assessment of projects in May 1999. This handbook continued as the basis of final assessment of projects in July 1999 in the ASSISTEN-T Contract and in 2000 and 2001 in the TEN-TEA Contract; it only continued as the basis of assessment of project proposals under the TEN-TEA Contract until completion of the 2000 funding allocation process. The introduction of the MIP process for the 2001 funding allocation process necessitated changes in the approach to assessment of proposals.

The new assessment framework involved the use of independent assessors. These assessors (either internal or external) were asked to assist the Commission in the evaluation of both proposals and projects. The assessors evaluated the projects in respect of strategic,

technical, and financial criteria. The aim of the new assessment process was to make the assessment process transparent to proposers and projects.

Different types of information were available for assessments at each stage in a project, but in general the assessments were based on the following:

- the Work Plan

- progress reports

- on the spot controls; e.g. on-site reviews

- project outputs; principally the final report

- the Evaluation Plan, i.e. the plan for evaluating the field trial results if these are a feature of the project

- the presentation at the end of the project (if this is required as part of the final assessment).

In practice the main information used for assessment of proposals was the Workplan while the main information used for assessment of projects was the Final Report.

More details of the assessment to be carried out at each stage of a project were provided in the relevant section of the handbook.

This handbook for assessors explained the process of assessment, and provided the documents to be used for assessing projects at different stages in their life: the proposal, the progress reports and the final reports. Pro-formas were provided for recording the results of assessments at each stage in a common format.

The handbook for assessors provided:

- an outline of the documents which set out the EU requirements and guidelines, which projects funded under the programme need to address

- an explanation of how DG-TREN dealt with applicants and projects at each stage, from making an application to the final assessment at the end of a project

- guidance for assessors on how to evaluate proposals for projects and the projects themselves while they are being undertaken and when they have been completed

- pro-formas for summarising the assessment results in electronic form: these were designed to enable assessors to present their findings in a common format.

The pro-formas made available were:-

- Proposal Assessment Form

- Final Assessment Form

2.3   Assessment of proposals and projects

The ASSISTEN-T project assisted DG TREN with the assessment of the following proposals during 1998 and 1999:-

- ARTS
- CESARE
- CORVETTE
- MARTA
- ROMANTIC
- VIKING
- CARISMA
- CENTRICO IV
- SERTI IV

- Framework architecture for Intelligent Transport in France

The ASSISTEN-T project assisted the Commission with the assessment of the following completed projects during 1998 and 1999:-

- ITS City Pioneers
- SERTI II
- CENTRICO II
- ARTS I
- CORVETTE II
- VIKING II
- Transport Telematics Implementation in the Flemish Region
- ECORTIS

2.4   Application of assessment process

When the ASSISTEN-T came to an end in 1999, it was succeeded by two projects. ASSISTEN-T 2 (Cross Fertilisation) dealt with the support to projects in working together. TEN-TEA continued the work on assessment. The TEN-TEA project began in December 1999. Lessons learned from the assessments undertaken by ASSISTEN-T were applied and some changes made to the assessment forms. The project then planned a major programme of assessments for the proposals for funding in 2000. Eleven projects were assessed between February and March 2000 by a team of four assessors. The following proposals were assessed:-

- ARC-ATLANTIQUE
- ARTISTA
- INSTANT
- URBAN-INTERURBAN
- European Network of ' TRAFFIC CENTRES'
- T.I.S
- ARTS III
- CORVETTE IV
- CENTRICO V
- SERTI V
- VIKING IV

Ten completed projects were assessed between February 2000 and July 2001, involving seven assessors. These were:-

- CENTRICO III
- CESARE
- TEL-TEN
- ROMANTIC
- ARTS II
- SERTI III
- VIKING III
- CORVETTE III
- SERTI IV
- CENTRICO IV

An on-site review was conducted of the project SERTI RDS-TMC field trial over a period of four days across four countries in December 1999.

3. Review of the administrative process for assessing TEN-T Traffic Management projects

3.1 Feedback from the assessment process

As part of the assessment process, assessors were asked to complete a feedback questionnaire giving comments on the process. This feedback was used to produce a synthesis of lessons learned. A summary of those lessons follows.

3.2 Assessment of Proposals for TEN-T Traffic Management Projects

3.2.1 Assessment Process

The initial process for the assessment was as follows:-

(a) A panel of independent assessors was selected through discussion with DG TREN. Those assessors met together over a few days in Brussels.

(b) Each proposal was allocated to two assessors, who initially worked independently to complete an assessment questionnaire.

(c) Early feedback to the Commission was provided to set the agenda for the meeting with the proposers.

(d) One of the two assessors was assigned the task of merging the two assessment forms. The original and merged proposals were then moderated and the resulting assessment agreed between the Moderator and the main assessor.

(e) The completed assessment was then passed to DG TREN who used it as input to a wider consideration of the proposal.

3.2.2 General comments on the proposals

(a) The early proposals were rather poor in their understanding of the requirements for Community support. They were written more from a National point of view, with little regard for the European issues.

(b) Some of the key European requirements, particularly those concerning the demonstration of any ex-ante justification for the investment based on the economic viability of the proposal were generally lacking.

(c) The provision for monitoring physical progress in the early proposals was weak.

(d) Environmental issues were not generally addressed in proposals - they are probably not very important for ITS implementation but proposals should deal with this issue explicitly

3.2.3 Comments on the assessment process

(a) The process of preparing independent assessments, then merging them, then moderating them and finally agreeing the assessment was rather time-consuming.

(b) The independent assessment related to the quality of the proposal. During the meeting with projects, further questions arose which reflected the past history and previous record of the project. Representatives of the projects were sometimes surprised that the questions raised during the meeting were more significant than they had been led to believe by the nature of the 'first questions.' This may be due to the fact that the assessors were concerned with ensuring that the proposed Work Plan was adequate whereas DGTREN was addressing at this meeting the likelihood that the project would be funded and at what level.

(c) The Proposal Assessment Form proved useful. However, it needed to be adapted for each project to handle the wide range of project structures, from those that specified one main activity to over eighty separate activities. It was sometimes difficult for assessors to adjust the available time to the number of activities and to use the assessment form to the best advantage.

3.2.4   Recommendations on Assessment of Proposals

These recommendations were made prior to the MIP development. They were mostly addressed within the new process.

(a) Applicants need to be made more aware of the requirements for Community support

(b) More information may be required to assess 'value for money' – this should not be difficult for national projects because their smaller scale facilitates a more detailed approach at the application stage.

(c) It needs to be made clear to applicants that additional questions may be raised at the meeting with DG TREN and that these are as important as questions distilled from the preliminary assessment and sent prior to the meeting.

3.3   Assessment of Completed TEN-T Traffic Management Projects

3.3.1   Assessment Process

(a) Two external assessors were appointed in discussion with the Commission. One of these was appointed as the lead assessor.

(b) Before the first assessment day they were provided with copies of the Work Plan (and any revisions to it), any Project Status Reports, Final Report, other relevant project reports, and a glossary of terms, so that they could read them in advance of the assessment.

(c) Assessors usually spent a day at their place of work completing individual versions of the Final Assessment Form on the basis of the documents provided. Some national and European projects were assessed locally and the assessments were then sent direct to DG TREN without a visit to their offices, further exchanges being conducted electronically.

(d) For most projects, the assessors travelled to DG TREN's Offices and were briefed by Commission staff on the project, its background and any issues relating to the project. The Assessors worked together on producing a harmonised version of the assessment form, based on the two independent assessments. There was then a discussion with the Commission at the end of the day on the draft harmonised form and a preliminary list of issues to be raised with the project. The final harmonised assessment form was submitted shortly after the visit to Brussels after which the assessors answered any final comments on the assessment form by the Commission and agreed the final list of issues to be raised with the project.

(e) The Commission wrote to the project listing these issues which required clarification. In some instances, the projects attended a meeting with the Commission, at which they made a presentation of the project and answered the issues raised.

(f) Where projects made a presentation, one of the assessors spent the rest of the day completing a final assessment form based on the consensus of the individual assessment forms completed on the first assessment day, and on the responses to the issues raised.

3.3.2   General comments on the project outputs

(a) The amount of material to be assessed was usually extensive. In one case there were over 1000 pages of deliverables. The sets of reports were not in general, well designed or structured; e.g. the main deliverable was the final report but it was often quite difficult to pursue final reporting into a sub-domain deliverable because the Commission often had to request it especially

(b) Delays in the execution of the agreed work meant that reports were often for a much greater reporting period than originally expected. Reported work overlapped with other work funded under different phases of the project. It was therefore often very difficult to isolate the work done under a particular contract.

(c) It was fairly usual for projects to shift budgets between sub-activities, resulting in over and under spends. The task of identifying and explaining the differences between the proposed and actual work was onerous for the Euro-regional projects, in view of the large number of tasks. Furthermore, results from projects were often presented in a manner which made it difficult to relate work done to budget and actual cost

In some cases there were few reports in English. Attempts were made to accept reports in various languages, but this placed additional constraints on the assessment process

3.3.3   Comments on the assessment process

The major projects consisted of a large number of activities. These were reported separately, but were organised in different domains. Assessors were faced with a complex task to understand the structure and achievements of the projects in one day. In order to do this the project outputs need to be highly organised and structured, with information on the proposed work, timescale and budget, together with achievements, timescale and cost. Assessors generally found the task difficult to complete in the time available.

The completed assessment form was quite an unwieldy document, for example, around 45 pages. However, it was necessary to cover numerous activities within the various activity domains. The form appears to be more efficient in use rather than in being read afterwards. However the summary and recommendations provide the key information for the Commission with justification for any adverse comments in the detailed text. As the form is not designed for circulation to projects , this is probably not a major deficiency. It is difficult to envisage how detailed assessments of complex projects can be completed with a simplified assessment form without simplification of the structure of the projects themselves

3.3.4   Recommendations on the assessment of project outputs

These recommendations were reached prior to the development of the MIP programme. They have all been subsequently addressed within the new programme.

(a) Reporting phases were complex. For a given project, the assessors might be assessing a proposal for phase 3, while assessing results from Phase 1 and Phase 2 is ongoing. This made it very difficult to judge the progression of the work. Annual reporting and funding would make this process much easier.

(b) Achievements and Costs are complex to analyse. With overlapping timescales and many different topics being included, it was very difficult to analyse achievements against costs. Costs and achievements could be reported by Domain, sub-domain, country, study/implementation etc. A cost spreadsheet could be used to aid analyse with consistent results.

(c) The set of documents to be assessed is sometimes unclear. There were often a rather haphazard collection of National reports in different languages, each with different scope and level of detail. The volume of material can often be excessive. Variations in the

organisation of activities increase the complexity of the assessment. Standardised reporting on an agreed set of common activities would aid the assessment

(d) Evaluation reports designed for wider readership should be encouraged.

(e) Difficult to report on how a project contributes to programme achievements. Differences in structure and timescales of reporting style make it very difficult to extract summary details of the achievements at project and programme level. Summary reports on common activities in the same style and format would make this easier.

4. Towards a method for assessing the impact of EU funding and evaluating projects

4.1 Financial analysis

Between 1995 and 1999, the EU funding in the TEN-T programme amounted to over 93 million Euros. Analysis of the projects in the programme which are 'closed' financially (listed in the table below) shows that the actual financial support amounted to 47.5 m Euros, compared with a budget of 49.9 m Euros, (a difference of 4.8%), indicating that the projects have been effective in completing the planned work programme.

Start year	Member State	TITLE	Actual EC Support (M Euros)	Planned EC Support (M Euros)	Difference (M Euros)	% difference
1995	B	Study for the creation of a traffic information and control centre in Belgium/ Walloon region	0.500	0.500		
1995	B	Study on the transport telematics implementation project in Belgium/Flemish region (Data Exchange and organisation and RDS/TMC)	0.500	0.500		
1995	DE	Study on the up-grading of RDS/TMC in Germany	0.097	0.110	0.013	11.8%
1995	ES	Study on the completion of Traffic Info Centres Network in Spain	0.180	0.180		
1995	ES	Completing the network of regional Traffic Management Centers(Project)	0.740	0.740		
1995	ES	Study on the demonstration of RDS/TMC service in Madrid area	0.068	0.135	0.067	50.0%
1995	ES	Demonstration of RDS/TMC on accesses to Madrid (Project)	0.164	0.410	0.246	60.0%
1995	ES	Study on implementation of RDS/TMC on Spanish part of TERN	0.093	0.185	0.093	50.0%
1995	ES	Installation of advanced signalling and management systems on the M-40 ring motorway around Madrid (Project)	1.700	1.700		
1995	EUR	Study on the Harmonisation of levels of services and organisational measures (road traffic management)	0.261	0.500	0.239	47.8%
1995	EUR	Study on the European coordination for the implementation of RDS-TMC Traffic information services	3.680	3.680		
1995	EUR	Feasibility study on the European Data Exchange Network between traffic information centres on the transEuropean Road Network(EDEN)	0.345	0.400	0.055	13.8%
1995	EUR	Study on the Central European Road Telematics Implementation Concertation (CENTRICO)	0.376	0.400	0.024	6.0%
1995	EUR	Study on the South Europe Road Telematics Implementation (SERTI)	0.400	0.400		
1995	F	Study on the national integration of the European guidelines for traffic monitoring in France	0.470	0.470		
1995	F	Implementation of the National Traffic Management Master Plan (project)	2.480	2.480		
1995	IT	Study on the RDS/TMC traffic information service on TERN in Italy	0.930	0.930		
1995	LUX	Integrated Control and Information System for the Motorways of the Grand Duche of Luxembourg	0.300	0.300		
1995	NL	Study on the Traffic Management on the TERN in the Netherlands	0.050	0.050		
1995	NL	Traffic Management on the TERN in the Netherlands	0.268	0.268		
1995	P	Study on the Control and information road traffic system on the Portuguese trans European Road network	0.350	0.350		
1995	SF	Study on Traffic management systems on TERN in Finland	0.454	0.454		
1996	B	EU study for RADEF (Road Administration Exchange) (B coordinates)	0.415	0.415		
1996	DE	Cross Border Route Guidance System Nuremberg - Prague / Linz - Prague study	0.450	0.450		
1996	DK	Studies for Traffic Management on the motorway link to Oresund	0.500	0.500		
1996	ES	Completing the network of Traffic Managment Centres in Spain	0.836	0.855	0.019	2.2%

Start year	Member State	TITLE	Actual EC Support (M Euros)	Planned EC Support (M Euros)	Difference (M Euros)	% difference
1996	EUR	Study on ITS City Pioneers (Ertico)	0.500	0.500		
1996	EUR	Study on traffic management and information services in the Central European area (CENTRICO) (B,NL,D,F)	5.286	5.286		
1996	EUR	Implementation of traffic management and information services in the Central European area (CENTRICO) (B,NL,D,F)	2.088	2.161	0.073	3.4%
1996	EUR	Study on traffic management and information services on the TERN in the SERTI area (D, F, I, E)	2.534	3.283	0.749	22.8%
1996	EUR	Implementation of traffic management and information services on the TERN in the SERTI area (D, F, I, E)	0.145	0.221	0.076	34.4%
1996	EUR	VIKING-Study for coordinated road traffic management implementation in Northern Europe (D, DK, SW, SU)	0.875	0.875		
1996	EUR	CORVETTE-Study for the coordination and validation of the deployment of advanced transport telematic systems in alpine areas (D, A, I)	0.600	0.600		
1996	F	Implementation of the National Traffic Management Master Plan (SDER)	2.500	2.500		
1996	IT	Demonstration and installation of RDS-TMC information services on the TERN in the Northern part of Italy.	0.500	0.500		
1996	SF	Implementation of Traffic Management systems for TERN in Finland	0.208	0.208		
1996	SF	Studies for Traffic Management systems for TERN	0.500	0.500		
1996	SW	Studies for Swedish access routes to Øresund	3.500	3.500		
1996	UK	Study on ROADLINK Network - Real Time Traffic Information	0.300	0.300		
1997	EUR	VIKING -Phase II (implementation)	0.969	1.190	0.221	18.6%
1997	EUR	VIKING - Study	5.257	5.460	0.203	3.7%
1997	EUR	ARTS - Advanced Road Telematics in the South West (Study)	1.100	1.100		
1997	EUR	ARTS - Advanced Road Telematics in the South West (Implementation) Europe	0.585	0.630	0.044	7.1%
1997	EUR	CORVETTE Phase 2 (implementation)	1.000	1.000		
1997	EUR	CORVETTE Phase 2 (study)	1.287	1.350	0.063	4.7%
1998	EUR	Common EFC System for an ASECAP Road-tolling European service (CESARE)	0.400	0.400		
1998	EUR	MARTA (Motorway Application for Road Traffic Advisor); European platform for the co-ordination of projects dealing with the use of the Dedicated Short Range Communications standard for traffic information purposes.	0.8	1.0	0.2	20%
		TOTAL	47.541	49.926	2.385	4.8%

4.2 Towards a deployment plan

Although the financial performance of the projects provides one indicator of their effectiveness, their performance in achieving ITS deployment on the TERN provides a more accurate indicator of their impact. Using this approach, project impacts would be assessed by comparing their achievements against a plan for European ITS deployment.

In the absence of a European ITS deployment plan, discussions with DG-TREN on how to proceed with assessing impacts led to a decision to work on the development of a deployment plan.

It was agreed that the best way of achieving this would be to work with the Member States to identify current and planned initiatives for deployment of ITS on the European road network. The DG-TREN ASSISTEN-T 2 project was already working with the Expert Group, so
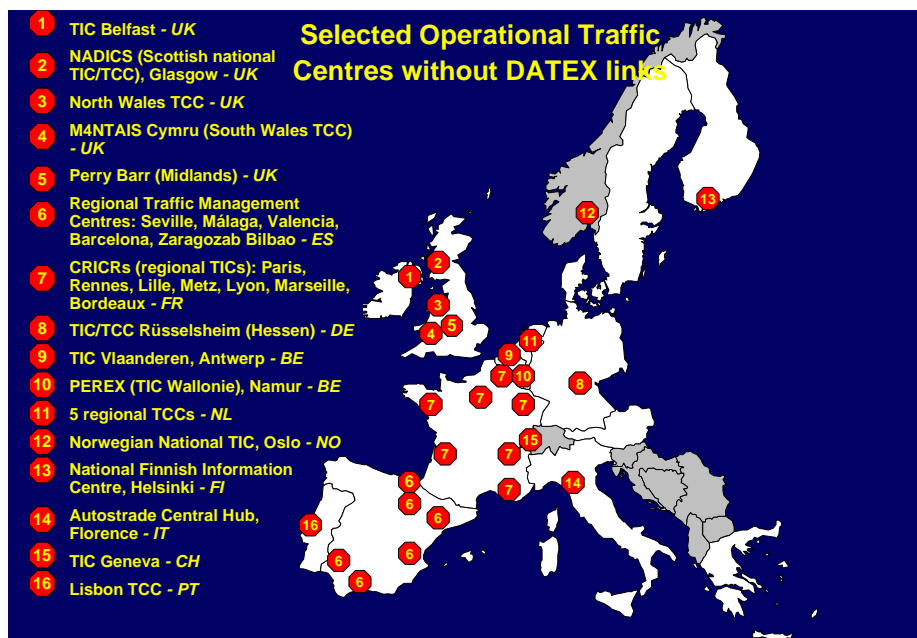
through ASSISTEN-T 2, information was collected from Member States via the Expert Group.
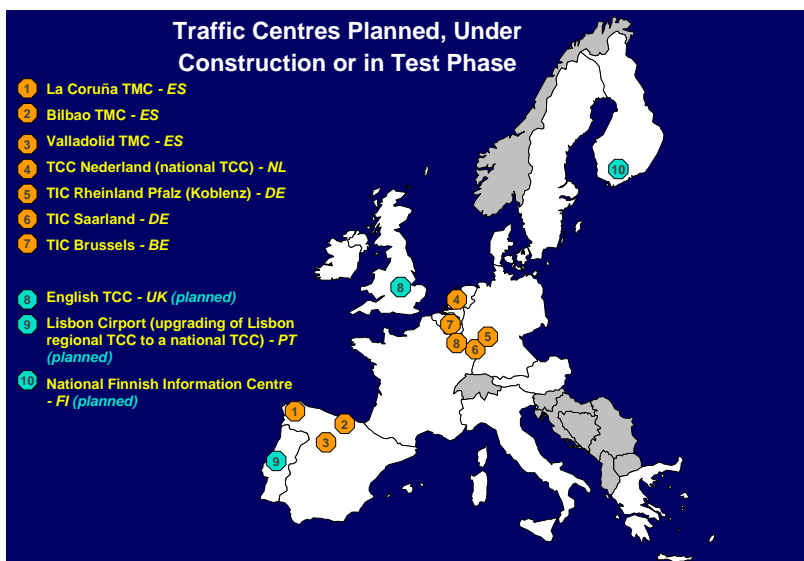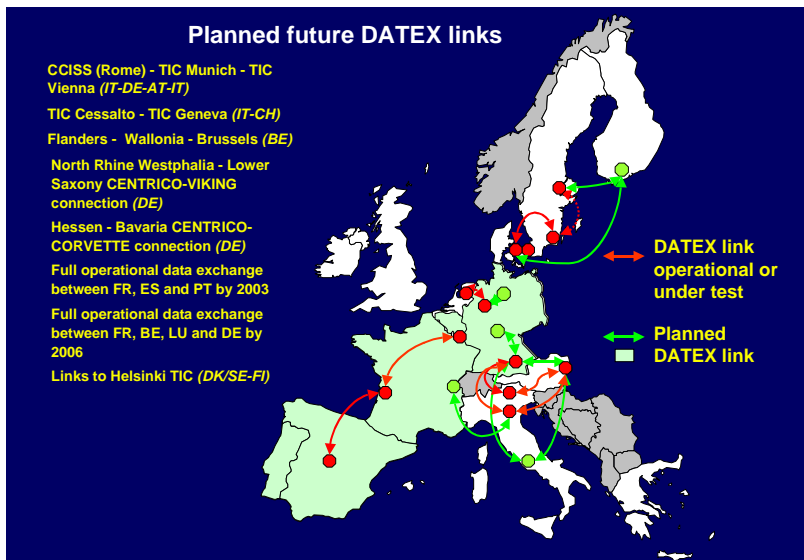
It was agreed that the work on impacts of TEN-T support in the TEN-TEA project would focus on developing an actual deployment plan, based on this information from Member States collected by the ASSISTEN-T 2 project. It was agreed with DG-TREN that this deployment plan would take the form of an interactive 'PowerPoint' presentation that would be accessible and easy to use in high level presentations.

The TEN-TEA team consulted projects about the preparation of this presentation through the Expert Group and Member States, and this led to bi-lateral interactions between TEN-TEA and Member State representatives, rather than with individual projects. The advantage of this approach was that it enabled the presentation to cover all relevant initiatives in Member States, not just those funded under the TEN-T programme.

The presentation was revised in response to consultation with Member States, and issued to Member States. The presentation is map-based, and provides a valuable resource for the EC and Member States. Several Member States have used it to improve the understanding of ITS and the nature of investment, at a high level.

The following maps illustrate how the presentation depicts the development of traffic centres and data exchange systems for sharing information between centres.

Operational Traffic Centres with DATEX Links

1 Danish National Traffic Information Centre - *DK*

2 Swedish National Centre for Traffic Information - *SE*

3 Kristianstad Regional Traffic Information Centre - *SE*

4 Öresund Link Operations Centre - *DK/SE*

5 National Traffic Control Centre, Utrecht - *NL*

6 TIC Nordrhein-Westfalen - *DE*

7 CETE de Bordeaux - *FR*

8 TIC Bavaria (8 organisations) - *DE*

9 TIC Trento (Brenner motorway) - *IT*

10 TIC Vienna (ÖRF - Ö3) - *AT*

11 DGT (Madrid) - *ES*

Planned future DATEX links

CCISS (Rome) - TIC Munich - TIC Vienna *(IT-DE-AT-IT)*

TIC Cessalto - TIC Geneva *(IT-CH)*

Flanders - Wallonia - Brussels *(BE)*

North Rhine Westphalia - Lower Saxony CENTRICO-VIKING connection *(DE)*

Hessen - Bavaria CENTRICO-CORVETTE connection *(DE)*

Full operational data exchange between FR, ES and PT by 2003

Full operational data exchange between FR, BE, LU and DE by 2006

Links to Helsinki TIC *(DK/SE-FI)*

DATEX link operational or under test

Planned DATEX link

Traffic Centres Planned, Under Construction or in Test Phase

1 La Coruña TMC - *ES*

2 Bilbao TMC - *ES*

3 Valladolid TMC - *ES*

4 TCC Nederland (national TCC) - *NL*

5 TIC Rheinland Pfalz (Koblenz) - *DE*

6 TIC Saarland - *DE*

7 TIC Brussels - *BE*

8 English TCC - *UK (planned)*

9 Lisbon Cirport (upgrading of Lisbon regional TCC to a national TCC) - *PT (planned)*

10 National Finnish Information Centre - *FI (planned)*

4.3 Analysis of impacts

The analysis of impacts involved identifying the ITS systems that had been deployed. Rather than carrying out a systematic analysis of projects, the analysis focused on information provided by Member States as part of the process of identifying the deployment plan.

The following factors were identified as potentially improving the services offered:

- Improved rate of ITS development

- Investment in systems and data communications

- Cross-border agreements have been signed or implemented

- Systems for network monitoring are operational (along the TERN)

- Traffic Management Plans have been agreed

- Traffic Management systems have been implemented

- Information Services are available (RDS-TMC)

- Impacts on traffic efficiency have been measured

These factors represent a progression in the deployment of ITS services. The minimum impact of the programme that might be expected is that it would improve the rate of investment in ITS. The next stage would be investment in underlying systems and communications to support services. As further progress towards deployment of services is achieved, agreements and systems are implemented, traffic management plans are formed, traffic management systems are implemented, information services are available, impacts are measured, and finally, technologies and services are refined.

Activities in Member States were identified in these areas, and examples are listed in the following sections.

4.3.1 Improved rate of ITS development

- The examples listed in the sub-sections below show that ITS systems and services are being developed and implemented on the TERN, and that the rate of ITS development has improved.

4.3.2 Investment in systems and data communications

- Initially, investment focused on systems and data communications, which formed the basis for the services that are now being implemented.

- In the Euro-Regional projects, studies have been performed to identify the current status (quality) of monitoring on the TERN within specific regions. The outcomes are being used to prepare planning for upgrading the quality level of monitoring up to an acceptable level, throughout the TERN, especially on international corridors. In particular, the various partners in the VIKING project have made substantial progress towards a common approach to monitoring systems.

4.3.3 Cross-border agreements have been signed or implemented

- The development of a network of Traffic Centres and Data Exchange between them is a priority action in all five Euro-Regional projects, i.e. CENTRICO, VIKING, CORVETTE, SERTI and ARTS. Numerous Data Exchange (DATEX) "nodes" are being implemented and a large number are planned.

- To assist new service providers and provide greater coherence across Europe, work is on-going to enhance data exchange agreements, providing standard user filtering and profiles, and develop agreed testing and certification methodologies.

- Work within the CESARE, MANS and CARDME projects has defined similar approaches to a common interoperable EFC application which could be supported by all operators throughout Europe. The Nordic countries are working together on a common Electronic Fee Collection (EFC) service. The Motorway Operators are developing the specification and associated contractual framework for a European inter-operable EFC service.

4.3.4   Systems for network monitoring are operational (along the TERN)

- Weather monitoring and forecast systems have been installed on the TERN in several regions.

- Portugal has implemented traffic monitoring infrastructure in Lisbon and further implementation is planned for the Oporto area

- Denmark has invested approximately 4.5 million Euro for monitoring of traffic, and 4.5 million Euro for weather monitoring.

4.3.5   Traffic Management Plans have been agreed

- Rerouting plans have been developed on international corridors including: Eindhoven-Köln (pilot is running), Rotterdam-Antwerp (pilot started in December 1999), Arnhem-Oberhausen (pilot to start in mid 2000).

4.3.6   Traffic Management systems have been implemented

- A new re-routing sign has been developed by CENTRICO. This is already used in re-routing pilots. A procedure has been started to receive commitment of the road authorities in the participating countries and of the other Euro-regional projects. The aim is to have the sign adopted by all West European countries.

- Major programmes are being implemented by French motorway companies: e.g. on main corridors such as A7 Vallée du Rhone, A 1 Paris Bruxelles, A31 Sillon Mosellan, A10 Paris Bordeaux, A 11 Paris Nantes, A 13 Paris Rouen Caen, A 63 Bordeaux Bayonne , Biarritz, A8 A 9 Arc Méditerranéen,

- A programme for equipping federal highways in Germany with dynamic traffic control installations has been carried out between 1996 and 2001. The length of motorway sections equipped with traffic control installations now amounts to more than 600 km. In addition, there are already nearly 1,550 km of motorways with variable direction signs and about 7 traffic control centres have been built.

- There is an Incident detection pilot study on the N7 in Ireland. The National Roads Authority is currently checking the feasibility of incident detection, congestion management, re-routing advice using a system of traffic loops connected to VMS signs.

- In the Netherlands a vast Incident Management system has been implemented, covering almost the complete motorway network. Call centres for private car incidents as well as for truck incidents are integrated in national call centres. The major aim is to increase safety by minimising the time required for handling the incident and therefore restoring normal traffic flow.

- After several failures due to political pressure, the Netherlands intend to implement an Electronic Fee Collection system in 2002, called 'Rekening Rijden'. This is a demand management measure for the most congested areas. It will be a full speed drive-through system without space consuming toll plazas.

- Up-to-date Traffic Control Centres have been installed in Spain, Portugal, Luxembourg, the Netherlands and Finland. Many existing traffic centres are being up-graded in Germany, Italy and France.

4.3.7   Information services are available (e.g. RDS-TMC)

Many activities have focused on the deployment of information services throughout the various projects:

- VMS have been implemented for on-trip information in the Lisbon area. The signs will be up-graded in future with pictograms. Portugal will generally focus on the implementation of more VMS on the road network in the near future.

- A project on multi-modal traffic information system is being proposed by both NRA in Republic of Ireland and DoE of Northern Ireland.

- Finland's real time traffic information service on the Internet is used widely for traffic information by radio stations. Internet based information service will be utilised indirectly and increasingly in the future also for on-trip information services.

RDS-TMC services are now wide spread:

- TMC Services for general traffic messages are available in most European countries, including some free public services as well as fee-based commercial services. The free ALERT services, for example, form a network covering nearly all of Europe. Each service is specifically linked to a country where it can cover the entire area or specific regions of that country.

- TMC coverage currently exists in Spain, France, Switzerland, the UK, the Netherlands, Germany, Sweden, Finland and Denmark, as well as the Flanders region of Belgium and northern Italy. There are plans for coverage to be extended to Portugal, the Czech Republic, Austria, Hungary and the rest of Italy. By agreement, national and international service providers broadcast cross-border messages for long-distance and international drivers.
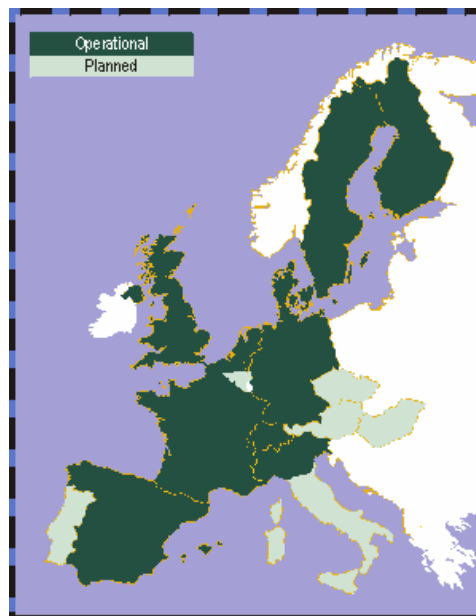
European RDS-TMC service coverage

(Source: ERTICO-lead TMC Forum 2001)

- RDS-TMC service is now available in the whole of Finland but very few receivers for RDS-TMC exist in vehicles. In the near future, Finnra will maintain the RDS-TMC service and follow the development of various receivers.

- In Denmark there has been an investment of 1.5 million Euro for development of the traffic information centre and RDS-TMC.

4.3.8   Impacts on traffic efficiency have been measured

The emphasis in the programme has been on investment in systems and services. Analysis of the activities in the programme has highlighted the fact that assessment of benefits at the European level has been limited, although benefits have in some cases been assessed at a national level.

4.4   Conclusions and recommendations

From this analysis of the state of ITS deployment on the TERN, the following conclusions were drawn:

- Despite considerable investment, relatively few information services were actually operational.

- Evaluation was becoming more important as an issue for ITS deployment, but the programme had not advanced sufficiently for evaluation to be carried out.

- The emphasis up to this point had been on the investment in underlying systems, rather than on pan-European services.

These conclusions led to the recommendation for the MIP that the key objective should be to stimulate a harmonised and synchronised deployment of ITS systems and services on the TERN.

Assessment of the completed projects has focussed on comparing actual expenditure against planned expenditure in the work plans. Benefits of the systems and services have accrued in terms of improving the efficiency and operation of the road network at a national level. With the emphasis of the MIP programme on harmonised and synchronised deployment of ITS systems and services, benefits at a European level will be seen in the use of services by European citizens. A framework is therefore required for evaluating these benefits.

Initial work on the framework began in the STREETWISE project through a workshop for the MIP projects, for which the TEN-TEA project provided assistance. This has led to work in STREETWISE to develop a management structure for supporting evaluation activities across the MIP projects.

The DG-TREN support project that will follow after the end of TEN-TEA, will take this work forward through a group of European evaluation experts. This will develop and implement an agreed evaluation framework supporting the MIP, develop an Evaluation Action Plan to be carried out in conjunction with the MIP projects, and assist the European Commission in the process of stimulating the evaluation tasks within the projects.

5. Development of the TEN-T ITS investment programme

5.1 ITS Deployment Plan

As the 1995-2000 programme drew towards its end, the European Commission began to develop ideas for the next investment programme for the period 2001-2006. One of the preparatory steps was to establish an ITS Expert Group comprising representatives from all Member States. That group met in late 1999 and worked through until April 2000. The Expert Group produced the ITS Deployment Plan. The Deployment Plan formed the basis of the formal funding process for the ITS projects in the period 2001-2006, called the Multi-Annual Indicative Programme(MIP).

The production of the ITS Deployment Plan was an extremely significant event in the development of the investment programme. It brought ITS to the attention of all the European Member States and enabled them to work together on a harmonised programme of activities. The Deployment Plan process also facilitated a smooth transition between the annual project submission and the phased multi-annual programme approach which is likely to focus the investment and take greater advantage of the achievements across the programme.

5.2 Development of the MIP Programme

The Multi-Annual Indicative Programme (MIP) is a six-year commitment from the TEN-T budget to support ITS projects. It provides an opportunity for long term planning as well as sound and efficient financial management. This commitment creates in turn strong constraints on the European budget and calls for proper and stable financial control and a strong administrative framework.

The MIP Programme has overcome many of the problems with the management of the phased programme for Traffic Management Projects. There is a common set of activities being addressed across all the projects and this will make it easier to report at the programme level on the achievements. Project reporting and budgeting is much clearer and proposals can now be assessed in the light of the achievements for the previous year.

5.2.1 Development of the Common ITS work programme

The work programme for the MIP projects is shown below. This programme was developed and refined during a two-day workshop with all the projects. It serves to provide a common basis for the development activities. It is also hoped that it will facilitate common reporting across the programme, something which was rather difficult previously.

Common Programme of Activities for the MIP Projects

Domain	Activity
1-Road Monitoring Information	1.1. Developing monitoring plans
	1.2. Fixed data capture stations and control systems
	1.3. Mobile data capture stations and control systems
	1.4. Study of new technologies
2-Traffic Information Centres	2.1. Studies of user needs
	2.2. TCC/TIC Upgrading
	2.3. Cross-border information exchange systems (e.g. DATEX)
	2.4. Interconnection with other centres (e.g. local, regional, public transport)
	2.5. Integration of location systems
3-Traffic Management and Control	3.1. Traffic Management Plans (TMPs)
	3.2. Urban/Interurban interfaces
	3.3. Decision support systems
	3.4. Tactical Management and Control
	3.5. Safety issues
4-Traveller Information Services	4.1. Studies of user needs
	4.2. Data management for Traveller Information Services
	4.3. Journey time prediction across modes and borders
	4.4. Roadside information and fixed points of information
	4.5. In-vehicle information and navigation systems
	4.6. Internet and telecommunications based services and studies
	4.7. Mobility management and multi-modal services and studies
	4.8. Service agreements
5-Freight and Fleet Management	5.1. Studies of user needs
	5.2. Integration of traffic information and logistic freight transport information
	5.3. Specific information and measures for HGV transport and dangerous goods
	5.4. Optimised fleet operation
	5.5. Multi-modal and inter-modal services for freight operators
	5.6. Freight tracking and tracing systems
6-Incident and Emergency Handling	6.1. Studies of user needs
	6.2. Systems for reporting incidents
	6.3. Management of incidents
	6.4. Systems for avoiding secondary accidents
7-Electronic Fee Collection	7.1. Studies of requirements and impacts of EFC
	7.2. Development of MoUs for Inter-operability
	7.3. EFC trials
8-Horizontal issues	8.1. Systems architecture
	8.2. Evaluation
	8.3. Enforcement
	8.4. Organisational and legal issues
9-Project Management	9.1. International project management
	9.2. Regional/local project management
	9.3. Management of Cross-fertilisation
	9.4. Dissemination, Communication and public relations

5.2.2 Development of improved financial arrangements for the MIP

The Group 4 projects within the Multi-Annual Indicative Programme provide a six year programme for investment in ITS. Six projects have been selected for funding under the ITS programme and have submitted six year plans amounting to over 1,500 million Euros of investment.

The EU support will be around 192 M€, based on yearly EC decisions. A potential of 72 EC decisions (covering 6 projects for both studies and implementation over the 6 year programme) may need to be prepared in this framework. These decisions will refer to yearly detailed work plans.

For any 6 year rolling programme there are basic requirements. There is *a need to monitor progress and expenditure on an annual basis*. Detailed workplans for each year will need to take account of over or under spends in the previous year and modify the budget accordingly. Progress and spend will need to be compared with the previously approved workplan and the EU support determined.

The MIP introduces a major change to the financial arrangements. Each decision now relates strictly to one year. EU support also relates to spend in the year January-December. Any work started but not completed within the year will need to be carried over to the workplan of the following year. Any work neither started nor completed within the year will be included in the workplan for the following year providing it still satisfied the requirements of the ITS Multi-Annual Indicative Programme.

The six-year commitment creates strong constraints on the European budget and necessitates careful implementation of the financial rules. A stricter implementation of the regulations on which activities attract 50% and 10% is expected to be required as part of the process of assessing work plans and annual reports.

Advantages of the new approach

- Complete monitoring of planned work, budgets, spend and work done is possible

- No need to add the "decision" dimension to the cost database

- Good relationship between outputs for the previous year and the workplan for the current year

- Reduction in the delay to projects in receiving EU support (as the payment would not be affected by delays in completion of work).

- The annual spend across the whole programme could be monitored.

- Delays in completion of project work would have little impact on the total spend in the ITS Multi-Annual Indicative Programme. Projects would have less work overall as they would only need to work on one decision in any one year.

- DG TREN would have more control over the budget across the five year period.

Disadvantages

- Need a change in the financial procedures

- Part of the annual budget may not be transferable and therefore may be lost.

- Is this compatible with the principle of funding decisions related to well identified content?

There may be a concern that projects may not spend all their budget in any year and that this will lead to some EU support being lost from the programme. In fact the situation should be much improved from the present for the following reasons:-

- Under the present situation, funding which was nominally allocated within a year actually gets spent over a much longer period. The eventual support is paid sometimes up to three years after the start of the programme. With annual reporting of spend, EU support would be paid much quicker and more evenly

- Any underspend in one year can be made up in the following year. This would be easier to manage than the situation where there is great uncertainty about when the EU support will be paid.

5.2.3 Developments in improved reporting for the MIP

5.2.3.1 Annual Workplans

It is expected that each project will prepare an Annual Workplan. This will cover the proposed work programme and budget for the present calendar year. The workplan budget should be consistent with reported costs for the previous year and revised budgets in the annual report. In assessing the workplan, the Commission and their assessors should also have access to a report on the achievements of the previous year. A template for the Annual Workplan has been issued to projects.

5.2.3.2 Annual reports

The Annual Report will describe the achievements and costs for the work in the previous Calendar year. In view of the fact that the Annual workplan is required early in the current year and the Annual Report cannot be written until the end of the previous year, it is proposed to have a draft Annual Report early in the year and a final Annual Report in May. The Draft Annual Report will be used for assessing the annual workplan submission, which is due at the same time. A template for the annual report has been issued to the MIP projects.

The annual report will be finalised by April and will then be used for assessing the work done and costs incurred during the previous year. This will form the basis of payment by the Commission.

5.2.3.3 Financial reporting

All projects have produced a spreadsheet in a similar format giving all the annual budgets for each activity. Actual costs will be entered into the spreadsheet for the previous years and budgets for future years will be updated. These spreadsheets will provide consistent financial analysis across the whole period of the MIP.

6. Development of the Assessment Framework for MIP proposals

6.1 The MIP Assessment Process

The process of preparing the MIP proposals was substantially different to the previous process as reported above.

During late 1999 and early 2000, representatives of the Member States participated in the Expert Group organised by DG TREN and jointly produced the overall ITS Deployment Plan with DG TREN. This Deployment Plan established the activities to be supported within the Multi-Annual Indicative Programme.

This process was extremely useful to Member States and ensured that the objectives and requirements of the programme were accepted and clear to all the major proposers.

Initial proposals for funding under the new Multi-Annual Indicative Programme were invited received by DG TREN by 16th October, 2000. The applications for funding covered the period 2001-2006 and were thus indicative of the proposed programme.

David Maltby and Ken Perrett met with Olivier Waldner to devise an appropriate assessment form to support the assessment process. The process was designed to be more interactive than previously and the assessment form was provided to the projects prior to a meeting with DG TREN.

The assessment form was simpler than had been used previously. It was applied independently by David and Ken and then harmonised prior to being issued to the projects.

Nine proposals were received. Of these DG TREN assessed three as being outside the overall scope of the Multi-Annual Indicative Programme. The detailed assessment was conducted on 6 projects:-

- ARTS
- CENTRICO
- CORVETTE
- SERTI
- STREETWISE
- VIKING

Meetings were held with all the projects in late October 2000. The assessment framework was presented to the projects. The initial assessments were discussed and accepted by all the projects. They also undertook to make appropriate revisions to their submissions and deliver a revised application. In most cases this involved some further detail in the description of the proposed activities. Projects were asked to prepare a commentary on the revisions made in response to the initial assessment.

The revised applications were assessed again, this time by Ken Perrett. The final assessment forms were sent to the projects to enable them to prepare a final MIP proposal by 15th January 2001.

As a result of this process, DG TREN recommended that six projects be supported over the period 2001-2006. This was formally ratified by the Commission.

Each project then submitted an annual plan for the year 2001. These plans were reviewed using a simplified assessment procedure in which a single assessor spent one day in commenting on the proposal. It was thought that one day would be sufficient in view of the similarity of the annual plan to the five year plan.

6.2   Analysing proposed budgets

The process of reporting budgets in the submitted proposals has long been a problem. Budgets are allocated on the basis of activity, year and partner. Summary reports are required by country, partner, year, sub-domain and domain. Usually, the financial information has been entered throughout the proposal. Changes have inevitably occurred and this tends to generate inconsistent figures. Assessors have experienced great difficulty in reconciling all the various financial tables within a proposal.

For the MIP, DG TREN requested projects to submit a standardised spreadsheet, which systematically recorded all the information at the lowest level. Summary reports for any level can be produced easily from the master table using the pivot table feature of Excel. This process would also enable DG TREN to combine all the project budgets to produce an overall programme budget. However, some projects have personalised the spreadsheets and this may introduce problems for subsequent financial analysis at the programme level.

6.3   Lessons learned from the assessment of MIP proposals

1. The assessment process for the MIP 5 year plans was efficient in terms of resources.

2. Projects were well informed about the assessment process and met with DG TREN to formally accept the process and the resulting comments. They all agreed to undertake necessary improvements. All projects made some improvements in their submitted plans.

3. Some projects were not clear about the level of detail required within an "Indicative" plan. However, all of the projects worked well with DG TREN to provide what was required.

4. The subsequent convergence process has further improved the assessment. Harmonising all the domains and sub-domains will facilitate a comparative assessment in future.

5. The funding process for the annual workplans was developed during 2001 and this created some difficulties for project managers who had not fully recognised the nature of the annuality. Indeed there was some initial negative reaction to this.

6. In practice, the Annual Plans were rather different. Partly this was due to the "first year" effects as project managers moved from a project defined in work content terms to one defined by time constraints. With the previous programme, the project was deemed completed when all the work had been completed – this sometimes took much longer than the nominal "annual" period for funding. Under the new regime, work has to be achieved within the year.

7. Projects have not yet fully adjusted to the process of reporting annual spend within a five year programme. Further refinement of this process will be required in the 2002 reporting.

8. Overall the process was efficient, transparent to projects, and effective.

9. Cross-border initiatives (e.g. demonstration, technical validation or concerted deployment) make a considerable contribution to added value and a true European vision for ITS Deployment.

7. Developing the assessment process for 2002

A proposed annual programme is as follows:-

- **Progress Report and draft financial statement for previous year submitted in February**

At the beginning of each year, project should submit a report and draft financial statement of the work and costs for the previous year. The cost estimates will not be finalised but will indicate the level of work which is expected to be completed within the period.

- **Adjusted work programme submitted in February**

The revised work programme for the current year will take into account work carried over from the previous year. The budget will need to match the work programme and any differences from the previously agreed annual profile explained.

- **Discussion and approval of adjusted work programme**

DG TREN will assess the work programme and discuss any issues with projects prior to approval of the programme when satisfactory.

- **Commission decision on annual commitment (Target: May)**

The formal decision on funding will take place around May.

- **Final report and consolidated financial statement for previous year submitted (Target: April)**

Projects will submit a final report and financial statement for the previous year in April. This will be used as the basis for payment.

- **Discussion and feedback on technical and financial aspects of the final report and claim**

DG TREN will assess the final report and discuss any issues raised concerning the achievements and costs with projects before approving the cost claim.

- **Approval for payment for previous year (Target: October)**

Projects will be paid for work undertaken in the previous year.

8. Recommendations to projects and EC

8.1 Confirmation of the annual timetable

The proposed timetable above should be confirmed and issued formally to projects.

8.2 Preparation of draft Annual Reports for 2001

Projects should be formally asked to prepare their annual report with some instructions on the DG TREN expectations. The report should also include the submission of a cost spreadsheet which can be used by DG TREN and assessors for subsequent analysis.

The draft Annual Report will be finalised when the actual costs are available and will then be assessed for approval of payment.

8.3 Preparation of Annual Workplans for 2002

Projects should be formally asked to prepare their annual workplan for 2002 with some instructions on the DG TREN expectations.

These might be along the lines of the following:-

- Include approved MIP budget

- Provide revised actual and future proposed budgets for each year in the period 2001-2006

- Provide detailed budget for the year 2002

- targets for activities should be realistic, measurable and achievable (within the year)

- projects should be careful to ensure that activities meet the financial regulations for funding studies and implementation

- projects should aim to produce evaluation reports on the impact of their schemes as an on-going process

8.4 Updating of the budget and cost spreadsheets

Projects should be asked to resubmit the updated cost and budget spreadsheet with the Annual Workplan and with the Final Annual Report.

8.5 Planning the assessment tasks

There are two assessment tasks. Firstly, the project workplans for 2002 will need to be assessed - reference to the 2001 Annual Report and 2001 workplan will be essential elements in this assessment. The outcome of this will be approval of the budgets for 2002. This process might take place in March/April 2002. The assessment form devised for the MIP proposals should provide a satisfactory basis for this assessment, but should include an additional elements to review whether activities meet the regulations for funding studies and implementation.

Secondly the annual reports will need to be assessed in order to approve payment of incurred costs. This process could take place in May 2002. The assessment form for the annual reports should be based on the assessment form for the TEN-T reports, but should take account of lessons learned from the assessment of completed projects. Changes will also be required to take account of the MIP process (such as a stricter interpretation of the regulations on funding studies and implementations).

8.6   Preparing an overall programme report for 2001

This report could become an annual feature of the programme. As all the project reports are available at the same time, with the same structure and format, it should be possible to do this quite efficiently. This report could include the total expenditure by project, country and domain. If the cost spreadsheets have been properly compiled by projects, then the automatic amalgamation of costs should be straightforward.

A similar process could be done for the workplans – this would provide all the projects with feedback on other work going on in the programme.

8.7   Monitoring the production of reports for assessment

The Annual Workplan and Annual Report templates list the reports which are expected to form part of the assessment of the project. DG TREN should track these and assess them as they are delivered, rather than wait until the Annual assessment. Non-delivery of reports should count against projects in the assessment.

8.8   Preparation of evaluation reports

The horizontal activity on evaluation which is being led by STREETWISE will provide a framework within which projects will plan, conduct and report evaluation of the systems and services as they are implemented. A group of Evaluation Experts from the projects, supported by the successor to TEN-TEA, will need to work with the projects to develop this framework and put it into action.

This process should help to raise the profile of evaluation activities within the projects, and to ensure that the projects evaluate and report the impacts of the systems and services that are deployed in a consistent way.   This consistency of reporting will facilitate the synthesis and dissemination of results demonstrating the impacts of the programme.