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Directorate General Energy and Transport

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**MID-TERM REVIEW OF THE
ITS DEPLOYMENT PROGRAMME (TEMPO)
WITHIN THE
MULTI-ANNUAL INDICATIVE PROGRAMME (MIP)**

ISSUE 5

**TEMPO Secretariat
“Deployment of intelligent transport systems in the road sector in
Europe”**

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SUMMARY

This document has been produced as part of the mid-term review of the European ITS deployment programme. The programme runs from 2001 until 2006 and is part of the Multi-annual Indicative Programme (MIP). The document has been prepared by independent consultants working on behalf of the Directorate-General for Energy and Transport (DGTREN) within the European Commission. It contains recommendations for DGTREN to consider in deciding the future content and management of the programme.

1 INTRODUCTION AND OVERVIEW

1.1 THE ITS DEPLOYMENT PROGRAMME

The ITS deployment programme is managed by the European Commission and is providing approximately €200m support for the deployment of Intelligent Transport Systems and Services across 14 Member States during the period 2001-2006. The work is organised into six major multi-national projects which propose annual programmes of work under similar activity domains. The projects also submit a report of achievements and spend for the previous year.

DGTREN, the Directorate responsible for this programme, has commissioned independent experts to provide assessments of the overall programme, each annual workplan and each annual report. The programme is known as TEMPO and the support project is TEMPO Secretariat.

1.2 PURPOSE OF THE MID-TERM REVIEW

The European Commission considered that it was appropriate when establishing the six-year MIP programme to have the opportunity to review progress and to make adjustments to the programme at the mid-stage. The Mid-term review allows all concerned to consider the achievements in the first three years, to review any changes in policy which might impact the programme and to allow for some revision of the programme in the light of these changes. All the MIP projects within the programme were asked to make a submission to the review. This document analyses the responses and make recommendations to the Commission. Decisions taken as a result of this review will help to shape the programme up to 2006 and consider what happens beyond that date.

1.3 PROCESS FOLLOWED FOR THE MID-TERM REVIEW

The TEMPO Secretariat worked with DGTREN to prepare a document which formed the basis of the request for information from the projects. This document¹ was sent to projects in August 2003, with a request for a response by the end of September.

The six MIP projects (ARTS, CENTRICO, CORVETTE, SERTI, STREETWISE and VIKING) submitted their responses by 15th October. A team from the TEMPO Secretariat comprising Wim Broeders and Ken Perrett worked on the submitted documents at the offices of DGTREN during the week 20th-24th October with Keith Keen, the programme manager.

The project submissions were analysed for conformance to the requirements. Unfortunately, projects had not provided a significant amount of the required information, particularly on the actual and expected costs for the period 2001-2003 and on the original annual budgets for each year by domain and country. Considerable effort was expended during the week by Commission staff and the support team in obtaining the missing information. A report on the material received is given as Annex 1.

A spreadsheet was prepared giving the original budgets, actual expenditure to date and proposed future expenditure. This is used throughout this report for presentation of the financial information and is available separately for further analysis by the Commission. The spreadsheet is now complete and available for use in analysing estimated spend and budgets.

The team worked through each activity domain, firstly analysing the reported achievements for the period 2001-2003 and then the proposed activities 2004-2006. For the 2001-2003 activities, some remaining gaps were identified. Recommendations were made for each domain in relation to their 2004-2006 proposals.

During this process notes were prepared at a detailed level for each domain within each project. These notes may be useful for the Commission to use in responding individually to each of the projects. They are provided as Annex 2 to this report.

Having analysed the six year programme for each domain, the team then worked on "Shaping the future programme". This work was designed to provide proposals to the Commission on how to structure and manage the forward programme, bearing in mind the complexity of the present programme, and the need to simplify the burden on the Commission of managing the programme.

Finally the team prepared some overall conclusions from the process.

It had originally been hoped to report on the level of deployment across Europe against target deployments. However, the requirement on projects to provide statistics on target and completed deployments was considered too onerous for the mid-term review. Instead the projects were asked to provide maps showing current and future

¹ TEMPO mid term MIP review.doc

deployment. While many of these maps show what has been installed, they generally do not show the target deployment and they cannot easily be aggregated to provide statistics at the European level.

1.4 STRUCTURE OF THE REPORT

The report has been prepared by independent consultants working to support DG TREN. The team has worked mainly at the Commission's offices and closely with the Project Officer, Keith Keen. The recommendations are intended for consideration within the Commission.

[Section 1](#) provides an introduction to the ITS deployment programme and to the requirement for a mid-term review. It describes the process followed and the structure of the report. It also describes the supporting financial information contained in a spreadsheet prepared as part of the review process.

[Section 2](#) provides an overview of the ITS deployment in terms of the domains of activity, the organisation into projects and the level of involvement of each country.

[Section 3](#) provides a review of the progress made by projects in the period 2001-2003, based on the submissions made by the six ITS projects within the programme.

[Section 4](#) presents a summary of the proposed programme for 2004-2006 as contained in the project submissions for the mid-term review.

[Section 5](#) provides proposals for shaping the future programme and summarises the recommendations on proposed budgets, activities for 2004-2006, management of the programme, issues arising from the inclusion of the applicant countries and assessment of the programme in the period 2004-2006.

[Section 6](#) presents some comments received from the projects on improving the management of the programme.

[Section 7](#) provides some overall conclusions from the mid-term review process.

Finally, there are three annexes to this report. The first provides an analysis of the conformance of the project submissions to the issued requirements. The second annex provides some detailed notes for each project and domain. The third annex provides some details of the column headings and data fields in the associated spreadsheet.

1.5 SUPPORTING FINANCIAL INFORMATION

The supporting spreadsheet² contains several worksheets, as follows:-

- Data
- Domain
- Country
- Domain by project
- Years by project

1.5.1 DATA

This worksheet contains all the data from the projects on budgets and expenditure. It contains 1009 lines and is arranged in columns.

It was not feasible for the analysis team to enter details for the country involvement in each domain. Consequently total figures were entered for each domain and for each country separately. The domain information is "blank" for the country records and the country information is "blank" for the domain records. Tables using all the entered figures will therefore give some double counting. If any table involves domain or country, then the table will be correct. If not then either country="blank" or domain="blank" should be selected.

There are slight differences between the totals by domain and by country due to slight uncertainty within the projects about whether countries not receiving support (e.g. Switzerland) should be included in the domain totals.

The following four worksheets are pivot tables produced automatically from the "data" worksheet. The variables in each table may be modified and new tables created as required.

² TEMPO Project Budgets-v5.xls

1.5.2 DOMAIN

This is a pivot table produced automatically from the information in the "data" worksheet. It provides a breakdown of budget and current estimate by domain for each year 2001-2006, for all projects or an individual project and for studies/implementation separately or combined.

1.5.3 COUNTRY

This is a pivot table produced automatically from the information in the "data" worksheet. It provides a breakdown of budget and current estimate by country for each year 2001-2006, for all projects or an individual project and for studies/implementation separately or combined.

1.5.4 DOMAIN BY PROJECT

This is a pivot table produced automatically from the information in the "data" worksheet. It provides a breakdown of budget and current estimate by domain by project for 2001-2003, 2004-2006, or 2001-2006 for studies/implementation separately or combined.

1.5.5 YEARS BY PROJECT

This is a pivot table produced automatically from the information in the "data" worksheet. It provides a budget and current estimate for 2001-2003, 2004-2006, or 2001-2006 for a particular domain or all domains and for studies/implementation separately or combined.

Notes:

- The reader is recommended to open the spreadsheet to view the various tables at this stage.
- In case a negative figure occurs on the line "difference" this means that the claim for budget (or costs) is higher than originally planned (increased budgets).

2 OVERVIEW OF THE ITS DEPLOYMENT PROGRAMME

2.1 OVERVIEW OF APPROVED ACTIVITIES 2001-2006

The ITS programme has been organised into nine activity domains. These are:-

- Domain 1 Road Monitoring Infrastructure (RMI)
- Domain 2 European Network of Traffic Control Centres (TIC)
- Domain 3 Traffic Management and Control (TMC)
- Domain 4 Traveller Information Services (TIS)
- Domain 5 Freight and Fleet management (FFM)
- Domain 6 Electronic Fee Collection (EFC)
- Domain 7 Incident and Emergency Handling (IEH)
- Domain 8 Horizontal issues (HI)
- Domain 9 Project Management (PM)

All projects currently propose programmes of work within these nine domains. There are organised cross-fertilisation activities linking similar activities across all the projects. These activities are managed by Expert Groups drawn from all the projects.

The original six-year budgets approved by the Commission for each of the domains is given in Table 1 below. All costs contained in the tables in the report are expressed in €1000. The original programme totalled €1.2 billion.

Table 1: Total original budget 2001-2006 by project and activity domain

Original budget		Project							
Dom no	Domain	ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	Grand Total	
1	RMI	56,014	81,341	53,233	58,285	5,575	28,115	282,564	
2	TIC	31,394	81,196	34,615	25,757	6,845	52,843	232,650	
3	TMC	3,059	140,023	66,654	5,465	27,175	80,295	322,671	
4	TIS	65,201	43,922	23,850	57,160	9,750	27,924	227,807	
5	FFM	2,398	483	17,048	3,706	370	5,840	29,845	
6	EFC	0	10,687	200	902	590	789	13,168	
7	IEH	20,582	6,764	19,789	2,296	2,830	310	52,571	
8	HI	477	1,416	1,535	1,054	945	1,775	7,202	
9	PM	2,956	11,226	6,744	5,375	2,305	4,339	32,945	
Grand Total		182,082	377,058	223,668	160,000	56,385	202,230	1,201,422	

Costs in €1000's

As can be seen from the table, the first four domains account for 90% of the budget. The programme is designed to provide appropriate levels of traffic monitoring infrastructure on the whole of the TERN to provide the necessary information on the traffic and road conditions. The network of linked Traffic Control Centres collect, analyse and manage the monitoring data. Appropriate traffic management systems use the traffic information to make informed decisions on strategies and systems for managing the traffic. Information is disseminated by means of the Traveller Information Services to improve individual traveller decisions. These systems and services form the basis of the ITS deployment programme.

2.2 OVERVIEW OF APPROVED PROJECTS 2001-2006

The programme is organised into six regional projects. These involve 14 out of the present 15 member States and also involve several non-EU countries, such as Norway and Switzerland. The projects range in budget from €56m for STREETWISE to €377m for CENTRICO. The projects have submitted revised estimates for the period 2004-2006 which, taken with the estimated spend for 2001-2003, increase the total costs of the programme by €76m. Table 2 shows the actual/estimated expenditure for the period 2001-2003 and the revised budget submitted for 2004-2006, compared with the original budgets. The current total estimated spend for the period 2001-2003 is close to the original budget, although there are wide deviations across the projects.

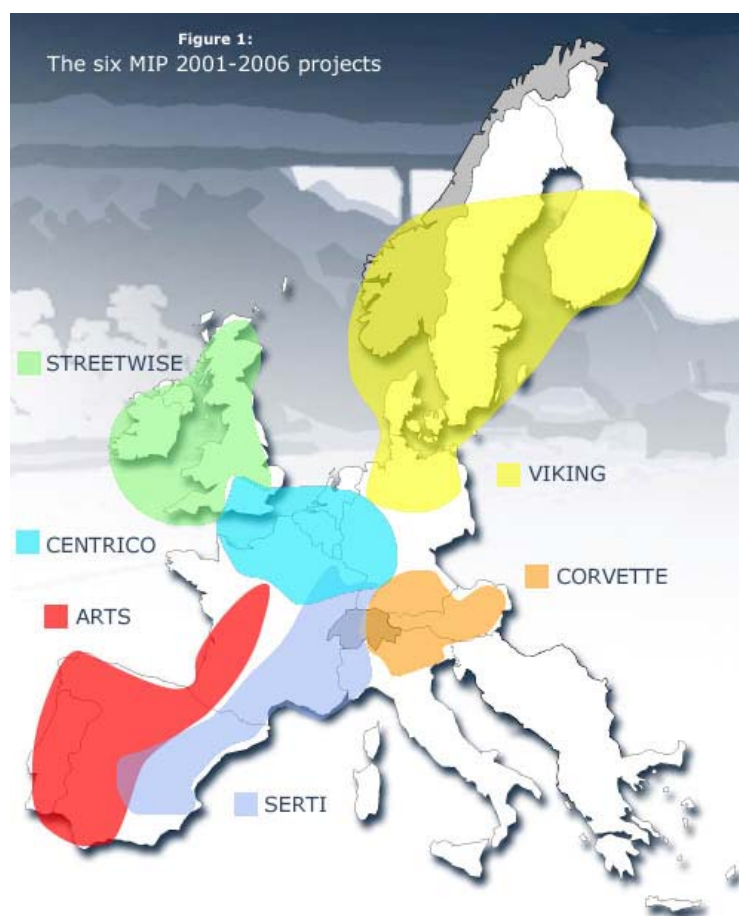
Table 2: Comparison of original budget with current estimated spend by project

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	83,615	200,378	91,798	87,044	34,115	94,465	591,414
	Current estimate	81,282	185,669	99,903	81,103	49,742	93,212	590,910
	Difference	2,333	14,709	-8,105	5,941	-15,627	1,253	504
2004-6	Original budget	98,467	176,680	131,870	72,956	22,270	107,765	610,008
	Current estimate	97,770	217,683	134,244	98,976	30,343	107,765	686,781
	Difference	697	-41,003	-2,374	-26,020	-8,073	0	-76,773
Total Original budget		182,082	377,058	223,668	160,000	56,385	202,230	1,201,422
Total Current estimate		179,051	403,352	234,147	180,079	80,085	200,977	1,277,691
Total Difference		3,031	-26,294	-10,479	-20,079	-23,700	1,253	-76,269

Costs in €1000's

2.3 OVERVIEW OF COUNTRY INVOLVEMENT 2001-2006

The areas covered by the various projects are shown in the following map. Greece is the only EU Member State not currently involved in the programme.



The level of involvement of the various countries varies considerably. Table 3 shows the original budget by country for each year of the programme.

Table 3: Total original budget by country and year

Original budget Country	Year						Grand Total
	2001	2002	2003	2004	2005	2006	
Germany	29,034	49,718	53,894	54,341	52,371	48,388	287,744
France	19,743	32,948	32,809	37,160	34,249	30,613	187,523
Spain	17,756	22,793	21,259	24,492	22,370	20,538	129,207
Netherlands	11,732	25,560	26,453	10,008	8,148	7,949	89,850
Italy	17,457	16,444	16,819	16,386	11,893	9,164	88,161
Austria	6,694	12,233	13,500	18,541	16,658	17,348	84,974
Belgium	7,510	14,963	15,580	15,019	15,371	14,197	82,640
UK	17,499	16,035	16,524	12,740	10,101	6,691	79,590
Sweden	6,570	7,000	7,300	7,215	7,690	8,105	43,880
Finland	4,550	7,025	7,025	6,425	6,425	5,715	37,165
Portugal	4,197	4,836	6,002	7,126	6,317	5,646	34,125
Switzerland	1,450	4,890	590	5,025	5,055	5,075	22,085
Denmark	1,932	3,400	3,900	4,000	4,300	4,500	22,032
Luxembourg	755	1,310	1,398	1,469	1,475	1,453	7,860
Ireland	235	1,010	2,100	1,730	980	540	6,595
Andorra	350	350	320	230	230	250	1,730
Norway							
Grand Total	147,464	220,514	225,473	221,907	203,632	186,171	1,205,160

Costs in €1000's

A further 10 countries will join the EU in 2004. These are:-

- Cyprus
- Czech republic
- Estonia
- Hungary
- Latvia
- Lithuania
- Malta
- Poland
- Slovakia
- Slovenia

Some or all of these countries are expected to apply to join the ITS deployment programme.

3 REVIEW OF PROGRESS 2001-2003

In this section, each domain is considered in turn. The approved programme and budget is summarised, followed by some comments on remaining gaps in the programme.

3.1 D1 - ROAD MONITORING

All six projects have a strong focus on the installation of road monitoring equipment to collect basic traffic and road condition data on which most of the traffic management and information services rely. Table 4 shows the total estimated spend for the period 2001-2003³ is about €140 million. The technologies employed include:-

- Traffic counting stations
- Weather stations
- CCTV cameras
- Fibre optic cabling

Table 4: Spending on Road Monitoring in the period 2001-2003 compared with the budget

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	24,322	42,777	20,210	31,989	3,525	13,280	136,103
	Current estimate	31,980	41,179	24,231	25,872	8,788	11,398	143,448
	Difference	-7,658	1,598	-4,021	6,117	-5,263	1,882	-7,344

Costs in €1000's

Main achievements for 2001-2003

- High level monitoring has been installed on 532 km of the TERN in Netherlands between 2000 and 2003
- Germany has installed 125 traffic counting stations, 21 weather stations and 15 camera installations
- Italy has installed 130 traffic counting stations, 180 weather stations and 227 camera installations
- France, Italy and Spain working together within SERTI project have installed 900 km of fibre optic cabling, 50 weather stations and 300 video systems.
- The UK has analysed the requirements for road monitoring and has established national plans for the deployment of monitoring equipment.
- The Nordic countries have established a comprehensive management process, including common guidelines for traffic information, incident detection, weather monitoring and CCTV camera installation and national monitoring plans.

Remaining gaps

- There is a need for some projects to identify what is **appropriate** in terms of monitoring for all roads within the TERN.
- There is a need for an assessment of what is required to complete the installation of appropriate monitoring on all roads within the TERN.

Three of the projects demonstrate strategic approaches to road monitoring. The others present the achievements as a catalogue of installations achieved and as maps of different types of monitoring installations. There are no doubt user requirements and business plans for each installation. However, the information provided by projects does not provide any indication of whether the monitoring is **appropriate** for the operational environment. There is no target deployment against which to identify remaining gaps. Projects have provided deployment plans showing the deployment of monitoring equipment, but in some cases there is no indication of the need. All projects should define target levels of deployment. This is referred to in this report as the **appropriate** level. The level for a given road will depend on operational factors and will vary from road to road. It is less important to know what that level is than whether or not the level has been achieved. If the level has not been achieved, then there should be a cost and time plan to achieve that level.

³ In all the figures for 2001-2003, the first two years (2001, 2002) are actual spend and the final year (2003) is estimated spend.

There is a requirement for all the projects to demonstrate a strategic management process which manages the production of monitoring guidelines and monitoring plans, and oversees the monitoring and reporting against the agreed plan. At present only VIKING demonstrates such a management process and provides a clear picture of the remaining deployment. CENTRICO has identified various levels of monitoring and quantified the situation for 2000, 2003 and 2006, but appears not to have identified the required level for all roads. STREETWISE has identified needs and is developing monitoring plans.

[Click here](#) to see plans in this domain for 2004-2006.

3.2 D2 - EUROPEAN NETWORK OF TRAFFIC CONTROL CENTRES

Five of the six projects have a major spending programme for the establishment of new and upgraded traffic control centres (TCCs) and traffic information centres (TICs) with advanced data communications to other centres for the purposes of providing the necessary infrastructure and procedures to provide coordinated traffic management and information services across Europe. Table 5 shows that the total spending within the TEMPO framework on domain 2 for the period 2001 – 2003 is estimated as 108 M€.

Table 5: Spending on Traffic Control Centres in the period 2001-2003 compared with the budget

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	18,052	52,712	20,377	13,549	2,945	23,913	131,548
	Current estimate	15,690	36,853	18,964	13,093	2,242	21,223	108,065
	Difference	2,362	15,859	1,413	456	703	2,690	23,483

Costs in €1000's

DATEX has provided the basis for the specification of data to be exchanged. All the projects have been working on the improvement of the TICs / TCCs in order to make them DATEX compliant (DATEX Nodes). Within the projects links have been set up between the Traffic centres for exchanging traffic data with the aim of cross-border traffic management and continuity of Traffic Information Services. In most cases 1-to-1 connections are implemented (ISDN) with relatively high communication costs. New internet-based concepts are in an early stage of deployment (OTAP, XML). The DATEX protocol needs revision in order to facilitate these new technologies. The EC has contracted a company to make this revision.

Several international links are being implemented and operational within and between MIP projects (e.g. CENTRICO – VIKING and CENTRICO – SERTI).

There are several different methods of implementation for the international exchange of traffic data. In some countries (like NL, F) there is a single centre for international exchange of traffic data. In other countries, different traffic centres handle the international exchange (Italy, Germany).

Common databases and digital maps are being developed within most of the projects to facilitate the exchange of traffic information.

Most of the projects have contributed to the DATEX community. A revised Memorandum of Understanding is being developed and is in the process of signatures. The DATEX Technical Committee has been active in solving several technical problems, in setting-up a website and establishing a helpdesk.

Main achievements for 2001-2003

- Operational TCCs in Belgium and Germany (including Brussels, Antwerp-upgraded and North Rhein Westphalia)
- Cross-border data exchange achieved in CENTRICO on about 80% of TERN routes
- Operational links between projects (CENTRICO <-> VIKING, CENTRICO <-> CORVETTE)
- Establishment of Bordeaux as the TIC for France which is responsible for all international data-exchange.
- Inter-connection of all TICs in France achieved.
- Operational DATEX connection established between Spain and France (Madrid <-> Bordeaux)
- Operational DATEX link established between England and France
- Data-exchange agreements are being set up (Austria <-> Germany, Italy <-> Germany)
- Development of digital Maps and databases
- Development of new technologies for data exchange (e.g. Internet, XML)

- Development of easy access strategies for Service Providers, including the development of OTAP – Open Traveller Information Services Access Points.
- Preparation of a revised Memorandum of Understanding for data exchange (availability and accessibility) for signature by Member States

Remaining gaps

Unfortunately there is no German strategy yet for the international exchange of traffic data.

Projects still do not demonstrate a clear strategy on the number of traffic centres required and the international exchange of traffic data.

The link between Portugal and Spain has been turned off due to high data transmission costs.

[Click here](#) to see plans in this domain for 2004-2006.

3.3 D3 - TRAFFIC MANAGEMENT SYSTEMS

Table 6: Spending on Traffic Management systems in the period 2001-2003 compared with the budget

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	1,236	70,067	26,247	3,537	19,625	38,870	159,582
	Current estimate	873	76,845	32,580	2,342	31,285	41,197	185,123
	Difference	363	-6,778	-6,333	1,195	-11,660	-2,327	-25,541

Costs in €1000's

Table 6 shows the total spending for the period 2001-2003 on Traffic Management Systems is about €185m. This is €25m more than originally planned. For all the regions traffic management plans (TMPs) have been developed and in most cases they are in operation. Special attention is given to the cross-border TMPs and long distance corridors. In some cases the Traffic Management Plans include re-routing strategies (e.g. VIKING, CENTRICO) and measures for Heavy goods traffic (transalpine area <-> CORVETTE). A start has been made in computerising the TMPs including the development of the required TMP databases.

The amount of work performed in the field of decision support systems seems to be rather low. However it might in some cases be included in the development and implementation of the control centres. The interface between urban/interurban traffic management has been recognised. New Traffic Management strategies are being developed taking into account urban/interurban dependencies.

There have been large investments in the implementation of traffic management and control systems (Line control, Motorway control, ramp metering, queue warning etc.). Only a few projects provided details (maps) of the state of deployment of these systems and the plans for the coming years (CENTRICO).

VIKING and CORVETTE have performed specific actions on safety measures in tunnels. This includes both studies and implementations.

A coordinated feasibility study was performed on the Long Distance Corridors from Ireland to North Italy. CENTRICO lead the study with support from STREETWISE and CORVETTE.

Main achievements for 2001-2003

- Large scale implementation of traffic management systems
- Development and operation of TMPs and re-routing strategies
- Studies, assessment and implementation of traffic management and control systems in tunnels
- Operational (cross-border and re-routing) corridors: Köln-Eindhoven, airport corridor Hessen, Aachen <-> Brussels, Antwerp <-> Rotterdam, Nancy <-> Brussels
- Feasibility study on Long Distance Corridors
- Studies and implementation on safety in tunnels in Alpine area
- Development of strategy on cross-border management for heavy goods transport on the transalpine TERN

Remaining gaps

Although large-scale implementation of traffic management systems has been taken place, none of the projects seem to have a clear implementation strategy. What systems to be installed where, for what reason and by when?

Apparently Portugal has not participated for the past 3 years. There is no TMP available and no concrete cross-border arrangements exist with Spain.

[Click here](#) to see plans in this domain for 2004-2006.

3.4 D4 - TRAVELLER INFORMATION SERVICES

A large-scale implementation of VMS has taken place in the projects in the last few years. Concrete implementation strategies (where, why, type of info, when) are however lacking. The spending in the period 2001-2003 by each project is shown in Table 7 and totals approximately €107m.

Table 7: Spending on Traveller Information Services in the period 2001-2003 compared with the budget

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	28,930	21,395	10,682	30,730	4,700	12,959	109,396
	Current estimate	24,620	22,967	7,409	33,363	4,410	13,852	106,621
	Difference	4,310	-1,572	3,273	-2,633	290	-893	2,775

Costs in €1000's

Apart from the text-VMS new technologies are being investigated (Graphical VMS). User acceptance and reaction are being handled seriously through a number of studies.

Although limited information exists, all projects are investing in the implementation and further development of websites and portals (only VIKING provided information on the use of their websites). The ViaEuropa portal is mentioned by some projects but not really described as a priority issue.

RDS-TMC seems to be implemented throughout all the project areas, except for Portugal. No details are provided on the deployment plan of Portugal.

Main achievements for 2001-2003

- First development of travel time services
- Websites and portals for TIS
- Large scale implementation of RDS-TMC and VMS

Remaining gaps

- There has been a lack of harmonisation of VMS activities. The newly (re-)established VMS forum should overcome this gap.
- A common strategy is lacking for the implementation of the different systems and services. Objectives need to be defined and targets should be given for the coming period.
- A lot of websites and portals are being developed. The involvement of the expected users is in general too limited. The design and content may therefore not fully match the needs, requirements and expectations of the users. There has been put a lot of effort in the development of the ViaEuropa portal. The actual status and plans for further developments are not clear.

[Click here](#) to see plans in this domain for 2004-2006.

3.5 D5 - FREIGHT AND FLEET MANAGEMENT

This is a comparatively new activity within the ITS Deployment Programme. Despite encouragement from the commission, progress has been rather disparate and lacking in European approach. There are signs of interest from various projects, but the services being considered are rather disparate. There was strong interest in the management of specific bulky or hazardous loads on sensitive roads, such as tunnels, but also in more general information services aimed at the long-distance truck driver. Table 8 shows the spending on this activity for the period 2001-2003 by project. A total of €5m has been spent, compared with a budget of over €8m.

Table 8: Spending on Freight and Fleet Management in the period 2001-2003 compared with the budget

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	1,068	218	3,694	1,257	250	1,810	8,297
	Current estimate	883	131	2,252	0	169	1,584	5,019
	Difference	186	87	1,442	1,257	81	226	3,278

Costs in €1000's

Main achievements for 2001-2003

- Several studies focussed on identifying user requirements for FFM services
- Some optimism and ideas for new FFM services to be developed
- Website for the management of freight circulation licences expected in 2003.

Remaining gaps

- Need for common approach to FFM services
- Need for strong leadership to achieve consensus on required services

[Click here](#) to see plans in this domain for 2004-2006.

3.6 D6 - ELECTRONIC FEE COLLECTION

The original budget for 2001-2003 for this domain was €6.3 million. Table 9 shows that the actual spending was €2 million. Major national policy changes in the Netherlands accounted for most of the shortfall. SERTI did not spend the allocated budget but did not report on EFC activities for 2001-2003. VIKING undertook a variety of modest local studies.

Table 9: Spending on Electronic Fee Collection in the period 2001-2003 compared with the budget

Year2	Data	Project							Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING		
2001-3	Original budget	0	4,255	200	902	500	474	6,331	
	Current estimate	0	1,049	200	35	129	566	1,979	
	Difference	0	3,206	0	867	371	-92	4,353	

Costs in €1000's

Most of the work on EFC within Europe is undertaken directly by the motorway operators and their supply base. Member States are active in promoting new schemes for charging HGVs, such as in Switzerland since 2001, and as under test in Germany and Austria and at the planning stage in the UK and Sweden. There is a great deal of policy work in Member States now that the draft EC directive on EFC has been issued and the Comite Telepeage has been created. Work undertaken within the projects has tended to be on regional policies and agreements, such as in the Nordic Countries and on specific projects. The Commission has let separate work on EFC, such as CESARE II and may let some competitive contracts which are outside the TEMPO programme.

Main achievements 2001-2003

- Work on Swedish requirements for HGV charging
- Swedish study of integration of payment for parking and road user charges
- Swedish and Finnish involvement in CESARE II
- Planning the inter-operable toll collection systems in Norway
- Workshop on HGV charging held in Stockholm in 2002

The reporting of deployment indicators is somewhat disappointing. Most of the projects declined to provide indicators as no work in this domain was being proposed. CORVETTE provided figures for Italy and VIKING provided useful figures:-

- 43% of the vehicles in Norway are fitted with OBUs.
- It is estimated that 75% of toll transactions are by EFC within the VIKING region
- 35% of the toll systems in Norway offer EFC.
- 47% of the toll transactions in Italy are by EFC
- 61% of the toll plazas in Italy are equipped with EFC

[Click here](#) to see plans in this domain for 2004-2006.

3.7 D7 - INCIDENT AND EMERGENCY MANAGEMENT

Table 10 shows the spending by project in the period 2001-2003. Projects spent a total of €20.6 million, compared with a budget of €20.9 million.

Table 10: Spending on Incident and Emergency Management in the period 2001-2003 compared with the budget

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	8,359	3,150	6,634	1,682	980	145	20,950
	Current estimate	5,727	857	10,851	2,079	1,071	88	20,673
	Difference	2,632	2,293	-4,217	-397	-91	57	277

Costs in €1000's

The majority of the investments were in ARTS and CORVETTE which used the available resources almost exclusively for the installation of emergency telephones. Other projects restricted the costs of this domain to co-ordination across countries, with all the installation costs in other domains. Plans in ARTS and SERTI to deploy an alert system based on high-speed data communications over telephone have been abandoned.

Main achievements

- Installation of many new emergency telephones in France, Spain and Portugal
- 469 telephones installed in Ital in the period 2000-2003
- Operation of an IEH Expert Group chaired by STREETWISE

Remaining gaps

- No evidence of a strategy and deployment plan – how many more phones are needed?

[Click here](#) to see plans in this domain for 2004-2006.

3.8 D8 - HORIZONTAL ISSUES

This work consists of four activities:-

- System Architecture
- Evaluation
- Enforcement
- Organisational issues

Table 11 shows the spending by projects on Horizontal issues in the period 2001-2003. A total of €5m was spent, compared with a budget of €3.8m.

Table 11: Spending on Horizontal Issues in the period 2001-2003 compared with the budget

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	237	624	838	754	510	865	3,828
	Current estimate	247	530	692	1,996	515	1,044	5,024
	Difference	-10	94	146	-1,242	-5	-179	-1,196

Costs in €1000's

Main achievements

- Establishment of Evaluation Expert Group, which has created common evaluation guidelines, reporting guidelines, an evaluation action plan and recommendations on deployment and evaluation indicators
- Evaluation reports from projects in a similar style and format
- Peer review process for evaluation reports
- System architectures developed to meet national needs within a common European framework
- Organisational arrangements for the supply of traffic data to third parties

Remaining gaps

- No common work within the programme on cross-border enforcement issues, taking account of VERA2.

[Click here](#) to see plans in this domain for 2004-2006.

4 PROPOSALS FOR 2004-2006

This section describes planned European progress by Activity for the next three years. Each domain is considered in turn. The original and revised budget is summarised, followed by recommendations for further development of the work programme for this period.

4.1 D1 - ROAD MONITORING

The proposed programme for 2004-2006

Most projects propose a continuation of the existing programme. VIKING has a well developed programme, including the necessary management process and a good focus on the work required. Tables of the extent to which the network is covered by appropriate monitoring equipment are provided. CENTRICO mentions a deployment plan for the Netherlands and a new plan to be produced for Belgium. Similar plans should be produced for France and Germany if they are to qualify for support from the European Commission. STREETWISE has also worked hard to identify the network to be equipped. The proposed work for 2004-2006 across all projects is shown in Table 12. There is a proposed increase of €15 million over the original budgets to €161 million.

Table 12: Original and revised budget for the period 2004-2006 for Road monitoring

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2004-6	Original budget	31,692	38,564	33,023	26,296	2,050	14,835	146,460
	Current estimate	39,510	42,858	33,426	27,515	4,256	13,850	161,416
	Difference	-7,818	-4,294	-403	-1,219	-2,206	985	-14,955

Costs in €1000's

Recommendations

It is strongly recommended that every project should develop a strategic plan which:-

- Identifies the user/data requirements for different operational environments
- Identifies the **appropriate** level of monitoring for each road type
- Identifies the work required to provide the appropriate level of monitoring
- Identifies the timescale and cost for the required work

All projects should implement the deployment indicator as proposed by the Commission and resubmit maps and statistics on the network length already covered by appropriate monitoring and that which has not. **The emphasis should be on the work to complete the task** of having appropriate monitoring equipment on the whole network. It is crucial to know the percentage complete now (2003) and planned for 2006.

Funding of the work should be conditional on an approved deployment plan, a method of monitoring progress and suitable management processes in place.

[Click here](#) to return to the 2001-2003 progress for the next domain.

[Click here](#) to see the recommendations for taking this domain forward in 2004-2006

4.2 D2 - EUROPEAN NETWORK OF TRAFFIC CONTROL CENTRES

In the coming years all the MIP projects intend to inter-connect all the Traffic Centres within their region. The current tendency is to move away from dedicated communications links towards new internet-based technologies. Most traffic centres need further investment to achieve this objective. The upgrades do not only concern the requirements for data exchange, as defined by DATEX, but also the implementation of the developed common databases and digital maps. Links both within and between projects will be extended. The proposed budgets for the 2004-2006 plans for the projects are shown in Table 13. These total €117m, an increase of €16m on the original estimates for 2004-2006.

Table 13: Original and revised budget for the period 2004-2006 for Traffic Control Centres

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2004-6	Original budget	13,342	28,484	14,238	12,208	3,900	28,930	101,102
	Current estimate	11,609	47,195	17,281	17,970	5,275	17,715	117,046
	Difference	1,733	-18,711	-3,043	-5,762	-1,375	11,215	-15,944

Costs in €1000's

The main European objectives for connections between the traffic centres are Cross-border traffic management and deployment of harmonised and co-ordinated Traveller Information Services across borders. For the later objective steps will be taken to make traffic data available and easy accessible for information service providers, particularly in the private sector. OTAP is one of the initiatives for realising this.

Most projects provide concrete proposals for implementation and improvement of new DATEX nodes and links. Some projects, like SERTI only provide very general information, lacking concreteness.

Apart from the technical implementation actions will be taken in order to get interchange agreements between Member States. Service Level Agreements are expected between the various road authorities and Information Service-Providers covering the availability and accessibility of traffic data.

The projects have been working in this area for many years. While there was no doubt justification at national and local level for the work, strategic information on the motivation for the forward programme is very limited within the review documents submitted. STREETWISE is a relatively new project and so has needed to develop a strategy covering the involvement of all the involved partners. This provides a good example for the other projects to follow.

The DATEX organisation (Supervisory Management Committee, Technical Committee and User Forum) will be supported by all projects although no strong motivations, arguments and needs are being formulated by the projects.

The proposed programme for 2004-2006

- Further expansion of operational links between the regions within the projects (CENTRICO, CORVETTE)
- Operational links between projects (CENTRICO <-> STREETWISE, CENTRICO <-> SERTI)
- Further development and implementation of digital maps and databases
- Further development and demonstration of the OTAP concept
- Further development and implementation of new technologies (like XML and Virtual Private Network)
- Upgrading and improvements of TICs and the operational links
- Continuation of work in DATEX Technical Committee, Supervisory Management Committee and User Forum

Recommendations

There is no evidence of a clear strategy on the development and implementation of traffic centres. The projects (Member States) should make such strategy in terms of:

- how many traffic centres they need
- where those traffic centres should be located
- what the specific role of the different traffic centres will be
- etc.

Maps should be submitted showing the network of current traffic centres and those which are planned, including the area covered by each of the centres.

In order to facilitate international exchange of traffic data Member States should identify the traffic centre(s) responsible for international exchange.

Setting up the network of traffic centres should be driven by 2 main reasons:

- a) Practical needs from operators from the perspective of (cross-border) traffic management. In this case 1-to-1 links might be most efficient since the operators can specify in detail their requirements and link must be reliable/under control
- b) Accessibility and availability of traffic data for service-providers. In this case an open platform might be the best solution. Service-providers can log in and get the data they require. The OTAP project will test this approach.

The MoU on data exchange should be signed on short term. Through this MoU Member States declare to do the utmost to make traffic data available and accessible for service-providers.

More attention should be given to the specific roles of private motorway operators regarding availability and accessibility of traffic data and service provision.

[Click here](#) to return to the 2001-2003 progress for the next domain.

[Click here](#) to see the recommendations for taking this domain forward in 2004-2006

4.3 D3 - TRAFFIC MANAGEMENT SYSTEMS

The proposed expenditure on traffic management systems is shown in Table 14. The cost of the proposed activities has increased by €43m compared with the original budget. Given the €25m increase in expenditure compared with budget during the first three years, this marks a major increase in the cost of the programme. The costs need to be justified.

Table 14: Original and revised budget for the period 2004-2006 for Traffic Management Systems

Year2	Data	ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	Grand Total
2004-6	Original budget	1,823	69,956	40,407	1,928	7,550	41,425	163,089
	Current estimate	1,452	92,355	42,017	2,987	10,639	56,645	206,095
	Difference	370	-22,399	-1,610	-1,059	-3,089	-15,220	-43,007

Costs in €1000's

However, the projects seem not to demonstrate a clear strategy. The documents submitted only provide information on what will be done but motivation and a view of the required, future situation is often lacking. There are for example no criteria giving for the implementation of traffic management systems.

In the coming period the TMPs will be further developed/improved, integrating specific events and multi-modal aspects. The TMPs will be further computerised and special training tools will be developed in order to train the operators on the use of the TMPs.

The implementation and improvements of traffic management systems will continue, although concrete strategies do not seem to be available. More attention will be given to the development and implementation of decision support systems like simulation tools and prediction models.

A demonstration is planned for the long distance corridor between Ireland and Northern Italy for which STREETWISE, CENTRICO and CORVETTE will have to work closely together.

The dependency between urban and interurban traffic management is being recognised by all the projects. This results in more and stronger coordination between motorway control centres and urban control centres.

CORVETTE and VIKING plan to perform more work on safety in tunnels. Coordination on this issue between these projects will have added value, but is not as such identified by the projects.

The proposed programme for 2004-2006

- Further developments and implementation of TMPs, with special focus on events and multi-modal aspects. At the end of the MIP the projects will have all the TMPs available and in operation.
- Further implementation of traffic management systems
- Further studies, assessments and implementations of traffic management and control systems in tunnels (e.g. Renewal and upgrade of tunnel infrastructure in CORVETTE area)
- Study, assessment and deployment decision support systems (like simulation and prediction models)
- New operational (cross-border) re-routing corridor in CENTRICO: Arnhem <-> Oberhausen, Köln <-> Koblenz, Paris Brussels, Mosel <-> Saar
- Operation of a Long Distance Corridor demonstration (Ireland <-> North-Italy)
- Training of road operators for using the TMPs
- Development of TMP for the border crossing ES <-> Portugal
- Development and implementation of decision support systems
- Investments in the urban traffic management & control systems focussing on the approaches to the TERN

Recommendations

Projects should be requested to submit concrete deployment strategies explaining which systems will be installed where and for what specific purpose. Maps should be provided visualising the current status and the planned situation for 2006.

More attention should be given to the urban-interurban interface. Projects should make transparent what the impact is of urban related activities for the TERN. In many cases it is difficult to identify the exact location since they use local names, road numbers etc. Maps should be used showing where the projects will take place and the region of impact related to the TERN.

[Click here](#) to return to the 2001-2003 progress for the next domain.

[Click here](#) to see the recommendations for taking this domain forward in 2004-2006

4.4 D4 - TRAVELLER INFORMATION SERVICES

The revised budgets for the proposed programme are shown in Table 15. The revised budget for 2004-2006 is €142.6m, an increase of €24.2m on the approved programme. The major increase is €16.5 proposed by SERTI.

Table 15: Original and revised budget for the period 2004-2006 for Traveller Information Services

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2004-6	Original budget	36,271	22,527	13,168	26,430	5,050	14,965	118,411
	Current estimate	32,889	28,280	19,429	42,914	5,267	13,840	142,619
	Difference	3,382	-5,753	-6,261	-16,484	-217	1,125	-24,208

Costs in €1000's

The projects propose to continue the developments in this domain. This mainly means further deployment of VMS and further development of TIS services (pre-trip like websites as well as on-trip). New technologies will be used like SMS, DAB, WAP and S-DSB technology (radio broadcasting via satellite by ARTS) in order to deliver the services to the end-users. For most of these new technologies the usage is however not know.

The proposed programme for 2004-2006

- Further development of (multi-modal) travel time estimation services
- Tests with traffic information through DAB
- Development and implementation of POI (Points of Interest) and Public Mobility Stations
- Further development of ViaEuropa

Recommendations

- Projects should be requested to develop a strategy for the large scale implementation of the various systems. Especially for VMS there appears to be no concrete plan.
- All projects that plan to install VMS's should participate in VMS platform in order to guarantee harmonisation
- The ViaEuropa portal is mentioned by several projects. A strategy on such a European wide portal for TIS is lacking. Action should be taken to create a clear strategy based on the requirements and needs of the users

[Click here](#) to return to the 2001-2003 progress for the next domain.

[Click here](#) to see the recommendations for taking this domain forward in 2004-2006

4.5 D5 - FREIGHT AND FLEET MANAGEMENT

Table 16 shows the original and proposed budgets for the period 2004-2006 by project. These show a marked decrease from nearly €22m to just over €11.

Table 16: Original and revised budget for the period 2004-2006 for Freight and Fleet Management

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2004-6	Original budget	1,330	265	13,354	2,449	120	4,030	21,548
	Current estimate	1,262	0	6,262	0	1,704	2,135	11,363
	Difference	67	265	7,092	2,449	-1,584	1,895	10,184

The key requirement is for the identification of some potential common European services. If the services identified to date serve national requirements, then there is little justification for European support. It is recommended that priority should be given to the establishment of an Expert Group charged with identifying European FFM services. Financial support to projects should be limited to the activities of this group until agreement is reached on common services and the way in which these will be delivered.

[Click here](#) to return to the 2001-2003 progress for the next domain.

[Click here](#) to see the recommendations for taking this domain forward in 2004-2006

4.6 D6 - ELECTRONIC FEE COLLECTION

Table 17: Original and revised budget for the period 2004-2006 for Electronic Fee Collection

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2004-6	Original budget	0	6,432	0	0	90	315	6,837
	Current estimate	0	0	868	0	0	315	1,183
	Difference	0	6,432	-868	0	90	0	5,654

From Table 17 it can be seen that the original budget for the period 2004-2006 for work on EFC was €6.8 million. The current proposed budget is €1.2 million. Only two projects have made proposals for work in 2004-2006 – CORVETTE and VIKING. The work in CORVETTE is a single Italian technical development related to Telepass. The VIKING activities are focussed on interoperability, HGV charges and integrated payments systems, and are spread across four countries, but amount to 315 k€ in total, so the resources are spread very thinly.

The lack of proposed activity for the period 2004-2006 is somewhat strange, given the importance of interoperable EFC in Europe. There are significant national developments in HGV charging in Germany, Austria, Sweden, Netherlands and France. None of these feature in the proposed programme, despite the existence of the informal Stockholm Group involving these countries. The European Commission has issued a draft EFC directive and this has generated a great deal of activity in each Member State – this is only mentioned by VIKING. The focus of European activity on EFC is in the same team within DGTREN as the TEMPO programme.

Recommendations

It is recommended that the Commission consider whether TEMPO has a role in relation to the European EFC programme. If not, then no further work in this domain should be supported through TEMPO. If it has, then a European programme of work for EFC should be agreed and implemented by all the projects.

[Click here](#) to return to the 2001-2003 progress for the next domain.

[Click here](#) to see the recommendations for taking this domain forward in 2004-2006

4.7 D7 - INCIDENT AND EMERGENCY MANAGEMENT

Table 18 shows the original and revised budgets for Incident and Emergency Management for the period 2004-2006. The original budget for 2004-2006 was €31.6 million. This has been reduced to €23.6, partly due to the transfer of major investment to other domains. The main expenditure is by ARTS and CORVETTE.

Table 18: Original and revised budget for the period 2004-2006 for Incident and Emergency Management

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2004-6	Original budget	12,223	3,614	13,155	614	1,850	165	31,621
	Current estimate	9,378	0	9,698	3,115	1,250	180	23,621
	Difference	2,846	3,614	3,457	-2,501	600	-15	8,000

The proposed programme for 2004-2006

- Installation of emergency telephones in France, Spain and Portugal
- Creation of an emergency service database
- System for reporting of accidents by mobile phone
- Continuation of the IEH Expert Group

Recommendations

There is a need for the production of strategic deployment plans for IEH. Deployment indicators showing the areas of network not covered should be produced and plans for the deployment of the remaining equipment produced. There is no way to assess the proposed work without such information.

CORVETTE should provide a specific work programme rather than a generic description of the content of the domain. There is a need for strategic deployment plans covering the CORVETTE area.

[Click here](#) to return to the 2001-2003 progress for the next domain.

[Click here](#) to see the recommendations for taking this domain forward in 2004-2006

4.8 D8 - HORIZONTAL ISSUES

The common activities of the projects on Evaluation are likely to lead to some significant evidence of real user benefits within the ITS programme. Table 19 shows the original and revised budgets for the period 2004-2006. The proposed budget is an increase of €1.3m on the original budget.

Table 19: Original and revised budget for the period 2004-2006 for Horizontal issues

		Project							
Year2	Data	ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	Grand Total	
2004-6	Original budget	240	792	697	300	435	910	3,374	
	Current estimate	201	699	1,277	890	718	925	4,710	
	Difference	38	93	-580	-590	-283	-15	-1,337	

The proposed programme for 2004-2006

- Many evaluation reports to a common style and format
- Peer review process for evaluation reports
- Updated Evaluation Guidelines
- Production and refinement of national system architecture (ARTIST, ACTIF etc)
- Development of procedures for the supply of traffic data to third parties

Recommendations

CORVETTE should be encouraged to engage fully with the activities of all the other projects in the Evaluation Expert Group.

[Click here](#) to see the recommendations for taking this domain forward in 2004-2006

5 SHAPING THE FUTURE PROGRAMME

5.1 OVERALL BUDGET

The total budgets proposed by the projects are given in Table 20 below. Expenditure for the first three years is expected to be very close to the original budget, with CENTRICO underspending significantly and STREETWISE overspending. The fact that STREETWISE has spent more money than originally expected is not surprising as STREETWISE had a very low initial budget and the project has made greater progress than originally expected. The increase in expenditure does not necessarily translate into an increased requirement for support. A full analysis of the impact of the review on the level of support is outside the scope of this report which focuses on the submissions made by projects. The Commission will wish to analyse the financial impact of these figures. A spreadsheet has been prepared giving the original budget and revised expected expenditure by domain and country for each year, broken down by studies and expenditure.

Table 20: Current estimates by projects compared with the original estimates.

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	83,615	200,378	91,798	87,044	34,115	94,465	591,414
	Current estimate	81,282	185,669	99,903	81,103	49,742	93,212	590,910
	Difference	2,333	14,709	-8,105	5,941	-15,627	1,253	504
2004-6	Original budget	98,467	176,680	131,870	72,956	22,270	107,765	610,008
	Current estimate	97,770	217,683	134,244	98,976	30,343	107,765	686,781
	Difference	697	-41,003	-2,374	-26,020	-8,073	0	-76,773
Total Original budget		182,082	377,058	223,668	160,000	56,385	202,230	1,201,422
Total Current estimate		179,051	403,352	234,147	180,079	80,085	200,977	1,277,691
Total Difference		3,031	-26,294	-10,479	-20,079	-23,700	1,253	-76,269

Costs in €1000's

Approved support for the period 2001-2003 is shown in Table 21 and amounts to €89 million. Requests for further support for 2004-2006 within the various application forms amounts to €108m, making a total support requirement of €197m.

Table 21: Approved and requested support

	ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	Total
Approved 2001-2003 expenditure	81,282	185,669	99,903	81,103	49,742	93,212	590,910
Support	11,345	25,800	13,253	15,626	5,401	17,500	88,924
Proposals for 2004-2006	97,770	217,683	134,244	98,976	30,343	107,765	686,781
Support	9,654	38,333	20,804	18,374	5,119	15,352	107,637
Revised Application forms	169,670	413,547	231,805	181,110	65,604	200,975	1,262,711
Support	20,999	64,133	34,057	34,000	10,520	32,852	196,561

5.2 ITS DEPLOYMENT IN EUROPE, GENERAL RECOMMENDATIONS

The achievements resulting from the major investment in ITS which has already taken place are recognised, but it is clear that progress towards deployment of ITS services has not met expectations. In a study, performed by the TEMPO Secretariat it was found that a new approach is required, focussing on delivery of key ITS services⁴. There is a strong need to work closely together, Member States, European Commission, operators, service providers and industry, in order to get these key services to be delivered.

It is recommended that Member States should consider creating special ITS deployment units. These would have responsibility for raising the profile of ITS, increasing its role in delivering transport policy goals, and bringing a strategic approach to bear to overcome issues such as standardisation, inter-operability, and legal and institutional arrangements, in the delivery of key ITS services.

In the same study a list of services was identified and proposed as priority ITS services including a set of proposed actions to stimulate and speed-up the deployment process. The following list of Minimum ITS Services were defined and considered to be essential, they should become available in all Member States:

- Multi-modal trip planning: Trip Planning services aim to encourage travellers to make the best choice in terms of mode of travel.

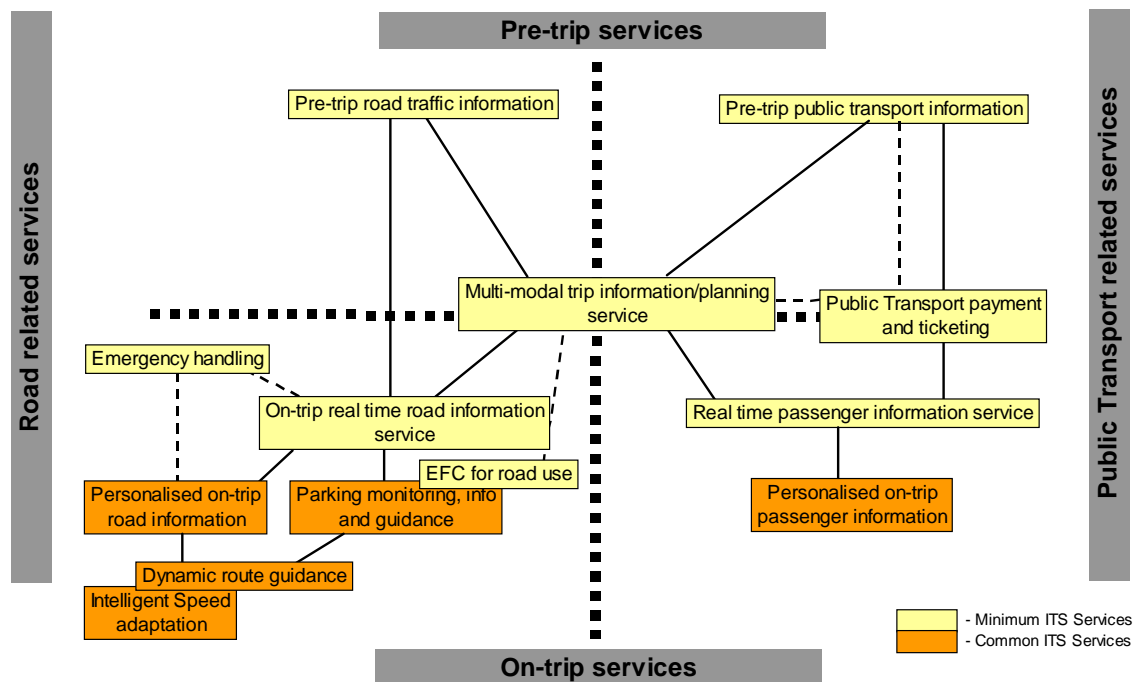
⁴ D1.3 "European ITS services", TEMPO Secretariat

- Real-time traveller information: the real-time services then optimise the journey for the traveller by reducing or avoiding delays to the network. Four services have been identified:-
 - Pre-trip road traffic information
 - Pre-trip Public Transport Information
 - On-trip real-time road information
 - Real-time passenger information
- Emergency handling: this service improves the response to problems on the network and thus improves the safety of travellers and likelihood of recovery of those injured in accidents. It also reduces delays to other network users.
- Electronic Fee Collection: this service provides for the non-stop payment of road charges throughout Europe with one set of on-board equipment in any vehicle.
- Public Transport payment and ticketing: these services reduce some of the barriers to the use of public transport by making it easier to obtain tickets and pay for travel.

Each Member State would be expected to play its part in ensuring that such agreed minimum services are implemented, by whatever delivery mechanism is appropriate locally.

Member States should provide basic traffic information and management services to meet the national requirements for safety and efficiency. Such services are:

- Monitoring of traffic (Domain 1),
- Incident detection and management (Domain 7),
- Use of dynamic road signs to inform drivers –VMS (Domain 4),
- Information to drivers on incidents and delays (Domain 4)



The more detailed recommendations given in the following paragraphs are in line with these general recommendations and the defined actions in the earlier mentioned study on the set of Minimum ITS services for Europe. The above mentioned document D1.3 “European ITS services” is currently subject for discussion with the Member States.

5.3 DOMAIN 1 - ROAD MONITORING

There has been significant progress within the projects on the deployment of monitoring infrastructure. However, despite spending €7m more than planned in the first three years, the proposed budget for 2004-

2006 is €15m more than planned. Even so, there is little or no indication of the overall cost of the remaining deployment. The “value for money” of the investment by projects is difficult to assess for the Commission. It is crucial to determine the cost of the remaining work. The current emphasis is on what has been installed. **The emphasis should be on the work to complete the task** of having appropriate monitoring equipment on the whole network.

It is strongly recommended that every project should:-

- Identify the operational environment and user/data requirements for all TERN roads
- Identify the current and the **appropriate** level of monitoring for each road. This becomes the target level for deployment.
- Identify the programme of work required to provide the **appropriate** level of monitoring on all roads – this is the target deployment
- Propose a programme of work and cost for the period 2004-2006 which is closely related to the target deployment
- Implement the deployment indicator as proposed by the Commission to report on the state of progress for 2000, 2003 and 2006 and provide maps and statistics to support the proposed programme of work and progress towards the target.
- Demonstrate a management process to monitor the deployment or road monitoring infrastructure in all partner countries in terms of progress towards the target deployment and to update the deployment indicators annually.

Expenditure on Road Monitoring infrastructure should be conditional on EC approval of a project Strategic Monitoring Plan which complies with these requirements. Once the plan is agreed assessment and approval of payment should be greatly facilitated.

5.4 DOMAIN 2 - EUROPEAN NETWORK OF TRAFFIC CONTROL CENTRES

As with Domain 1, there is a lack of any strategy for work in this domain. Given this lack of strategy, it is difficult to justify expenditure at the national level as being of benefit at the European level. In the past, there was an emphasis on the construction of TCCs and on dedicated communications links between them to create a dedicated network in order to exchange information between the centres. Some rationalisation is now evident, with national centres being linked through conventional WAN technologies with single nominated centres being responsible for international data exchange. There is also more emphasis on the supply of traffic data to external service providers for whom dedicated communications links are seldom feasible. The move towards open protocols (e.g. XML) and the OTAP developments suggest the need for work on a new strategy for the provision of traffic information to operators and information service providers across Europe.

There is a dilemma facing the European Commission. The lack of information on the precise tasks, timescales and costs tends to lead to greater demands for information. The projects provide this in a rather uncoordinated and unstructured way, without sufficient consideration of the requirement to work progressively towards a target deployment and to achieve real benefits across Europe. Progress is presented as a catalogue of isolated investments with no means of judging whether the overall programme is on track. This leads to burdensome and inefficient management. As it is not feasible for the Commission to take on the task of organising and managing the many complex tasks involved, our recommendation shifts the major responsibility from the Commission to the projects for the creation of a proper management process for the programme.

It is recommended that the projects work together on the preparation of a European Deployment Plan for traffic information. This should cover:-

- The number and locations of TCCs and TICs across Europe
- The function of these TCCs in relation to the provision of traffic information across the TERN.
- The requirements for Service Level Agreements (SLA) to make traffic information available to information service providers and road operators across Europe
- The requirements of commitments from Member States and their operators – possible by means of the MoU
- A cohesive programme of work with costs and timetables
- A process for the Management and Monitoring of the programme

The management and monitoring of the programme could be assigned to a legal entity, responsible for the delivery of the programme. Given such a plan, the role of the European Commission would be greatly reduced and would be restricted to approval of the plan, with oversight of the progress of the programme through

proper management and monitoring reports. Rather than receive a report from each of the projects on their isolated achievements, the Commission would receive a report from the managers. All issues across the projects could then be dealt with through one management interface, rather than six

5.5 DOMAIN 3 - TRAFFIC MANAGEMENT AND CONTROL

The cost of the programme of work on Traffic management and control has increased from €322m to €391m. This is 30% of the total programme. While all the work may be justified nationally, it is currently difficult for the Commission, in the face of limited resources, to make a judgement on the choice of schemes to be supported. As with Domain 2, the achievements are presented as a huge catalogue of detailed specific implementations. The need to understand what has been done leads to requests for more information, but the projects do not take sufficient notice of the Commission requirements and thus the management process is inefficient.

In addition, each of the major traffic management schemes is subject to national approval processes. These processes have sometimes resulted in schemes which are approved in the MIP programme not being approved nationally. There is a need to harmonise the approval processes at the national and international level.

It is recommended that the Commission considers some limitation of the support for traffic management schemes. This might be done in several ways.

Option 1: Approve when approved. Member States would proceed with national approval processes and submit an application to DGTREN for support only when approval to proceed has been achieved. Member States would submit details of the national justification and provide an additional European justification based on MIP priorities - alleviation of congestion, removal of bottlenecks on the TERN, cross-border traffic management, etc. This would reduce the risks within the programme. The potential drawback of this process would be to introduce a series of min-approvals rather than an annual approval process for the whole project. This would also make explicit that the Member State is the lead funding body.

Option 2: European schemes only. The Commission could restrict funding to specific (cross-border) traffic management projects which demonstrate some European added-value, such as supporting the agreed user requirements for a long-distance corridor or cross-border traffic. A deployment plan would be required showing the needs, the proposed solution, the management process, the costs and timescales. There would be an appointed project manager for the overall project, responsible for proper management reports which meet the EC requirements. Approved Traffic Management Plans would fit into this category.

Option 3: Approved deployment plans. Projects would submit a Traffic Management deployment for the whole network covered by the project. This would define the appropriate level of traffic management according to user/operator requirements, the present state of deployment, the programme for completion of the target network, and the timescales and costs. The network covered could also concern the urban- interurban interface as long as the impact on the TERN is identified. This all should again be assigned to a specific legal entity to manage and monitor.

The Commission is invited to consider these options and to select the one best suited to the requirements of the programme.

5.6 DOMAIN 4 - TRAVELLER INFORMATION SERVICES

This domain is a growing area of the programme and it is encouraging to see the strong investment of Member States in traveller information. The activities involve the installation of VMS infrastructure across the TERN and this is crucial to the delivery of most traveller information services offered by road operators. Other dissemination technologies, e.g. RDS-TMC are also progressing. Table 22 shows the estimated expenditure and proposed future budget for Traveller Information Services, compared with the original budget. The proposed increased spending for 2004-2006 compensates for some underspending in the period 2001-2003 by Portugal and Switzerland.

Table 22: Current estimates of spend on Traveller Information Services compared with the original estimates.

		Project							
Year2	Data	ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	Grand Total	
2001-3	Original budget	28,930	21,395	10,682	30,730	4,700	12,959	109,396	
	Current estimate	24,620	22,967	7,409	33,363	4,410	13,852	106,621	
	Difference	4,310	-1,572	3,273	-2,633	290	-893	2,775	
2004-6	Original budget	36,271	22,527	13,168	26,430	5,050	14,965	118,411	
	Current estimate	32,889	28,280	19,429	42,914	5,267	13,840	142,619	
	Difference	3,382	-5,753	-6,261	-16,484	-217	1,125	-24,208	
Total Original budget		65,201	43,922	23,850	57,160	9,750	27,924	227,807	
Total Current estimate		57,509	51,247	26,838	76,277	9,677	27,692	249,240	
Total Difference		7,691	-7,325	-2,988	-19,117	73	232	-21,433	

Costs in €1000's

There are several recommendations for this domain.

It is recommended that projects work together to create a European deployment plan for the various traveller information services. In particular, a deployment plan for VMS should be established and agreed by all stakeholders. The newly re-established VMS platform might be a suitable forum for taking the responsibility for the management and oversight of the plan and the monitoring process. Agreement on the information services, including the information to be displayed should be included in the plan. Deployment indicators should be implemented providing the appropriate level of VMS infrastructure and the state of deployment for 2003 and that planned for 2006.

It is recommended that projects should work together on a deployment plan for TIS portals, with particular emphasis on the business case for VIA EUROPA and related websites.

In the report D1.3 "EU-Services" published by the Tempo Secretariat also some specific recommended actions were defined in order to stimulate the deployment of TIS. In this report priority was given to Multi-modal trip planning and Real-time traveller information services.

Focussing on these priority services **it is recommended** that projects:

- Arrange for a stronger involvement of Service Providers for implementing services,
- Define technical/procedural/operational and contractual requirements for interoperability,
- Define, in dialogue with service providers, the "border" between Free Service (Basic) and Paid (Added value) Services
- Put priority on the deployment on Real-Time traveller information services and Multi-Modal trip planning

5.7 DOMAIN 5 - FREIGHT AND FLEET MANAGEMENT

It is recommended that priority should be given to the establishment of an Expert Group charged with identifying European FFM services. Financial support to projects should be limited to the activities of this group until agreement is reached on common services and the way in which these will be delivered.

5.8 DOMAIN 6 - ELECTRONIC FEE COLLECTION

It is recommended that the Commission consider whether TEMPO has a role in relation to the European EFC programme. If not, then no further work in this domain should be supported through TEMPO. If it has, then a European programme of work for EFC should be agreed and implemented by all the projects.

5.9 DOMAIN 7 - INCIDENT AND EMERGENCY HANDLING

The estimated spend to date and proposed budget for the period 2004-2006 is shown in Table 23.

Table 23: Current estimates of spend on Incident and Emergency Handling compared with the original estimates.

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	8,359	3,150	6,634	1,682	980	145	20,950
	Current estimate	5,727	857	10,851	2,079	1,071	88	20,673
	Difference	2,632	2,293	-4,217	-397	-91	57	277
2004-6	Original budget	12,223	3,614	13,155	614	1,850	165	31,621
	Current estimate	9,378	0	9,698	3,115	1,250	180	23,621
	Difference	2,846	3,614	3,457	-2,501	600	-15	8,000
Total Original budget		20,582	6,764	19,789	2,296	2,830	310	52,571
Total Current estimate		15,105	857	20,549	5,194	2,321	268	44,294
Total Difference		5,478	5,907	-760	-2,898	509	42	8,278

Costs in €1000's

Most of the investment appears to be for emergency phone installation in the ARTS and CORETTE regions.

It is recommended that strategic plans are created for the deployment of IEH technologies. In particular, deployment indicators should be provided which show which parts of the TERN are equipped with appropriate facilities, how much needs to be done, how much this will cost and the timescale for implementation.

There appears to be still no agreement regarding the E112. The development of an EC-resolution/communication on mobile phone localisation would give an impulse to this process. Emergency handling would highly benefit.

5.10 DOMAIN 8: HORIZONTAL ISSUES

It is recommended that the Commission provides continued support to the evaluation work which is on track to deliver evidence of significant user benefits from the programme.

It is recommended that the Commission considers the need for some work on cross-border enforcement, particular in view of the need for new charging systems in Germany, Austria and the UK to be able to recover revenue from non-payment of charges by foreign registered vehicles.

In the TEMPO document on European ITS services (D1.3) a specific action was identified regarding Human Machine Interfaces (HMI). It is relevant for all types of services using different technologies like WEB-portals, in-vehicle systems, etc. **It is recommended that** the Commission supports the ERPs to draft guidelines for WEB-services and to develop stronger links with industry regarding in-vehicle systems (which might result in directives).

6 INPUT FROM PROJECTS ON SIMPLIFYING MANAGEMENT OF THE PROGRAMME

Four of the projects provided suggestions: CENTRICO, CORVETTE, STREETWISE and VIKING.

Improved communication

DG-TREN is requested to provide notification to projects on requirements, timetables and reporting formats well in advance, e.g. at least four months before submission date (CENTRICO, STREETWISE, VIKING)

DG-TREN is requested to attend all project Steering Committee meetings to improve communication (especially on requirements and timetables) and reduce misunderstandings (CENTRICO, STREETWISE). It was also suggested that a fully briefed and empowered TEMPO Secretariat representative could attend in place of DG-TREN if necessary.

DG-TREN is also requested to respond sooner to input from projects.

Decision process and work plan

Annual decisions could be replaced with a binding decision for 2004 – 2006. At the start of each year, projects could provide annual status reports which would form the basis of a decision whether to continue, close the project, or continue with a modified programme (VIKING).

The agreed procedure used in VIKING in 2002 - 2003 to manage deviations could be applied throughout the programme and remove the need for annual work plans or at least enable a much simpler work plan to be produced (CENTRICO, VIKING).

Financial reporting

Two projects pointed out that the EC should bear in mind that Member States have their own rigorous financial approval and auditing processes, with the EC requirements adding an additional and apparently unnecessary burden. One project suggested that the EC could rely on national auditing and for financial management of the projects (VIKING).

Other suggestions concerning financial aspects were:

- Simplifying the template for reporting costs (CORVETTE)
- Flexible handling of budgets to allow budgets to be shifted between years (CENTRICO)
- Tighter co-ordination between the DG-TREN financial and technical units (CORVETTE)
- Raise the level of initial payment to 70% (CENTRICO)
- Hold meeting to deal with project closure, focusing on financial aspects (CORVETTE)

Simplified forms

One project suggested that the application form could be simplified and tailored to the requirements of the TEMPO programme (CORVETTE).

STREETWISE offered to discuss a revised format for preparing work plans and final reports that would be less onerous to complete but still meet EC requirements.

Improved management tools

Additional common management and reporting tools based on sound project management principles with common support tools such as maps and databases were suggested by VIKING as a way of ensuring homogeneous and timely reporting. In addition to common maps and databases, CENTRICO suggested a common glossary of technical and organisational terms, to reduce discrepancies and misunderstandings.

CORVETTE suggested using inspections and meetings to verify the implementations and results.

Organisation of work into domains, sub-domains and activities

One project suggested that three of the domains (5, 6 and 7) involve a relatively small amount of work and could be combined to reduce the workload involved in preparing reports.

VIKING suggested that the division of work into domains and sub-domains is useful for cross-fertilisation, harmonisation and monitoring deployment, but that it is difficult to report work by domains and sub-domains in the work plans because of the large amount of overlap between domains. Instead the activities could be

described separately, with a table to cross-reference them into the relevant domains and sub-domains; this is seen as an extension to the principle project reporting introduced recently.

Common European tasks

VIKING suggested the concept of common tasks for cross-fertilisation, extending the work of the European expert groups, with task definitions based on TEMPO D1.3 on European ITS Services.

Support for the TEMPO Programme

STREETWISE suggested greater involvement of the support contract (successor to TEMPO Secretariat) in future as a point of contact with the EC, and with a more active role than in the past in co-ordinating initiatives between projects (e.g. long distance corridors), disseminating results and best practice and taking a greater lead in expert groups.

7 CONCLUSIONS AND PROPOSED IMPLEMENTATION PLAN

7.1 CONCLUSIONS

After reviewing the TEMPO programme it can be concluded that there is a strong need to simplify the whole programme in order to be able to manage it.

The projects generally focus in their reporting on achievements in isolation. Given the diversity of user and operator needs across the European road network, it is impossible to compare these reported deployments. Over 90% of the programme could be managed in terms of setting target deployments for each road within the TERN and then working towards that target. Everything could then be measured and reported in a consistent manner across the programme. Management reports would be reduced dramatically.

The term "appropriate" service level has been used throughout this report. It is expected that all projects within the programme will work together to achieve a harmonised set of possible service levels within each activity. It is then for each Member State/Operator to decide what service level is appropriate for the operational conditions pertaining to a given length of TERN for which they are responsible. This should be done for all services and form a definitive target deployment. The situation at any particular date (e.g. 2000, 2003, or 2006) can then be estimated. The percentage of the TERN which has the appropriate service level can then be reported. The deployment can be displayed in map form showing where the appropriate level of service has **not** yet been reached. Reporting for the past should emphasise the percentage of the network brought up to the appropriate level and the emphasis for the future should be on bringing the remaining part of the network up to an appropriate level.

The following conclusions can be formulated, supporting the improvement of the TEMPO programme.

- The management task for key domains would be reduced substantially if there were European deployment plans which:-
 - Identify user/operator requirements
 - Specify what is the appropriate service level for each road within the TERN
 - Identify the current level of service for each road
 - Identify what needs to be done to achieve the target service level on each road
 - Estimate the cost of the programme
 - Provide schedules of work to achieve the agreed target.
- These deployment plans should be produced for:-
 - Road Monitoring Infrastructure
 - European Network of Traffic Control Centres
 - Traffic Management and Control
 - Traveller Information Services including:
 - Multi-modal trip planning
 - Real-time traveller information (Pre-trip road traffic information, Pre-trip Public Transport Information, On-trip real-time road information, Real-time passenger information)
 - Incident and Emergency Handling
- These deployment plans should draw concrete borders between public free services (basic) and commercial, paid services (added value).
- The creation of each deployment plan and the management, monitoring and reporting of the process could possibly be assigned to a nominated legal organisation. This will guarantee a strong(er) commitment.
- Deployment indicators should be prepared for each of these services showing for each length of road within the TERN:-
 - Appropriate (target) level of service
 - Roads with the appropriate (target) level of service as at 2003

- Roads with the appropriate (target) level of service as at 2006
- Cost and timescale for remaining implementation.
- EC support for the implementation of RMI, TIC, TMC and TIS domains should be conditional on
 - Commitment to the deployment plan by each Member States
 - Satisfactory reporting of actual deployment against targets. Costs should be related to the relevant length of road within the TERN. All other costs should be treated as national infrastructure costs.
- The EC should own and manage the programme of activities on EFC. The programme should be determined by DGTREN and Member States invited to participate. Support for approved European activities only would be given.
- The EC should commission the projects to work together on Freight and Fleet Management to produce an agreed set of services which can form the basis of a deployment plan as described above.
- The EC should accommodate projects related to the urban-interurban interfaces only in case the impact of these projects on the TERN is identified. This could be done by identifying parts of the network relevant from the perspective of Traffic Management but not included in the TERN.
- The EC should continue to work on the identification of further European ITS services for inclusion in the agreed deployment plans.
- The EC should discontinue the requirement for projects to report individually. They should report collectively at the domain level, with subdivisions of cost by project and country. This may mean having a domain "leader" to co-ordinate all the reporting and to distribute the support.
- The EC should take into account the remarks from the projects (chapter 6) especially those regarding the improvement of management tools.
- The EC should take into account the TEMPO document D1.3 "European ITS Services", the in that document proposed actions and the remarks received from the Member States.
- The EC should consider whether ITS deployment should be reported at the project or Member State level. Some projects simply report the deployment within the approved programme. As the ITS deployment nears completion, the reported deployment will appear to decrease. This distorts the overall statistics. It is recommended that all project reporting is done within a national context and that all reporting on ITS deployment is at the national level. All ITS deployment on the TERN should be included in the reported statistics and map displays, with an indication of whether the deployment is within the approved programme..
- The EC should stimulate Public Authorities, Service Providers and Industry to develop HMI's that fulfil the needs of the users and safeguard safety aspects. The EC might reconsider the HMI guidelines produced 4 years ago regarding in-vehicle systems.

7.2 IMPLEMENTATION PLAN

The above recommendations have been assembled into a proposed time-based implementation plan. This takes account of the fact that much of the work is already in hand and 2004 workplans are in preparation. The major policy changes are phased over a three year period to enable Member States to create the necessary institutions to engage with the European Commission in a programme of legislative actions. The changes will place more responsibility for the coordination of ITS deployment on Member States rather than projects and will focus on ITS services rather than infrastructure. The programme management function within the Commission will also be simplified.

The proposed programme is set out in Figure 1 below. The following notes provide some explanation of the steps involved.

1. 2004 Workplans focus on 4 domains (including assessment)

Projects have already made preliminary plans for the production of workplans for 2004 based on the current practice. These will be produced as planned, but with the following differences:-

- Projects will be asked to incorporate work planned for Domains 5, 6 and 7 into Domain 1-4.
- Domains 8 (Horizontal activities) and 9(Project Management) will remain as at present.
- The planned programme of work will be up to 31st Dec 2004.

This move is aimed at simplifying the assessment process, bearing in mind that Domains 1-4 represent 90% of the total programme cost. It is also aimed at moving to an annual cost reporting cycle which should enable projects to report early in the following year.

2. **2004 - 2006 workplan (including assessment)**
Projects will be asked to prepare a workplan for the three year period 2004-2006. Given the administrative load on projects at the beginning of 2004, this will be done in the second quarter of 2004 and following the submission of the 2004 workplan.
3. **2004 Legal workplan (including assessment)**
The EC decision for funding will be linked to a short version of the workplan, which will form the legal basis for the support.
4. **2004 work programme execution and deviation reporting**
The work programme for 2004 will be executed by projects. Any deviations to the agreed programme must be reported to the EC using a deviation report form. Any work which is planned but not done should be carried over to 2005 and a deviation report submitted to that effect.
5. **Implement Deployment indicators at project level**
During the second quarter of 2004, projects will be asked to implement the deployment indicators as defined by the EC. This will involve:-
 - Identifying the relevant road network within the project area (and determining the length of each road within each region/country)
 - Identifying the current level of service for each road as at 2003 (and ideally as at 2001)
 - Identifying the “appropriate” level of service for each road
 - Identifying the roads (and road length) to be brought up to the appropriate level for 2004,2005,2006
 - Reporting the statistics and associated maps to the EC

Step	2004				2005				2006				2007			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1																
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Figure 1: Proposed implementation plan

- 6. Create National ITS Deployment Teams**

It is expected that Member States will take an increasing role in decision making at the EU level on the deployment of ITS. At present, some Member States have multiple agencies dealing with ITS, with no clear national lead. During the third and fourth quarters of 2004, Member States will be asked to establish clear local arrangements for establishing a single point of contact for ITS matters. In some cases, these points of contact may coincide with current MIP project leaders. Where necessary, Member States may need to create an internal process for harmonising the views of the various regional representatives and for gathering ITS statistics at a national level.
- 7. Action (Deployment) plans to be developed**

Once the Member State ITS deployment teams are in place, the Commission will instigate a consultative process which will result in Action Plans being prepared for each of the minimum European services. This will involve all Member States and may require the establishment of specialist technical advisory groups. It is planned that this activity will take place over 6 months, beginning in the 4th Quarter of 2004.
- 8. Identify need for EC Legislation**

In parallel with the development of the ITS Action Plans, the EC will consult with Member States on the need for formal European actions to support the deployment of the agreed services. This might take the form of regulations or directives, or implementation of conditionality requirements in funding of transport infrastructure.
- 9. 2004 Project Final reports delivered (based on deployment indicators)**

The project reports for work done in 2004 will be expected to be focused on the use of deployment indicators and the progress made during 2004 as shown by the percentage of the network brought up to the appropriate standard. The reports should also reference progress made in the context of the Action Plans. The EC would be less interested in the details of the infrastructure components and design than in the quality of service delivered to end users and to operators. Given that allowed expenditure will be up to 31st December 2004, projects will be expected to deliver the final reports by the end of February 2005.
- 10. Assessment of 2004 Final reports (using workplan and deviation reports)**

The assessment of the 2004 final reports should be more straightforward, given the use of deployment indicators and reporting against an agreed action plan. The assessment will take place in March 2005.
- 11. 2005 Workplans based on deployment indicators and action plans (including assessment)**

The 2005 workplans will be simpler than those submitted previously, being focused on the location of roads which will be brought up to the appropriate service level within the year and the cost of this programme.
- 12. 2005 Legal workplan (including assessment)**

There will be a need for a legal document to be associated with the 2005 decision.
- 13. 2005 work programme execution and deviation reporting (including assessment)**

The EC will expect a closer adherence to the proposed plan than has been achieved previously. There will be a need for proper risk management and deviation reporting procedures. Member States will be expected to be closely involved with the workplan and execution of the 2005 approved programme.
- 14. Create MS ITS Committee (with decision making responsibility)**

This is a crucial point in the ITS programme. A European ITS Committee would be established with formal representation from each Member State. The Committee would oversee the Deployment programme and be involved in agreeing the associated EC actions. This action is scheduled for the end of 2004 and beginning of 2005.
- 15. Implement Deployment indicators at MS level**

Projects have performed a valuable role in dealing with bottlenecks and deficiencies in ITS services. Much of the work of the projects has been focused on ensuring continuity of services across internal EU borders. Member States have also invested heavily in ITS services which are not part of the TEMPO programme. In order to reflect the true picture of ITS service deployment, it is necessary for the deployment indicators to be implemented at a national level. The creation of national ITS deployment teams and the ITS Committee should provide the necessary organisational basis to ensure that the necessary statistics can be provided at the national level.
- 16. 2005 Project Final reports delivered (based on deployment indicators)**

These will be delivered in the first quarter of 2006. They will be based on deployment indicators on a Member State basis.

17. Assessment of 2005 Final reports (using workplan and deviation reports)

This assessment will be based on the progress made in bringing parts of the network up to the appropriate level of service.

18. MS involvement in programme approval

By mid-2005, it is expected that Member States will start to become involved, through the ITS Committee in approving the overall action/deployment plans, monitoring progress with deployment and approving annual investment programmes. It is expected that this process will lead to a reduction in the number of schemes being planned by projects that do not subsequent approval from their Member States.

19. Create Legislation programme

The Member States are expected to have the appropriate organisational structure to participate in the development of the legislative programme from mid-2005 onwards.

20. Prepare 2006 EU Service delivery plans and reach agreement at EU level

During the second half of 2005, Member States can be more involved in a process of developing the forward workplan for 2006. This will be based on delivery of ITS services. A longer timescale is envisaged to allow for national consensus building processes. The focus of the plans will be on a service by service basis.

21. 2006 Workplans based on deployment indicators and action plans (including assessment)

The 2006 workplans will be expected to be more focused on service delivery across all Member States.

22. 2006 Legal workplan (including assessment)

This will be required to support the EC Decision.

23. 2006 work programme execution and deviation reporting (including assessment)

The 2006 programme will be delivery focused.

24. 2006 Project Final reports delivered (based on deployment indicators)

The 2006 reports will be delivery focused and deal with achievements up to 31st December 2006.

25. Assessment of 2006 Final reports (using workplan and deviation reports)

The assessment of the 2006 reports will be based on the progress in delivering ITS services.

26. MIP Monitoring Report

At the beginning of 2007, it will be necessary to review the progress made during the MIP period.

27. EU ITS Service programme (legislation + delivery)

Following the MIP, there may be a further funding programme. This will involve Member States in the programme development and the EC is potential further legislation or regulation where necessary.

8 ANNEX 1: ANALYSIS OF PROJECT SUBMISSIONS TO THE MID-TERM REVIEW

8.1 THE EC REQUEST

Projects were provided with instructions on the requirements for the mid-term review. This annex provides some analysis of the quality of the response from projects.

8.2 FORMAT OF RESPONSE

Projects were asked to provide their submission for the mid-term review in a common format. This was designed to facilitate analysis and reporting across the programme. All projects except SERTI have conformed to the requirements of DG TREN in terms of layout of the submission. The lack of conformity in the SERTI report made analysis more difficult. Perhaps as a result of not following the structure requested, SERTI has not covered some key areas. The SERTI project consistently fails to recognise the need for consistency of reporting across the programme.

8.3 REVIEW OF PROGRESS AGAINST 2003 TARGETS

The review of progress within CORVETTE is extremely brief (three pages) and contains no financial information on budgets and actual costs for the period 2001-2003. The analysis lacks information for the period 2001-2003 for CORVETTE.

The review of progress within CENTRICO during 2001-2003 is three pages in length and no mention is made of 2001-2003 progress in the 2004-2006 workplan. The analysis lacks some information for the period 2001-2003 for CENTRICO, although the work on the deployment indicators was helpful in providing an appreciation of achievements.

SERTI provides a good annex on achievements but this is highly selective and reports only on three domains. Information on other domains is missing. SERTI also appears to provide information on a country basis, but does not make this clear in the text. Reported figures differ from the financial submissions, presumably for this reason.

8.4 APPLICATION OF DEPLOYMENT INDICATORS

The section on deployment indicators in CORVETTE is mostly a presentation of various tables gathering together information from different sources. It is poorly processed, poorly presented and is mostly unreadable. CORVETTE seems not to understand the purpose of the mid-term review and perhaps needs a face-to-face briefing from the EC.

8.5 REVIEW OF BUDGET 2001-2006

The review in CORVETTE is a single page. There are no figures at all for 2001-2003! All figures relate to 2004-2006. The figures are not broken down by Domain as requested. Budget and cost figures were obtained following some additional requests from the review team.

ARTS provided detailed tables for 2001-2006 broken down by domain, country and study/implementation as requested. However, it is not easy to obtain a summary at the country level. The missing information was provided on request.

The SERTI review of 2001-2006 contains no financial information for 2001-2003. There were just two pie charts showing 2004-2006 allocation by domain and country. There is no breakdown by year, country, domain, study and implementation as requested. The spreadsheet provided deals only with 2004-6. The missing figures were obtained following requests by the review team.

8.6 DETAILED PLAN FOR 2004-2006

As one might expect, all projects have addressed this aspect. In fact some of them appear to have forgotten the Mid-term review and just submitted a plan for 2004-2006.

8.7 DATA CATALOGUE

ARTS, CORVETTE and VIKING did not provide a data catalogue.

8.8 WAYS TO SIMPLIFY THE PROGRAMME

ARTS and SERTI did not provide any information, but this is not considered vital.

8.9 PROJECT PROPOSALS FOR AFTER 2006

ARTS and SERTI did not provide any information, but this is not considered vital.

8.10 APPLICATION FORMS

There were substantial discrepancies between the information submitted by projects in their mid-term review and the formal application forms. STREETWISE has since submitted a revised set of application forms which are reflected in this table. The figures for ARTS and CENTRICO need further explanation from the projects.

Table 24: Comparison of review figures with application forms (figures in €1000)

	ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING
Review submission	179,051	403,352	234,147	180,079	80,085	200,977
Application forms	169,670	413,547	231,805	181,110	80,083	200,975

9 ANNEX 2: DETAILED NOTES ON INDIVIDUAL PROJECTS BY DOMAIN

9.1 D1 - ROAD MONITORING

Table 25: Summary of estimated spend 2001-2003 and budget for 2004-2006 for Road Monitoring

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	24,322	42,777	20,210	31,989	3,525	13,280	136,103
	Current estimate	31,980	41,179	24,231	25,872	8,788	11,398	143,448
	Difference	-7,658	1,598	-4,021	6,117	-5,263	1,882	-7,344
2004-6	Original budget	31,692	38,564	33,023	26,296	2,050	14,835	146,460
	Current estimate	39,510	42,858	33,426	27,515	4,256	13,850	161,416
	Difference	-7,818	-4,294	-403	-1,219	-2,206	985	-14,955

Costs in €1000's

ARTS 2001-2003

Spent €32 million, mostly on data capture stations, CCTV cameras, weather stations, optical fibre in Spain, France and Portugal. Spain spent 2/3 of the total. Portugal spent around half of the €6.6 million budget due to organisational delays. Good deployment maps, but no information on "appropriate level" of monitoring.

ARTS 2004-2006

The project considers that the original aim of "full installation of the monitoring infrastructure in the ARTS network" by 2006 to no longer be possible. It mentions that the Portuguese operators are keen to join the project and proposes to spend €39.5 million on the continuation of activities in this domain, with around €8 million for Portugal. The programme consists of installation of fixed data capture stations (loops, video cameras, weather data collection and data communication equipment. ARTS expects to continue with studies of new monitoring technologies, such as looking at different systems for speed measurement. The use of mobile data capture will also be explored.

There is no indication of how much more work is to be done and how near the original target the project will be by 2006. There is a need for a systematic approach to the need for appropriate monitoring equipment and the creation of a monitoring plan with estimation of the work to be done and progress towards completion. ARTS needs to implement the recommendations given above in Section 5.2.

CENTRICO 2001-2003

CENTRICO has spent €41 million on road monitoring infrastructure in the period 2001-2003. The partners have defined four levels of traffic monitoring for the TERN network within the project area. There has been a significant improvement in the period 2001-2003. For example, level 1 monitoring covered 1821 kilometres in 2000 and 2353 km in 2003. The expected figure for 2006 is 3159 km. However, there was no evidence of a plan of the "appropriate level" against which one could assess the deployment.

CENTRICO 2004-2006

The proposed budget has increased by €4 million to €43 million. It is good to see a plan for Belgium proposed. There is mention of the Monitoring Implementation Plan for Netherlands, but this did not feature in the deployment indicators. There is a clear goal of completing the monitoring of the Dutch motorways. The plans in France and Germany seem less well developed. The deployment map did not show the network with **appropriate** traffic monitoring, just the different levels. These maps should be produced. CENTRICO needs to implement the recommendations given above in Section 5.2.

CORVETTE 2001-2003

CORVETTE has provided no information on "appropriate level" of monitoring. There is a mass of statistics presented in the review, none of which address the Commission requirement. The deployment maps and tables were unreadable. There is a focus on the number of deployments in each country. More attention should be given to assessing the requirements for monitoring and producing a strategic plan and target deployment.

	Austria	Italy	Germany
Traffic monitoring infrastructures	42	130	125
Weather stations	2	180	21
Camera installations	42	227	15

CORVETTE 2004-2006

The review states that activities are planned for activity 1.1(Developing monitoring plans), but there is no text or budget. There is text for 1.2 although no budget is proposed is proposed. There is adherence to the concept of completing the required installations by 2006. This implies that there is an overall strategic plan. However, there is no reference to such a plan. New activities appear to be starting up which are not foreseen. CORVETTE should analyse what needs to be done and to develop the necessary deployment indicators to assess how much progress has been made. The planned expenditure in the period 2004-2006 is €33 million. CORVETTE should implement the recommendations given above in Section 5.2.

SERTI 2001-2003

The SERTI review states that €45 million has been invested. This seems not to accord with the budget spent which is €26m. The report is not clear on the scope of the report, i.e. is the report for the SERTI area or for the countries involved. There is no information on the appropriate level of monitoring and the progress towards a target implementation.

SERTI 2004-2006

The programme for 2004-2006 is brief and incomplete. Budget figures are missing from the text. The text is general and non-specific although it includes "filling the remaining gaps". Where are these gaps? The project should develop a plan for the area and utilise the deployment indicators to show how progress is being made. SERTI needs to implement the recommendations given above in Section 5.2.

STREETWISE 2001-2003

STREETWISE spent around €9 million. The work done includes assessing levels of monitoring to meet user/data requirements and analysis of gaps in the current monitoring infrastructure. There is mention in the review of national monitoring strategies. The maps showing existing deployment are good quality, but do not show the **appropriate** traffic monitoring. The maps should show what is to be done, not what has been done.

STREETWISE 2004-2006

STREETWISE has developed the strategic plans for the various partners and expects to complete the monitoring infrastructure to meet the perceived needs by 2006. Although the budget has doubled to €4 million, this figure seems rather low in view of the late start. STREETWISE should provide more details of the user requirements and plan to complete the required work. STREETWISE should implement the recommendations given above in Section 5.2.

VIKING 2001-2003

The project spent just over €11 million. The VIKING Monitoring Plan and National Monitoring Plans are a model of good practice and should be adopted by all projects. Guidelines have been produced for traffic information, incident detection, weather monitoring and CCTV camera installation. There is a process for managing the guidelines and overseeing the deployment plans. Tables were provided of road lengths by operating environment, with percentage covered by appropriate traffic status, incident detection, travel time monitoring and road weather monitoring equipment. This was the only project which fully complied with the request.

VIKING 2004-2006

The countries in VIKING have a management process to oversee the implementation and have proposed €14 million expenditure. The text is well structured and provides a good approach to the completion of the plans.

9.2 D2 - EUROPEAN NETWORK OF TRAFFIC CONTROL CENTRES

Table 26: Summary of estimated spend 2001-2003 and budget for 2004-2006 for Traffic Control Centres

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	18,052	52,712	20,377	13,549	2,945	23,913	131,548
	Current estimate	15,690	36,853	18,964	13,093	2,242	21,223	108,065
	Difference	2,362	15,859	1,413	456	703	2,690	23,483
2004-6	Original budget	13,342	28,484	14,238	12,208	3,900	28,930	101,102
	Current estimate	11,609	47,195	17,281	17,970	5,275	17,715	117,046
	Difference	1,733	-18,711	-3,043	-5,762	-1,375	11,215	-15,944

Costs in €1000's

ARTS 2001 - 2003

Submitted report(s) is not sufficiently detailed for a full analysis of the achievements. Maps are only provided for the current situation but not for the required 2006 situation. The achievements mentioned include the following:-

- Promotion and enhancement of DATEX actions
- Updating and improvement of DATEX Nodes
- Development of TCC/TIC systems
- Datex Connection between Spain and France (Madrid – Bordeaux)
- Test Datex link ES-P (Madrid-Lisbon), disconnected due to high communication costs

Spending 2001 - 2003: 15,6M€

ARTS 2004 - 2006

The topics mentioned are as follows:-

- Improve data exchange, including investigation of new technologies such as XML
- TIC/TCC upgrading, upgrading of DATEX nodes
- Development of TCC/TIC databases
- Overview of status/existing TCC/TIC
- Development of coming Location referencing system
- Continuation of work in TC, SMC and UF

Budget: 11,6M€

All of these items are general in nature and not specific enough for the proper management of the programme. ARTS should work with all the other projects to establish a European Deployment Plan for traffic information in accordance with the recommendations given in 5.4. The proposals for work in the project within the period 2004-2006 should be set within the context of that deployment plan and managed as part of the European programme. Financial approval should depend on the Commission approval of this plan.

CENTRICO 2001 - 2003

The maps provided are of high quality and give a clear picture on the status in 2003 and expectation for 2006. The document gives a clear straightforward overview of the milestones planned and the status of these milestones. A data-catalogue is submitted providing details on the existing Traffic Centre (Coverage, Type of data, technologies etc.)

- TCC Belgium and Germany operational (including Brussels, Antwerp-upgraded and Nordrhein-Westfalen upgraded)
- New TCC in Netherlands to be established - Noord&Oost NL
- English TCC to be made operational
- Improvement of links between England, France and Flanders
- Cross-border data exchange on about 80% of TERN routes
 - NL – B (Antwerp)

- NL – DE (Köln)
- B (Antwerp) – DE (Köln)
- England – F (Bordeaux)
- DE (Köln) – F (Bordeaux)
- Luxemburg – F (Bordeaux)
- International datex links between:
 - CENTRICO (Nordrhein-Westfalen) – VIKING (Lower Saxony)
 - CENTRICO (Hessen) – CORVETTE (Bavaria)
 - English TCC – TIC/TCC Lille
 - Digital Map for Germany
- Start of OTAP initiative in order to make traffic data easy available and accessible for Service-Providers.

Spending 2001 - 2003: 36,8M€

CENTRICO 2004 - 2006

The maps provided are of high quality and give a clear picture on the status in 2003 and expectation for 2006! The document gives a clear straightforward overview of the milestones and the planned process to reach these milestones.

- Links between:
 - CENTRICO (S-England & Midlands) – Streetwise (Celtic Countries)
 - CENTRICO – SERTI
 - Between all regions within CENTRICO including
 - NL – England
 - Antwerp – England
 - Luxemburg – Namur
 - DE (Köln) – Namur
 - Etc.
- Digital map for CENTRICO area (CentroMap)
- Links between French TICs/TCCs
- German TICs operational and connected
- Further development and testing of OTAP
- *(Continuation of work in TC, SMC and UF) not mentioned concretely*

Budget: 47,2M€

CENTRICO should work with all the other projects to establish a European Deployment Plan for traffic information in accordance with the recommendations given in 5.4. The proposals for work in the project within the period 2004-2006 should be set within the context of that deployment plan and managed as part of the European programme. Financial approval should depend on the Commission approval of this plan.

CORVETTE 2001 - 2003

General remark on the report(s) submitted: Reporting quality on the progress is of poor quality. The Maps provided do not give the requested details. It is not clear from the report what has been performed until 2003 and what is planned concretely for 2004-2006? There also seems to be no consistency between the map and the text submitted.

- Data-exchange agreement between:
 - Austria (Vienna) – DE (Bavaria)
 - Italy (Rome) – DE (Bavaria)
- 3 links operational between Germany (Munich) - Italy and Austria
- Test link between Rome – Bordeaux

Spending 2001 - 2003: 18.9 M€

CORVETTE 2004 - 2006

The proposed work covers:-

- Links and interchange agreements between all TICs within the region of CORVETTE
- Implementation of TIC and TCC equipment
- Continuation of work in TC, SMC and UF

Budget: 17,2M€

The approach of CORVETTE is to manage the individual expectations and proposals of the individual road operators. This approach must be harmonised with the need to develop

CORVETTE needs to work with all the other projects to establish a European Deployment Plan for traffic information in accordance with the recommendations given in 5.4. The proposals for work in the project within the period 2004-2006 should be set within the context of that deployment plan and managed as part of the European programme. Financial approval should depend on the Commission approval of this plan.

SERTI 2001 - 2003

The report submitted by SERTI is of poor quality. It does not adhere to the content requested and does not give the required details on the achievements. It remains on general level. A data-catalogue is submitted providing details on the existing Traffic Centre (Coverage, Type of data, technologies etc.)

- Deployment of DATEX nodes
- Upgrade of 17 TCCs/TICs
- Installation of 7 new TICs/TCCs
- Bordeaux new international TIC of France for international data-exchange connected to all national TICs
- Cross-border exchange ES-F (Madrid-Bordeaux), F-UK (CENTRICO)
- Tests with cross border exchange between F-I

Spending 2001-2003: 13 M€ (within TEMPO Programme, 35M€ in total by all partners)

SERTI 2004 - 2006

SERTI provides only a high level description which is far less detailed than the submission from other projects. The topics mentioned include

- Improve cross-border data-exchange at local/regional level
- Improve data-exchange between F-I
- Installation of (more) new datex nodes
- Development of XML (Virtual Private Network)
- Upgrading TICs
- Upgrading databases
- Finalisation of procedures and agreements between operators
- Continuation of work in TC, SMC and UF
- Study regarding connectivity with SP's

Budget: 17,9M€

There is insufficient detail here to be able to approve a budget of €18m. SERTI should work with all the other projects to establish a European Deployment Plan for traffic information in accordance with the recommendations given in 5.4. The proposals for work in the project within the period 2004-2006 should be set within the context of that deployment plan and managed as part of the European programme. Financial approval should depend on the Commission approval of this plan.

STREETWISE 2001 - 2003

The submitted report provides good analyses and definition of strategy per partner. Good, clear maps are provided of the current situation. The description of the work performed is however of poor quality, lacking

details and concreteness. A data-catalogue is submitted providing details on the existing Traffic Centre (Coverage, Type of data, technologies etc.). The achievements include:-

- Start of development of OTAP
- Datex link between England - France
- Internet link between England - Wales (TIH)

Spending 2001 - 2003: 2.2 M€

STREETWISE 2004 - 2006

For the work planned for the coming year's good analysis of strategy per partner is given. The proposed tasks include:-

- Development and demonstration of OTAP
- Upgrading of TICs
- Connection between all national TICs
- (upgrade) Connection with Mainland of Europe
- Digital mapping: inclusion of Streetwise in CentroMap
- Continuation of work in TC, SMC and UF

Budget: 5,3M€

STREETWISE is of a smaller scale than most of the projects. It has developed the proposed model of deployment on a smaller scale to cover the countries within the UK and Ireland. There is a strategic approach and a common understanding of the work to be done to achieve the necessary interchange of traffic information. STREETWISE is well placed to work with all the other projects to establish a European Deployment Plan for traffic information in accordance with the recommendations given in 5.4. The proposals for work in the project within the period 2004-2006 should be set within the context of that deployment plan and managed as part of the European programme. Financial approval should depend on the Commission approval of this plan.

VIKING 2001- 2003

The documents do not provide a clear picture of the current status and the plans. The text is mixed throughout the documents. The map provided only explains whether a specific TIC is in operation or not. No planning details are included, nor the status/plans for the links indicated.

- 4 TCCs are connected
- DATEX based systems operate in 3 countries (Denmark, Sweden, Finland)
- DATEX connection tested between Sweden and Finland
- No pilot Datex node in Germany due to organisational problems
- 1 DATEX connection between VIKING and rest of Europe
- Define 2 national system architectures
- Integrated road network databases in all 5 countries

Spending 2001- 2003: 21 M€

VIKING 2004 - 2006

The map provided only explains whether a specific TIC is in operation or not. No planning details are included, nor the status/plans for the links indicated.

- Establishment of TMCs and TICs
- Establishment of DATEX network within VIKING area - 5 centres to be connected (now 4 connected)
- Cross-border connection to be achieved Sweden <-> Finland and Germany <-> Denmark.
- DATEX based systems to be established in all 5 countries, including Germany
- Combined information systems for all transport modes
- Continuation of work in Technical Committee, Senior Management Committee and User Forum

Budget: 17.7 M€ which is 11.2 M€ less than originally planned

VIKING should work with all the other projects to establish a European Deployment Plan for traffic information in accordance with the recommendations given in 5.4. The proposals for work in the project within the period 2004-2006 should be set within the context of that deployment plan and managed as part of the European programme. Financial approval should depend on the Commission approval of this plan.

9.3 D3 - TRAFFIC MANAGEMENT SYSTEMS

Table 27 provides a summary of the expected spend in the period 2001-2003 and revised budgets for 2004-2006. Projects expect to spend €185m in the period 2001-2003, an increase of €25.5m over the budget. They propose to spend a further €206m in the period 2004-2006, an increase of €43m over the budget. Some restrictions in the eligible expenditure in this domain are recommended.

Table 27: Summary of estimated spend 2001-2003 and budget for 2004-2006 for Traffic Management Systems

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	1,236	70,067	26,247	3,537	19,625	38,870	159,582
	Current estimate	873	76,845	32,580	2,342	31,285	41,197	185,123
	Difference	363	-6,778	-6,333	1,195	-11,660	-2,327	-25,541
2004-6	Original budget	1,823	69,956	40,407	1,928	7,550	41,425	163,089
	Current estimate	1,452	92,355	42,017	2,987	10,639	56,645	206,095
	Difference	370	-22,399	-1,610	-1,059	-3,089	-15,220	-43,007
Total Original budget		3,059	140,023	66,654	5,465	27,175	80,295	322,671
Total Current estimate		2,325	169,200	74,597	5,329	41,924	97,842	391,218
Total Difference		734	-29,177	-7,943	136	-14,749	-17,547	-68,547

Costs in €1000's

Several options have been provided to DGTREN on ways to limit the eligible expenditure in this domain. The feedback to projects depends on whether the Commission decides to apply one of these options.

ARTS 2001 - 2003

The submitted report(s) is not very detailed. Maps are only provided for the current situation but not for the required 2006 situation. The activities include:-

- Study on user needs for TMPs in order to improve the guidelines for TMPs
- Development, evaluation and upgrading of TMPs
- Operational TMPs for Sevilla area, France part of ARTS, border area F – ES
- Cross-border coordination Spain-France
- Development of common Database for TMPs
- No TMPs developed for Portugal!

Spending 2001 - 2003: 873 K€

ARTS 2004 - 2006

- Development of common framework for the creation and validation of TMPs, in cooperation with SERTI and CORVETTE.
- Computerisation of existing TMPs
- Development of new TMPs and required coordination with a special focus on the border-crossings (F-ES, ES-P).
- Evaluation of TMPs and updating of guidelines
- Development of training tools and simulation exercises

Budget: 1.5M€

CENTRICO 2001 - 2003

CENTRICO provided detailed maps showing the current status of TMC and expected status for 2006. Separate maps are provided for the different systems: Line control, VMS, Ramp Metering, Hard shoulder use and TMPs. Unfortunately the legend is not uniform throughout the different maps and the printing quality is not high enough.

- Operational (cross-border) re-routing corridor: Köln-Eindhoven, airport corridor Hessen, Aachen – Brussels, Antwerp - Rotterdam
- Development of TMPs on several corridors, including installation of systems: Paris Brussels, Mosel – Saar
- Operational corridor including installation of systems: Nancy – Brussels, Rotterdam -Antwerp

- Feasibility study on Long Distance Corridors
- Implementation of line control systems NL and DE (Hessen areas)
- Implementation of VMS: NL, F, England
- Implementation of Ramp Metering (NL, DE-Hessen area)
- Implementation of systems for the temporarily use (during rush-hour) of hard-shoulders (NL, DE)

Spending 2001 - 2003: 76,8M€

CENTRICO 2004 - 2006

- (further) Automation of re-routing corridor: Köln - Eindhoven, Aachen - Brussels
- Operational (cross-border) re-routing corridor: Arnhem - Oberhausen, Köln – Koblenz
- Extension of the number of operational corridors, including installation of systems: Paris Brussels, Mosel – Saar
- Operation of a Long Distance Corridor demonstration (Ireland – North-Italy)
- Further extension of network equipped with Line control systems: B (Antwerp), NL, DE (Mainz Frankfurt area)
- Further extension of network equipped with VMS: DE, F, England (all motorways in CENTRICO area)
- Further extension of network equipped with Ramp Metering (NL, DE-Hessen & Köln)
- Further extension of network equipped with systems for the temporarily use (during rush-hour) of hard-shoulders (NL, DE)

Budget: 92,4M€

CORVETTE 2001 - 2003

General remark on the report(s) submitted: Reporting quality on the progress is of poor quality. The maps provided are not giving the requested details (nothing on deployment of traffic management systems). It is not clear from the report what has been performed in the period 2001-2003 and what's planned concretely for 2004-2006? The achievements are mixed with the new plans. There also seems to be no consistency between the map and the text submitted.

- Update and validation of Traffic Management Plans
- Support to the Long Distance Corridor study (CENTRICO, STREETWISE)
- Development of strategy on cross-border management for heavy goods transport on the transalpine TERN
- Studies and deployment of tactical control systems on various parts of the TERN
- Assessment of safety impact of telematics and measures to enhance safety
- Implementation of several Traffic Management systems (no maps available) like LCS and VMS (details are lacking)
- Studies on safety in tunnels
- Implementation of "emergency-exit-navigation-lights" in Ganzsteintunnel and Pfändertunnel

Spending 2001 - 2003: 27,4M€

CORVETTE 2004 - 2006

- Traffic Management Plans
- Extension, validation and updating of TMPs, especially for the North-South transit routes
- Analysing multi-cross border scenario's (Italy, Austria, Germany, Switzerland)
- Operate pilots with TMPs
- Demonstration of Long Distance Corridor measures in coordination with CENTRICO and STREETWISE
- Prepare TMPs to be implemented in the Alpine region (to be implemented in 2006)
- Urban/interurban interfaces

- Development of Traffic Management strategies taking into account urban/interurban dependencies
- Coordination between motorway control centres and urban control centres
- Implementation of forecast devices
- Tactical Management and Control
 - Further implementation of Traffic Management systems (no maps available) like LCS and VMS (details are lacking)
- Safety issues
 - Further studies on safety in tunnels
 - Renew and upgrade of tunnel infrastructure

Budget: 42M€

SERTI 2001 - 2003

General remarks on the report(s) submitted: Poor quality of description, vague. No distinction between implementation and studies is made. The table in chapter 6 of the report is useful. It gives a clear summary/overview of the main results and plans.

- Operational TMPs for weather problems (2, including border France <-> Spain) and seasonal events (2)
- Computerisation of TMPs and integration in TCCs

Spending 2001 - 2003: 2,3M€

SERTI 2004 - 2006

- Further develop and improve TMPs
- Fostering Cross-border coordination and information exchange between:
 - Spain <-> Andorra
 - France <-> Italy
 - Germany <-> France
 - Italy <-> Switzerland
 - Germany <-> Switzerland
- Further computerisation of TMPs
- Annual exercises for important TMPs (like Alp crossing)
- Development of computerised training tool
- Organise training for road operators

Budget: 3M€

STREETWISE 2001 - 2003

High quality maps are provided but description of the work done is limited lacking concrete measurable issues.

- 3 TMPs in operation (Wales - England: Cardiff, Liverpool)
- Development of data exchange across the urban and inter-urban interfaces
- Enhanced coverage of traffic management systems (high quality maps are provided)

Spending 2001 - 2003: 31,3M€

STREETWISE 2004 - 2006

For the work planned for the coming years good analysis of strategy per partner is given however from the description it becomes not clear what actually will be performed within the scope of STREETWISE especially within the area of Urban-interurban interfaces.

STREETWISE has included VMS work in this domain. STREETWISE will actively contribute to the VMS Platform in which all ER projects will participate, future work in the MIP will see improvements in European

VMS harmonisation. The project focus will be towards pictogram harmonisation, the development of Graphical Information Panels (GRIP), and a European VMS deployment strategy for the TERN. Other main activities:

- Extension of number of cross-border TMPs with 4 (6 in total), Northern Ireland <-> Ireland, Northern Ireland <-> Scotland, Scotland <-> England (2)
- Development of systems for estimation of reliable journey times
- Further development of data exchange across the urban and inter-urban interfaces
- Investments in the urban traffic management & control systems focussing on the approaches to the TERN
- Further implementation of traffic management systems, maps included with target for 2006
- Expand the network being controlled by a TCC, maps included with target for 2006

Budget: 10,6M€

VIKING 2001- 2003

General remarks on the report(s) submitted. In the documents the current status and the plans are mixed in the text. This makes it difficult to get a clear picture and requires intense study/reading of the document. The maps provided are not detailed enough (city names are lacking) and lack a legend making it impossible to read. Especially the maps showing the area covered by operational traffic management plans are not readable and do not provide the relevant information.

- Implementation of traffic management systems, Motorway Control Systems with integrated use of VMS, lane control, ramp metering, queue warning systems, dynamic speed limit systems (legend for the maps is lacking therefore making it difficult to understand). There is no reference made on what type of systems are/need to be installed and what the required quality should be (where what?)
- Development and operation of TMPs (maps lack details, see remarks above)
- Development and operation of re-routing strategies
- Study, assess and implement traffic management and control systems in tunnels

Spending 2001- 2003: 41M€

VIKING 2004 - 2006

- Further developments of TMPs with special focus to events and multi-modal aspects
- Further implementation of traffic management systems, Motorway Control Systems with integrated use of VMS, lane control, ramp metering, queue warning systems, dynamic speed limit systems (legend for the maps is lacking therefore making it difficult to understand). There is no reference made on what type of systems are/need to be installed and what the required quality should be (where what?)
- Further study, assess and implement traffic management and control systems in tunnels
- Study, assess and deploy decision support systems (like simulation and prediction models)

Budget: 56.6 M€

9.4 D4 - TRAVELLER INFORMATION SERVICES

Projects aim to increase the spending on TIS in the period 2004-2006 by €24m compared with the approved budget.

Table 28: Summary of estimated spend 2001-2003 and budget for 2004-2006 for Traveller Information Services

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	28,930	21,395	10,682	30,730	4,700	12,959	109,396
	Current estimate	24,620	22,967	7,409	33,363	4,410	13,852	106,621
	Difference	4,310	-1,572	3,273	-2,633	290	-893	2,775
2004-6	Original budget	36,271	22,527	13,168	26,430	5,050	14,965	118,411
	Current estimate	32,889	28,280	19,429	42,914	5,267	13,840	142,619
	Difference	3,382	-5,753	-6,261	-16,484	-217	1,125	-24,208
Total Original budget		65,201	43,922	23,850	57,160	9,750	27,924	227,807
Total Current estimate		57,509	51,247	26,838	76,277	9,677	27,692	249,240
Total Difference		7,691	-7,325	-2,988	-19,117	73	232	-21,433

Costs in €1000's

There are recommendations for action by the Commission in organising the investment in TIS. The feedback to projects depends to a large extent on the outcome of the consideration of these recommendations.

ARTS 2001-2003

ARTS has spend 24,6M€ in domain over the period 2001-2003. The report(s) and maps submitted give a clear overview of what has been reached so far. The main emphases seem to have been on the deployment of VMS and travel time information services. Travel time calculation systems are being developed using new technologies like floating car data. Web-sites and portals are being developed and improved (including ViaEuropa). RDS-TMC is not available in Portugal and no details are given on the strategy of Portugal for implementing the service.

ARTS 2004-2006

For the period 2004-2006 ARTS request more budget than for the previous phase 33M€. Although the description of work to be done is long it lacks concreteness. No maps are performed showing the deployment plans until 2006. Still a lot of work is planned in the field of VMS. The added value of the user acceptance studies planned can be doubtful taking into account the amount of studies already performed in this field. ARTS will contribute to the VMS platform through which harmonisation will be reached. Some other major activities planned:

- Further development of travel time services including experimentation of co-ordinated travel time information services between national road operators and integration between urban and interurban providers
- Full scale demonstration of S-DSB technology (radio broadcasting via satellite). The public radio broadcasters from Spain, France and Portugal and the company Worldspace have been incorporated to the project as new partners in order to improve the activities in S-DSB.

CENTRICO 2001-2003

CENTRICO expects to spend 23M€ in the period 2001-2003, which is slightly more than planned (21,4M€). The maps provided give a clear picture of the status of the different systems/services and the planned coverage for 2006. Unfortunately the chosen colours for the different years are not always as clear (Real-time pre-trip information on traffic conditions). The information on the actual work performed is limited.

Travel time information services are currently available in The Netherlands, the southern part of the French region and the London ring. Already a large part of the CENTRICO network is covered with services for real-time pre-trip information on traffic conditions. By 2006 most part of the network will be covered. The whole network is already covered with RDS-TMC.

Several websites are installed by the different partners (like Hessen, Belium sites, and SANEF) all referred to through the CENTRICO Mother-Mother Homepage.

CENTRICO has actively promoted the concept of open access to traffic data for Service Providers. A TIS positioning paper was published and discussed with the other Euro-Regional projects during a Workshop in Liège (May 2002). As follow-up of the positioning paper the OTAP (Open TIS Access Point) initiative has been launched (domain 2) in close cooperation with STREETWISE.

No concrete activities have been taken place in the field of POI. The SANEF project (website access at rest areas) was put on hold.

CENTRICO 2004-2006

CENTRICO has requested a budget of 28.3 M€ for the period 2001-2006. The document(s) provided give a good, general overview of what will be done for that budget. By the end of this period

Travel time service will be available for the whole CENTRICO network. The submitted maps provide good quality information on that.

Actions are foreseen to improve the quality of the data like studies and pilots with floating car data (B). Travel time services will emerge in most of the CENTRICO countries. Especially France has already large-scale deployment plans.

Regarding the POIs France will further develop the freight community portal (Freight and fleet management?). Belgium will start working on Mobility management and multi-modal services aiming at door-to-door information. A clear description of the work/activities planned is lacking.

CORVETTE 2001-2003

CORVETTE has spent €7.4m in the period 2001-2003.

The report contains map showing the status and expectations of deployment. The maps are unfortunately of poor quality (too low resolution). RDS-TMC is now available on the whole CORVETTE network (including Austria and Switzerland). The information provided about the implementation of Travel Time service is somewhat curious. It shows that Italy was already covered 100% in 2000 and no information is included on the other countries involved.

Travel Time Information	2000	2003	2006 (forecast)
Austria	Not Available	Not Available	Not Available
Germany	Not Available	Not Available	Not Available
Italy	100%	100%	100%
Switzerland	Not Available	Not Available	Not Available

There has been a large scale implementation of VMS which will continue in the coming period.

Number VMS	2001	2003	2006 (forecast)
Austria	0	59	121
Germany	412	505	806
Italy	126	498	751
Switzerland	Not Available	Not Available	Not Available

Apart from the maps, not much detail is provided on the actual work performed.

CORVETTE 2004-2006

CORVETTE plans to spend €19,4m in the period 2004-2006. The submitted document provides enough information on the strategy and activities planned. Development of reliable travel time models and services and the further deployment of VMS are the major activities. Other activities planned:

- POI; Operation of Swiss info kiosks.
- Operation of the TIS in-vehicle information and navigation systems
- Operation of the CORVETTE TIS via Internet and telecommunication based systems

SERTI 2001-2003

Within the period 2001-2003 SERTI has spend 33M€. The reporting on the achievements is not very concrete. Maps (Availability of travel time prediction, Density of VMS, Coverage by RDS-TMC and Iso-radio, Availability of traffic information through Internet services) are provided visualising the current status of deployment. However no maps are submitted regarding the required situation for 2006. Some statistics are provided on the current status:

- around 1800 km of motorways have been covered by Iso-radio,
- the overall French and Spanish territories, North-East of Italy and Baden-Württemberg and Switzerland have been covered by RDS-TMC

- About 900 km of network provides travel time prediction,
- Real-time traffic information is available on the web for the SERTI network in France, Spain, Italy, Baden-Württemberg, Switzerland and Andorra.

Some first studies were performed for coordinated travel times between national operators. The density of VMS has been improved and studies were launched on new types of VMS. Also a lot of work has been performed in (further) development of the different websites.

SERTI 2004-2006

The new proposed budget for the period 2004-2006 is 43M€, this is substantial higher than the originally planned budget (26M€). The description of work planned is long but lacking concreteness. Maps showing the planned situation for 2006 are not submitted. Main activities planned by SERTI:

- Increase of the travel-time coverage and studies and experimentation of different technologies to provide travel time prediction in real-time
- Further development of coordinated travel time between different national road operators, resulting in first tests of coordinated travel time between cross-border road operators (South of France and Catalonia)
- Extension of the VMS coverage and harmonisation of VMS display of traffic information. Including experimentation of alternative or new kind of VMS (e.g. access VMS)
- Further development of websites and active participation in the evolution of the Via-Europa portal.
- Improvement of RDS-TMC quality

STREETWISE 2001-2003

STREETWISE spent 4.4M€ in the past period. The maps provided give a clear overview of the status of deployment of systems and services and expected status for 2006. The description of the work performed is however of poor quality. Real-time pre-trip information on traffic conditions is available for most of the STREETWISE network (except for Ireland). VMS is being deployed widely but a clear strategy seems to be lacking. STREETWISE has been active in (re-)installation of the VMS platform through which harmonisation will be reached.

The strategic road network for England, Scotland and Wales is covered by RDS-TMC provided by ITIS, a private sector service provider. There is currently no RDS-TMC for Northern Ireland or the Republic of Ireland.

STREETWISE 2004-2006

STREETWISE plans to spend 5.3 M€ in the coming period. The maps submitted give a good picture of the deployment of systems expected by 2006. However the strategy behind the plans is mostly lacking. As an example: Scotland plans to install 6 VMS per year but the locations are not decided yet. Same for NI (3 per year). STREETWISE will continue the work as started in the previous phase.

Some other main activities:

- Provide one-stop shop services for information across modes, across networks and across borders
- Develop a clear strategy exploiting Galileo
- Improvements will be made to the quality of the data in order to improve the quality of the different services. The work will be undertaken to fulfil national objectives and to support the Long Distance Corridor.

VIKING 2001-2003

Viking has spent about 14M€ over the period 2001-2003 on this domain. The maps (POI, VMS), provided give a clear indication of the current status and plans towards 2006. VIKING has developed and installed a TTIS website providing a Travel and Transport information service for Northern Europe (www.travel-and-transport.com). Route planning (internet) is available for the whole VIKING Network. In Germany a system for comparison of travel times by different modes of transport has been launched in 2002. A large spread of POI and dynamic Passenger information systems have been implemented.

The whole VIKING area is covered with RDS-TMC. The number of receivers in use is not known. Lot of test with other technologies like SMS and WAB. Several tests have been held with multi-modal services. It is however not clear how many, where and the coverage the pilots had.

All countries involved have internet services in operation:

Service	Monthly visitors in year 2000	Monthly visitors in year 2003
National portal Denmark www.trafikken.dk	0	117,000
National Portal Finland http://www.tieh.fi/alk/english/	70,000	250,000
Hamburg metropolitan area www.verkehrsinfo-hamburg.de	2,500	20,000
National portal Sweden www.vv.se	18,000	60,000
Regional portal South Sweden www.trafiknu.nu	0	25,000

VIKING 2004-2006

Budget for 2004-2006 is close to 14M€. VIKING in general plans to continue in the same line as the past few years. Maps are submitted which show the planned coverage of the different services and systems for 2006. Some main developments:

- Continuation of the VIKING Website(s)/portal(s)
- Further development of travel time estimation services
- Further develop and implementation of a multi-modal information system for VIKING network
- Development of multi-modal travel planners, Finland it is planned to include information for public transport interchanges.
- Tests with traffic information through DAB
- In Germany pilots will be launched with Public Mobility Stations

9.5 D5 - FREIGHT AND FLEET MANAGEMENT

Table 29 shows the estimated spend for the period 2001-2003, and the proposed budget for work for 2004-2006 on Freight and Fleet management. There appears to be a decrease in spending of over €13m which is significant compared to the original budget of nearly €30m.

Table 29: Summary of estimated spend 2001-2003 and budget for 2004-2006 for Freight and Fleet Management

		Project							
Year2	Data	ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	Grand Total	
2001-3	Original budget	1,068	218	3,694	1,257	250	1,810	8,297	
	Current estimate	883	131	2,252	0	169	1,584	5,019	
	Difference	186	87	1,442	1,257	81	226	3,278	
2004-6	Original budget	1,330	265	13,354	2,449	120	4,030	21,548	
	Current estimate	1,262	0	6,262	0	1,704	2,135	11,363	
	Difference	67	265	7,092	2,449	-1,584	1,895	10,184	
Total Original budget		2,398	483	17,048	3,706	370	5,840	29,845	
Total Current estimate		2,145	131	8,514	0	1,873	3,719	16,382	
Total Difference		253	352	8,534	3,706	-1,503	2,121	13,463	

Costs in €1000's

ARTS 2001-2003

Various minor studies were undertaken in the period 2001-2003. A website to manage special freight circulation licences at the local level is expected to be achieved in 2003. Work on simulating guided freight transport was completed but will not be continued. O-D matrices of heavy vehicle movements for the ARTS corridors were achieved. Expenditure was close to the budget of around €1 million.

ARTS 2004-2006

The project partners are still interested in the subject and propose various activities for 2004-2006. It is indicative of this area that three activities originally planned are discontinued and two new activities are proposed. This reflects that relatively instability of this topic. However, ARTS present several innovative ideas, including work on the use of GALILEO for tracking and tracing and protocols for exchange of information on dangerous goods vehicles between countries.

ARTS proposes work on disseminating information on traffic restrictions for freight vehicles and for a computerised system for authorising special freight transits. There are studies on action plans for accidents of HGVs. Work is proposed on user needs, functional specifications and agreements with transport companies regarding the tracking of dangerous goods vehicles. Just over €1 million is proposed. These plans look promising.

CENTRICO 2001-2003

Workplan contains a clear explanation of the situation. Little work undertaken in the period 2001-2003 and none proposed for 2004-2006.

CENTRICO 2004-2006

The small original budget is reduced to zero for the period 2003-2006. All relevant work is contained in other domains.

For work on business case support, the milestones appear not to relate to the work description.

CORVETTE 2001-2003

Original budget was €19 million for 2001-2006. CORVETTE spent around €3 million in the period 2001-2003, but does not report on achievements.

CORVETTE 2004-2006

CORVETTE originally allocated over €17 million to this activity in the period 2004-2006. The budget is now reduced to just over €9 million, which is still substantial. The total budget proposed for 2003-2006 is around €6 million. 2/3 of this is for Italy. The work includes:-

- Internet site for freight transport users in the areas of tracking and tracing
- An area-wide over-regional and multi-lingual freight information and management system for the Alpine area.

However, most of the text is a general description of the nature of the freight industry and all the issues, without proper focus on the work to be done. The work lacks focus and probably also

SERTI 2001-2003

SERTI does not include this domain in the deployment report. The original budget of €1.2 million was not spent.

SERTI 2004-2006

The original budget for this work was €2.4 million. There is no planned work in this domain for 2004-2006

STREETWISE 2001-2003

Had a budget of 250 k€ for 2001-2003 and spent 169k€. The emphasis of this work was on understanding user needs. The project feels that it is clear about the user needs and has several ideas on new services.

STREETWISE 2004-2006

Original budget for 2004-6 was 120k€ and is now €1.7 million. The objectives include improving the information for log-distance users, improving the safety and usability of the UK TERN, especially for foreign drivers and improving cross-border information. There is interest in using OTAP with freight users. The aim is to make it easier for a foreign truck driver to assess the best route, locate facilities and be informed of problems. This is an understandable and realistic aim. In the area of integration of traffic information, STREETWISE has taken on the role of promotion of best practice. This is a realistic role for government. The management and organisation of abnormal loads is a new responsibility for the Highways Agency and is a focus for the work in this domain. However, the HA has no budget! The NRA in Ireland has a significant budget but does not appear explicitly in the work programme. Overall a well-balanced and pragmatic approach to the subject.

VIKING 2001-2003

Less than half the budget for studies was used on this activity and none of the expected €2.6 million for implementation. Most of the budget was for work in Germany.

There is a new focus on the management of hazardous and bulky goods on sensitive road sections, e.g. tunnels and on the possibilities offered by the introduction of on-board equipment to support distance based HGV charging schemes

VIKING 2004-2006

VIKING has reduced plans for 2003-6 to approximately half of the original budget. VIKING proposes to undertake several two sets of feasibility studies on the topics identified within the programme, i.e. the efficiency of combined sea/road traffic by ITS schemes in ports, measures for abnormal loads and multi-modal and inter-modal services for freight operators. One target for 2006 is to implement an advanced hazardous goods transport management system. Substantial text is included in the plan but little concrete identification and implementation of services. There is recognition of the important role of the private sector, but not a clear recognition of the role of the public authorities.

9.6 D6 - ELECTRONIC FEE COLLECTION

Table 30 shows that that EFC has been taken out of the TEMPO programme by most of the projects. Only €3m has been allocated compared to the originally planned budget of €13m.

Table 30: Summary of estimated spend 2001-2003 and budget for 2004-2006 for Electronic Fee Collection

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	0	4,255	200	902	500	474	6,331
	Current estimate	0	1,049	200	35	129	566	1,979
	Difference	0	3,206	0	867	371	-92	4,353
2004-6	Original budget	0	6,432	0	0	90	315	6,837
	Current estimate	0	0	868	0	0	315	1,183
	Difference	0	6,432	-868	0	90	0	5,654
Total Original budget		0	10,687	200	902	590	789	13,168
Total Current estimate		0	1,049	1,068	35	129	881	3,162
Total Difference		0	9,638	-868	867	461	-92	10,007

Costs in €1000's

ARTS

ARTS has no EFC activities

CENTRICO 2001-2003

CENTRICO had a budget of €4.2 million in the period 2001-2003. The spending was only €1 million. CENTRICO provides no report of activities in the period 2001-2003.

CENTRICO 2004-2006

No work is proposed in CENTRICO for 2004-2006 on EFC.

CORVETTE 2001 - 2003

CORVETTE had a budget of 200k€ for 2001-2003 and spent this amount. There was no report of activities undertaken in the period 2001-2003.

CORVETTE 2004-2006

CORVETTE has submitted a budget of nearly €1m for the period 2004-2006. The budget appears to be allocated to a single operator (AUTOVIE VENETE) for the Telepass 3 project which will develop new hardware and software for use in Europe. CORVETTE states that the main aim by 2006 is to harmonise and promote a European system, including the necessary contractual arrangements, but the proposed activity appears to be a single Italian technical development.

SERTI 2001-2003

SERTI had a budget of 902k€ but spent only 35k€. There is no mention of this domain in the SERTI mid-term review.

SERTI 2004-2006

There is no mention of this domain in the SERTI mid-term review. There is no proposed budget for 2004-2006.

STREETWISE 2001-2003

The original budget for this work for the period 2001-2003 was 590k€. Spend was only 129k€. The review contains little information on the work done 2001-2003, although work on the EVIDENT project is mentioned.

STREETWISE 2004-2006

No work is planned for 2004-2006.

VIKING 2001-2003

VIKING undertook a series of national studies within the context of EFC during 2001-2003. This covered work in Sweden on specifications for HGV charging and on integration of parking and road user charges. Work on contractual interoperability was undertaken in Sweden and Finland. User attitudes to road pricing in Denmark were analysed. Finally the work on inter-operability within Norway was supported. The budget for the period was 474k€. The expected spend is 566k€. VIKING hosted a workshop on EFC in Copenhagen in 2001 and an HGV charging workshop in Stockholm in 2002.

VIKING 2004-2006

The proposed budget for 2004-2006 is modest at 315k€. This is divided between Denmark (105), Finland (60), Germany (30) and Sweden (120).

Three activities are proposed for 2004-6. These are:-

- Interoperable road charges
the aim is to sign an MOU between at least three Nordic countries by 2006 covering technical, procedural and contractual interoperability. The proposed EU directive will be studied and the NORDIC position discussed.
- HGV Road User Charges
Planning and implementation of interoperable HGV systems.
- Integrated payment systems
Implementation of integrated payment systems in different countries.

The review states that Norwegian deployment is carried out in 6.31. What is this activity?

9.7 D7 - INCIDENT AND EMERGENCY HANDLING

Table 31 shows the estimated spend for the period 2001-2003, and the proposed budget for work for 2004-2006 on Incident and Emergency Handling. Most of the budget has been spend in the period 2001-2003. For the period 2004-2006 the budget has been decreased.

Table 31: Summary of estimated spend 2001-2003 and budget for 2004-2006 for Incident and Emergency Handling

		Project							
Year2	Data	ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	Grand Total	
2001-3	Original budget	8,359	3,150	6,634	1,682	980	145	20,950	
	Current estimate	5,727	857	10,851	2,079	1,071	88	20,673	
	Difference	2,632	2,293	-4,217	-397	-91	57	277	
2004-6	Original budget	12,223	3,614	13,155	614	1,850	165	31,621	
	Current estimate	9,378	0	9,698	3,115	1,250	180	23,621	
	Difference	2,846	3,614	3,457	-2,501	600	-15	8,000	
Total Original budget		20,582	6,764	19,789	2,296	2,830	310	52,571	
Total Current estimate		15,105	857	20,549	5,194	2,321	268	44,294	
Total Difference		5,478	5,907	-760	-2,898	509	42	8,278	

Costs in €1000's

ARTS 2001-2003

The original budget for 2001-2003 was €8.4 million. The spending was €5.7 million. This was mostly allocated to the installation of emergency telephones along the ARTS corridors. This is expected to be completed during 2003

ARTS 2004-2006

The original budget for 2004-2006 was €12.2 million. The current proposal is for €9.4 million. Despite the statement within the 2001-2003 report that the installation of emergency phones will be completed in 2003, the 2004-2006 plan states that this will not even be achieved now by 2006 and this target has been modified to "harmonisation and densification" of the emergency phones. Work on DSRC based warnings has been abandoned. The original target of achieving the deployment of a global alert service with high-speed phones has been downgraded to an experiment with an alert service by 2006. The programme is still largely focussed on the installation of emergency phones. A mobile system for incident reporting will be investigated and tested. This should overcome the problems due to poor reporting of location of incidents by mobile phone users.

CENTRICO 2001-2003

CENTRICO had a budget of €3.1 million and spent €0.9 million in the period 2001-2003. The majority of the costs were incurred in Belgium, the other partners preferring to include the costs in other domain.

CENTRICO 2004-2006

CENTRICO had an original budget of €3.6 million and now plans to spend nothing in the period 2004-2006. All the work is now included in other domains.

CORVETTE 2001-2003

CORVETTE had a budget of €6.6 million and spent €8.9 million in the period 2001-2003. This appears to be mostly on emergency phones in Italy, although CORVETTE did not provide a report on the 2001-2003 achievements. The number of "SOS systems" in Italy increased from 1358 in 2000 to 1827 in 2003, though it is not clear exactly what is meant by the term "SOS system". It is presumed that this means an emergency telephone.

CORVETTE 2004-2006

The proposed budget for 2004-2006 is €9.7 million, compared with €13.2 million in the original plans for the MIP. The description of the work is completely generic and mentions no specific activities or projects. This appears to enable the motorway operators the freedom to work on any collaborative project within the scope of this domain. There appears to be no concrete plan for 2004-2006.

SERTI 2001-2003

SERTI had a budget of €1.7 million and spent €2.1 million in the period 2001-2003. SERTI did not submit a report on the achievements in this domain for the period 2001-2003.

SERTI 2004-2006

SERTI had an original budget of 600 k€ and now plans to spend €3.1 million in the period 2004-2006. The initial objective of deploying an alert service by high-speed telephone link by 2006 has been abandoned. Instead the objectives are to install the incident and emergency network and to develop incident management tools. The network consists of upgrading cabling and installing new telephone equipment. No details are given on sites and no maps of incident and emergency systems were provided.

STREETWISE 2001-2003

STREETWISE had a budget of 980 k€ and spent €1.1 million in the period 2001-2003. All the UK partners have been working on their various incident detection and management systems. A code of practice has been developed. Automatic Incident Detection has been installed at a tunnel. This activity is closely linked with the work in Domain 1 which will ensure that there is an adequate installation of appropriate traffic monitoring equipment.

STREETWISE (NI) has chaired the IEH Expert Group within TEMPO.

STREETWISE 2004-2006

STREETWISE had an original budget of €1.85 million and now plans to spend €1.25 million in the period 2004-2006. There are several specific incident and emergency systems proposed for tunnels on the motorways in North Wales (A55) and South Wales (M4). Evaluation of a video-based incident detection system on the M50 in Dublin is planned, with possibility that additional detectors may be required. The scheme may also be extended in the Greater Dublin area. There will be a study to establish a national strategy for upgrading the Scottish telephone provision to modern standards.

STREETWISE (NI) will continue to chair the IEH Expert Group within TEMPO.

VIKING 2001-2003

VIKING had a budget of 145k€ and spent 88k€ in the period 2001-2003. This activity is restricted to the common oversight and harmonisation activities for IEH, all the costs of implementation being included in the work in Domain 1 on traffic monitoring, in Domain 3 on traffic management and in Domain 7 on Freight and Fleet Management.

VIKING 2004-2006

VIKING had an original budget of 165k€ and now plans to spend 180k€ in the period 2004-2006. As for 2001-2003, this activity is restricted to the common oversight and harmonisation activities for IEH, all the costs of implementation being included in the work in Domain 1 on traffic monitoring, in Domain 3 on traffic management and in Domain 7 on Freight and Fleet Management.

9.8 D8 - HORIZONTAL ISSUES

Table 32 shows the estimated spend for the period 2001-2003, and the proposed budget for work for 2004-2006 on Horizontal Issues. For both periods (2001-2003 as well as 2004 – 2006) the budgets have been increased with more than 1 M€. SERTI takes more than 70% of this increased budget.

Costs in €1000's

Table 32: Summary of estimated spend 2001-2003 and budget for 2004-2006 for Horizontal Issues

Year2	Data	Project						Grand Total
		ARTS	CENTRICO	CORVETTE	SERTI	STREETWISE	VIKING	
2001-3	Original budget	237	624	838	754	510	865	3,828
	Current estimate	247	530	692	1,996	515	1,044	5,024
	Difference	-10	94	146	-1,242	-5	-179	-1,196
2004-6	Original budget	240	792	697	300	435	910	3,374
	Current estimate	201	699	1,277	890	718	925	4,710
	Difference	38	93	-580	-590	-283	-15	-1,337
Total Original budget		477	1,416	1,535	1,054	945	1,775	7,202
Total Current estimate		449	1,229	1,969	2,886	1,233	1,969	9,734
Total Difference		29	187	-434	-1,832	-288	-194	-2,533

ARTS 2001-2003

ARTS had a budget of 237k€ and spent 247k€ in the period 2001-2003. Main achievements quoted as report on homogenisation of system architectures at the European level. Support to the Evaluation Expert Group.

ARTS 2004-2006

ARTS had an original budget of 240k€ and now plans to spend 201k€ in the period 2004-2006. Most of the efforts will be allocated to the Evaluation Expert Group. ARTS will participate in the Systems Architecture workgroup. ARTS will continue to coordinate issues of enforcement and organisational issues, particularly concerning the MoU.

CENTRICO 2001-2003

CENTRICO had a budget of 624k€ and spent 530€ in the period 2001-2003. Support given for System Architecture work at the European level. Support given to EEG. Three projects evaluated according to guidelines.

CENTRICO 2004-2006

CENTRICO had an original budget of 792k€ and now plans to spend 699k€ in the period 2004-2006. Support for system architecture activities will continue. 12 Evaluation Reports will be written. The EEG will be supported. Work on organisational aspects of data provision e.g. OTAP will be included.

CORVETTE 2001-2003

CORVETTE had a budget of 838k€ and spent 781€ in the period 2001-2003. The work was split between Systems Architecture and Evaluation. No split of resources is available as CORVETTE did not provide a report on 2001-2003. The Italian Telematics Architecture for Transport Systems (ARTIST) was launched in 2003 and forms the basis for most of the work on Systems Architecture.

CORVETTE 2004-2006

CORVETTE had an original budget of 679k€ and now plans to spend 1,277k€ in the period 2004-2006. 925 k€ are allocated to Systems Architecture and 352k€ to evaluation. Work on ARTIST will continue on validation, communication, disseminate and promotion of the tool. On evaluation, the work consists of checking the evaluations of the existing services, installing and maintaining quality assurance and control procedures, giving feedback to operators and monitoring services. CORVETTE has not yet fully recognised the Evaluation Expert Group, not included the necessary resources to support the common work across all the projects. No explanation is given for the major increases in cost

SERTI 2001-2003

SERTI had a budget of 754k€ and spent 1,996k€ in the period 2001-2003. The work on Systems Architecture has focused on the French approach, ACTIF. There has been some cooperation with the work within CORVETTE on ARTIST, the Italian-based approach.

SERTI 2004-2006

SERTI had an original budget of 300k€ and now plans to spend 890k€ in the period 2004-2006. The description of the work in SERTI on Systems Architecture reflects similar work in CORVETTE on the dissemination of ARTIST. The distinction between the work in the two projects is not clear. There is no mention of the Evaluation expert Group and the resources for Systems Architecture and Evaluation are not specified separately.

STREETWISE 2001-2003

STREETWISE had a budget of 510k€ and spent 515k€ in the period 2001-2003. Work has focussed on system architectures for data exchange and evaluation. STREETWISE reports the linking of Wales, England and France through use of DATEX as an achievement in this domain and also support for the DATEX SMC. STREETWISE has led the Evaluation Expert Group and devoted significant resources to the production of evaluation guidelines and evaluation reports.

STREETWISE 2004-2006

STREETWISE had an original budget of 435k€ and now plans to spend 718k€ in the period 2004-2006. STREETWISE will play a key role in the development of OTAP. The work on evaluation is focussed on providing a clear business case for pan-European ITS investment. Eleven Evaluation reports will be produced according to the EEG reporting guidelines. The project will maintain an interest in the Enforcement and Organisational Issues activities.

VIKING 2001-2003

VIKING had a budget of 865k€ and spent 1,044k€ in the period 2001-2003. Finland, Norway and Sweden have worked on national ITS architectures. The strategies are based on FRAME. VIKING has strongly supported the European work on evaluation and has produced evaluation guidelines, evaluation reports and plans for future evaluation.

VIKING 2004-2006

VIKING had an original budget of 910k€ and now plans to spend 925k€ in the period 2004-2006. The work on the harmonisation of national systems architectures will continue. Further work on evaluation of ITS projects and on liaison between VIKING and the EEG. 14-20 evaluation reports will be written.

10 ANNEX 3: FIELD NAMES USED IN THE ASSOCIATED SPREADSHEETS

This report contains numerous tables which provide analyses of the financial information submitted by projects. All of this information has been entered into a spreadsheet. Table 33 provides details of the data stored in the spreadsheet. The column heading and description are given for each data field. The pivot table facility was used to produce the tables in Excel. These were then copied and pasted into this report. The spreadsheet is available for further analyses as necessary.

Table 33: Table of fields used in the associated spreadsheet

Heading	Meaning
Project	Name of the project e.g. ARTS
Domain	Acronym for the domain e.g. RMI, EFC
Dom no	Number of the domain 1-9 (to ensure ordering)
Country	Name of country e.g. Wales
Partner	Some limited breakdowns by partner were included for STREETWISE where the project did not provide overall country totals. This column is not used in the analysis.
Year	2001 - 2006
S/I	"S" for studies, "I" for Implementation
Orig bud	The original budget as defined by the projects in the mid-term review. The Commission is advised to check that these figures confirm to the original budgets as approved in the MIP decision for 2001-2006.
Curr est	This is the estimate by the project of the revised budget. It consists of actual spend for 2001 and 2002, estimated expenditure for 2003 and proposed budgets for 2004-2006.
EU Support	This is a calculated "standard" support based on 50% of the cur rest for studies and 10% of the current estimate for implementation. Figures were not available from the project submissions on support requested at this level of detail.