Catalogue

Reports and Deliverables from the DRIVE Programme

DRIVE (1989-91): Dedicated Road Infrastructure for Vehicle Safety in Europe

COMMISSION OF THE EUROPEAN COMMUNITIES

CORDIS

Directorate-General Telecommunications,
Information Market and Exploitation of Research

contents

Any queries regarding information in this catalogue should be addressed to either:

Basil Stergiou,
CEC, DG XIII/C-6,
Transport Telematics Central Office,
Tel: + 322 296 3485
Fax: + 322 396 2391

or

Richard Dodd,
ECOTEC Research and Consulting Limited,
Tel: + 44 21 616 1010
Fax: + 44 21 616 1099

This catalogue is published by the Directorate-General Telecommunications, Information Market and Exploitation of Research (DG XIII) of the Commission of the European Communities. It was compiled using the resources of the European Community's VALUE II Programme for the dissemination and exploitation of knowledge resulting from Community research and technological development programmes.

Introduction

This catalogue lists many reports and other "deliverables" that are available to the public as a result of the Commission of the European Communities' DRIVE programme - R&D in Advanced Road Transport Telematics in Europe.

Each project includes an abstract of the final report (if applicable) so that the general objectives of the projects can be understood. The entry for each item gives its title, author, source and availability details.

Addresses and ordering information are provided either under an individual project or below, under "ordering information".

This catalogue was compiled in late 1993 to cover output from the DRIVE programme (1989-91). A subsequent catalogue will present output from the Advanced Transport Telematics (ATT) programme (DRIVE's successor) which is currently under way.

Ordering Information

Reports and deliverables from DRIVE projects are available from the addresses indicated in the reference that appears under each entry. The number (1) is used as an abbreviation for the most common supplier: the Commission of the European Communities (CEC).

Documents available from CEC(1) can be obtained from the following address:

DRIVE Publications
Commission of the European Communities
c/o ECOTEC Research and Consulting,
28-34 Albert Street
Birmingham
B4 7UD
United Kingdom
Tel: + 44 21 616 1010
Fax: + 44 21 616 1099

The following information should be provided:

- ***Name of orderer and organisation***
- ***Address***
- ***Title of document(s) required***
- ***Reference number of document(s)***
- ***Quantity required***
- ***If EC-based and registered for VAT, VAT registration number and national prefix***

Prices include postage within the European Community. Orders from outside the EC should add an appropriate allowance for postage. EC-based ordering companies not registered for VAT should add VAT at the UK standard rate of 17.5% to the stated price.

Payment can be made by Eurocheque in £ Sterling, Belgian Francs, or ECU, or using an ordinary cheque if drawn on a UK or Belgian bank. Cheques should be made payable to ECOTEC Research and Consulting Limited.

Payment can also be made by credit transfer virement to either:

National Westminster Bank
Birmingham Law Courts
38 Dale End
Birmingham
B4 7NJ, UK
Code: 60.01.27
Account number: 0001922289

Banque Bruxelles Lambert
Branch Bruxelles Arts
Avenue des Arts 26
1040 Brussels, Belgium
Account number: 310.0822.49521

Documents will be dispatched within one week of receipt of order and full payment.

(An Order Form can be found on page 44)

The DRIVE Programme Objectives and Activities, and its Successor The Advanced Transport Telematics Programme

The Road Transport Sector Challenge

The rapidly growing European economy has brought with it an even more explosive growth in mobility over the last 3-4 decades.

Europeans spend more than 500 billion ECU on road transport products and services every year. More than 10% of the average family budget is devoted to transport. Car ownership has been increasing steadily by 4% a year; there are already now some 120 million cars in Europe. International traffic increases by 5% a year, whilst on main motorways freight traffic increased by more than 10% in 1990 alone. It has been estimated that 1% growth of the GNP generates 1.5% growth in passenger transportation and up to 3% growth in the transportation of goods.

Economic growth in the Community has until recently been about 2.5% per annum. Coupled with the 1992 single market freedom of movement of persons and goods, this implies that much higher increases in transport flows can be expected. The problem will become more acute for road transport, because, despite the high growth rates which have been observed, the investment for capacity improvements has suffered a reduction of about 50% between 1975 and 1986: from 1.1-1.2% of GNP to 0.6-0.7%; this tendency is still continuing.

On the other hand, the changes in economic structures of the European countries and industry are generating further inter-regional flows. New approaches to industrial production (just-in-time, flexible manufacturing) and other social developments (increased leisure time, etc) not only increase demand but also requirements for services that cannot be met by traditional approaches.

However, at this crucial period when developing the competitiveness of Europe is at the top of the agenda, the transport system faces major deficiencies: in particular, traffic congestion, accidents and environmental problems are worsening. Consequent social problems are accumulating: losses due to congestion delay in European roads are said to be around 15% of the total 500 billion ECU per annum transport costs. In the EC countries alone, approximately 55,000 people have been killed, 1,700,000 injured and 150,000 permanently handicapped through road accidents in each of the years of the 1980s. Apart from the human suffering involved, the financial cost of this has been estimated to be at least 50 billion ECU per year.

Therefore important efforts to increase capacity and performance of the networks are urgently required. Although additional roads and high quality railways are still needed to fill the missing links between the main capitals in Europe and to connect under-developed regions, there are severe obstacles to the expansion of traditional infrastructure due to scarcity of space and resources as well as for environmental reasons. Existing approaches to solving road traffic problems such as traffic management schemes, civil engineering improvements, engine management technology and Community Directives on vehicle standards are important, but have limited effect in the face of rapidly increasing road use.

The major challenge in the future, in the short term and also in the medium and long term, is the substantial improvement in utilisation and operation of transport networks, and in particular road networks, via the application of information technology and telecommunications. Investment in this "new" approach, called Advanced Transport Telematics (ATT), is required and has the potential for substantial benefits as the preliminary actions in DRIVE, EUREKA (e.g. Prometheus, Carminat) and national programmes are indicating. The services offered by Transport Telematics will determine their effectiveness and acceptability and require demonstration and testing. When proven in integrated experiments they will be the most powerful single tool to assist in the creation of a unified transport system in Europe where the "service" element across the "transport choices" will regain its appropriate primary position.

In recent years a great deal of effort has been invested in Advanced Transport Telematics research. Much of the work in this area was initiated by the Commission and has been supported through the Community Research and Development programme DRIVE (1989-1991) and the Telematics Programme (1992-1994).

The DRIVE Programme Response

As a response to these challenges the DRIVE Community R&D programme was adopted by the Council (June 1988) in order to:

- improve road safety;
- maximise road transport efficiency;
- contribute to environmental improvements.

As a result of 2 calls for proposals 72 R&D projects were supported co-financially by the DRIVE Programme, with a budget of 60m ECU for the period of 3 years (1989-1991) in the framework of the 2nd RTD Framework Programme of the European Communities.

The programme has demonstrated that innovations and cost reductions in information technology, telecommunications and broadcasting potentially offer new effective means of achieving these objectives. If brought together to provide integrated advanced communications, control and information systems they enable new, more flexible and responsive forms of traffic management and safety systems to be created to the benefit of all road users.

DRIVE envisaged a common European road transport environment in which drivers are better informed and 'intelligent' vehicles communicate and cooperate with the road infrastructure itself. The programme followed a top-down systems approach to the research and overall design of traffic management and safety systems which will represent a significant advance over those currently available.

DRIVE therefore sought to create favourable conditions for the development of an Integrated Road Transport Environment (IRTE), through pre-competitive and collaborative R&D in the field of information technology and telecommunications applied to road transport.

The importance of harmonised European standards must be stressed, for without them difficulties are put in the way of international road travel and non-tariff barriers hinder industry. Additionally, common standards will result in a unified European market for Advanced Transport Telematics products which will help to bring down the cost of equipment and stimulate the development of a large home market, thereby assisting the world competitiveness of European industry.

DRIVE brought together road users, research institutions, providers of broadcasting and telecommunications services, industry and road transportation authorities. It had developed and maintained close links with other European actions in the domain, notably those carried out under the EUREKA framework (such as Prometheus, Carminat) and COST. In particular DRIVE involved Community level action with regard to standardisation and Common Functional Specifications for advanced infrastructure systems. Such co-operation is essential in supporting the close-to-markets activities of European industry and ensuring that incompatibilities or unnecessary duplication of effort do not occur.

Since the first objectives of the DRIVE programme were defined there has been an important shift in perception. What seemed to be an excessively ambitious, almost futuristic vision has in these 3 years developed into a serious option which is considered to reach the market in the course of the next 5 years. The collaboration of the sector actors in the framework of DRIVE is acknowledged as having been successful both in the technical results as well as in the contribution to reducing the uncertainties of moving towards the implementation of ATT systems.

The Advanced Transport Telematics (DRIVE II) Programme

Following the adoption by the Council in 1991 of the Telematics of General Interest Programme as part of the 3rd RTD Framework Programme of the European Communities, the second phase of the DRIVE Programme was initiated under the more relevant title of ADVANCED TRANSPORT TELEMATICS SERVICES (1992-1994). Following the call for proposals in the summer of 1991, 57 projects were accepted for co-financing by the new

Programme with a total budget of 124m ECU. The R&D orientation of the DRIVE Programme was shifted correspondingly from "Exploring Options" to "Validation of Results".

The high level objectives of the DRIVE programme of improving road safety, maximising road transport efficiency and contributing to environmental improvement by research and development on Telematics technologies and systems continue to be fundamental for the new action as well. However, due to the achievements of DRIVE, the more specific objectives of the new programme are to:

- Establish a framework which will validate and improve results achieved so far in DRIVE and EUREKA, to assist decision makers - administrations and industry - in their future actions on implementation.
- Establish common functional specifications and promote standards which meet user needs and provide a basis for innovation and competition, concentrating on those which need European co-ordination and contribute to the completion of the single market.
- Continue R&D work in some promising areas for the development of new technologies related to the Programme.

Other secondary targets of the ATT Programme were:

- Promote confidence in Advanced Road Transport Telematics service amongst service providers, regulators and users, having particular regard to all aspects of safety.
- Advance ATT technologies in selected areas where these hold promise of success, complementary to the achievements so far, and which require further development and validation during the new programme cycle.
- Encourage the development of administrative, legal and financial procedures and advice to enable the adoption of ATT systems which are compatible internationally.

The work in the programme should additionally promote:

- Assurance of the necessary inter-operability of equipment and comprehensibility of services.
- Development of the interfaces with the other modes of transport, via appropriate information systems, in an architecture which will allow the integration of services by all modes of transport.
- Provision for applicability and transfer of results to lesser developed regions of the Community.

Following the financial strengthening of the 3rd Framework Project a second call for proposals was launched in June 1993. The new projects - limited in number - start work in January 1994. The total EC budget following the strengthening for this domain of work is 140m ECU. Characteristic of the programme is the high involvement of local, regional and National Authorities responsible for transport, which have offered the Test beds for the validation of RTD results.

The Political/Strategic Response of the Transport Telematics Programme

DRIVE, as the predecessor of the current Advanced Transport Telematics programme, was conceived from the outset with a vision towards implementation throughout Europe of the successful developments supported by the Community. It was clear from the beginning that this would be achieved only with the full co-operation and understanding of intermediate and final users, industrial suppliers, and administrations at all levels - national, regional and urban - in their complementary capacities as investors, operators and regulators. Close liaison is maintained between the Transport Telematics Office of the Commission, and the European Conference of Ministers of Transport, through its ad-hoc group on Transport, Computers and Telecommunications. Strong support has been given to the formation of a non-profit company, ERTICO, whose purpose is to bring together all of the various classes of sector Actors whose co-operation is needed if the implementation of the new technological advances is to proceed quickly and efficiently. Progressively closer links are being forged between the various services of the Commission, jointly with the representatives of the Member States with whom they work: notably in the fields of Community policies on transport, industry, energy and the environment. Particular importance is given to the potential support for investment on key routes which may become available from the Community budget for the Trains-European Networks on transport and telecommunications. The establishment of the

Cohesion Fund following the Treaty of Union in December 1991 will also enhance opportunities for implementation in the less-favoured and peripheral regions of the Community. The Community's partners in the member countries of the European Free Trade Association are being brought ever closer into the collaborative process as a consequence of the creation of the European Economic Space.

The World Market in Advanced Transport Telematics Products and Solutions

We are already faced with a situation where European, US and Japanese industrial actors and governmental interests are competing with one another to be the first to supply the newest ATT solutions to the marketplace. In Japan 200,000 cars with autonomous navigation systems have already been sold, and in America a major co-operative R&D implementation programme with strong financial backing from Congress has been launched. Each has initiated a concertation framework to co-ordinate the various actions in which users, industry operators and authorities still be involved (VICS in Japan, IVHS in America).

In Europe the development of ATT is already under the way in conventional automotive functions for cars. Interdependent developments in component miniaturisation, fixed network telecommunications, and mobile telecommunications services, will be key enabling elements of ATT.

As the number of vehicles increases, it will be reasonable to assume more interaction within the systems and consequently more benefits. In this context, there might be the possibility that the sales of ATT services will be much higher than sales of ATT systems. In fact, the demand for inter-active driver information, navigation, and safety systems might lead, in 20 years' time, to 90% of the likely 190 million European vehicles being equipped with processors, communications and interface devices.

The implementation of ATT will affect the markets for route guidance and fleet management systems and services, as well as the market for automatic debiting, driver information, traffic management and traffic control services. The DRIVE Infrastructure Group of national experts (DRIG) concluded that by the year 2010 the market for ATT equipment will be 50 billion ECU with a further 10 to 15 billion ECU market for ATT infrastructure equipment[1].

The size and timing of these investments imply an increase in market integration, based on the vertical linkage of ATT systems and finance, with information and communications companies on one side, and with national and regional administrations, the automobile industry, insurance companies and radio stations and telecom networks on the other.

The Need for European Collaboration

DRIVE has already done much to promote collaboration and to bring order to the diversity of parallel developments in Advanced Road Transport Telematics in Europe. Nevertheless, there are still many separated hardware and software initiatives in different countries. Corporate users such as big fleet operators are starting to invest in incompatible systems.

Transport patterns on road infrastructure are changing rapidly and they do not take into account national borders. This makes the operation of on-vehicle equipment installed with minimum common functionality a high priority in all regions and cities in Europe. The telematics and automobile industries are already well aware of these aspects, but this awareness is only a first step and much more effort is required to arrive at an approach where compatible solutions acceptable to European citizens and industry are found.

However, the rapid technological changes and differences in user requirements represent a major challenge to achieve a satisfactory level of European compatibility and inter-operability. The collaboration in the development of common functional specifications and European standards is essential for the development of a compatible network for all services in an "open" system. This requires appropriate flexibility in the integration of existing and new developments in the stages of testing and implementation at different national/regional environments. The different situations and problems at both the technical and institutional level must be taken into account allowing sector actors - and in particular local, regional and national authorities

[1] DRIVE Document XIII/F/DR 3071 - Integrated Road Safety Information and Navigation System (IRIS)

responsible for the infrastructure - to decide their investment and strategies. A common conceptual framework and agreement on basic principles at European level is a pre-requisite for meeting user requirements, fair competition and the management of risks of the considerable investments required. System operators and users consider competition between equipment suppliers at European level as an essential pre-requisite for maintaining the necessary system flexibility.

Investors in the new ATT programme need to see how they will be working towards a consistent set of concepts for the engineering, verification and implementation of successful solutions. The ATT (DRIVE II) programme is sufficiently detailed, although it does not constrain unduly the options offered. It provides a framework permitting the work to be seen in the context of applying the results of R&D.

List of DRIVE Projects Included in the Catalogue

V1001: BARTOC
Bus Advanced Real Time Operational Control

Final Report (Specification of the Demonstration Project)
Contractors: Dimetronic S.A., Renault Vehicles, Transurb Consult, CGA-HBS, INRETS, STGA, RATP
Ref: V1001/Fin
Publication Date: February 1991
Available from: CEC(1)
Pages: 83 **Price:** 8.5 ECU

Over the last 10 years, VSCS (Vehicle Scheduling and Control Systems) have demonstrated their ability to decrease the cost of public transport and to improve its efficiency and attractiveness for all those involved; local authorities, operators, drivers and passengers. The BARTOC (Bus Advanced Real Time Operational Control) project took account of current experience of existing VSCS and their perceived advantages, together with previous European studies on this topic, in order to define and specify a new generation of more efficient, less expensive VSCS, including new architecture guidelines and subsystems.

The following deliverables are also available from CEC(1):

Name: *Bus-Advanced Real Time Operational Control*
Authors: BARTOC Consortium
Ref: V1001/5.1
Publication Date: April 1990
Pages: 32 **Price:** 5 ECU

Name: *Bus-Advanced Real Time Operational Control*
Authors: BARTOC Consortium
Ref: V1001/5.2
Publication Date: May 1990
Pages: 68 **Price:** 8.5 ECU

Name: *On Board Subsystem*
Authors: BARTOC Consortium
Ref: V1001/5.3
Publication Date: Oct 1990
Pages: 165 **Price:** 13 ECU

Name: *Fixed End Subsystems*
Authors: BARTOC Consortium
Ref: V1001/5.5
Publication Date: October 1990
Pages: 107 **Price:** 10 ECU

Name: *On the Street Subsystems*
Authors: BARTOC Consortium
Ref: V1001/5.6
Publication Date: October 1990
Pages: 98 **Price:** 8.5 ECU

V1002: SMILER
Short Range Microwave Links: Present and Future

Final Report (Synthesis)
Contractors: CGA-HBS; University of Lille USTL; INRETS Cresta; SFIM, Fondazione G.Marconi; Marconi Italiana; SMA; Swedish Institute of Microelectronics; TST; Siemens
Ref: V1002/9
Publication Date: December 1990
Available from: CEC(1)
Pages: 54 **Price:** 8.5 ECU

The SMILER project assessed the feasibility and performance of short range microwave links (below 500m) for road to vehicle communications, vehicle to vehicle communications and anti-collision radar. The work programme included surveys of the state of the art and frequency allocations, evaluation of short range road vehicle links in the 1-10 GHz band, and comparison of centimetric microwave links with other technologies. Feasibility studies concerned a low cost front end for anti-collision radar, evaluation of communication at millimetric frequency bands, and a unified microwave link designed for low cost components.

The following deliverables are also available from CEC (1):

Name: *Frequencies Allocations*
Authors: SMILER Consortium
Ref: V1002/2
Publication Date: July 1990
Pages: 42 **Price:** 5 ECU

Name: *Medium-range Links Requirements*
Authors: SMILER Consortium
Ref: V1002/5 (WP 5)
Publication Date: October 1989
Pages: 114 **Price:** 10 ECU

V1003: VAMOS
Requirements and System Specification for Dynamic Traffic Messages

Final Report

Contractors: MIZAR Automazione; Steierwald Schonharting und Partner; Heusch Boesefeldt; TU Hamburg-Harburg; KRONE; TRRL; ESACONTROL; TU München
Ref: V1003/Fin
Publication Date: April 1991
Available from: CEC (1)
Pages: 155 **Price:** 13 ECU

The following deliverable is also available from CEC (1):

Name: *Executive Summary*
Authors: VAMOS Consortium
Ref: V1003/Exe
Publication Date: April 1991
Pages: 12 **Price:** 5 ECU

V1004: DREAM
A Feasibility Study for Monitoring Driver Status

Final Report

Contractors: TÜV Rheinland; BMW; LPPE-CNRS; Renault; VOLVO; University of Groningen
Ref: V1004/D3
Publication Date: August 1990
Available from: CEC (1)
Pages: 65 **Price:** 8.5 ECU

The aim of the DREAM project was to find an approach by which to identify a driver and his normal driving behaviour. A comparison of current behaviour with the normal pattern could then identify safety-relevant levels of driver stress, fatigue, alcohol or drug consumption. This aim requires the development not only of reliable physiological or psychological methods to determine driver performance, but also of comfortable in-car measurement techniques derived directly from the driver's actions in controlling the vehicle. These actions include steering strategies, gas pedal position, time constants of driver movements, and force on the brake pedal.

The following deliverables are available from CEC(1):

Name: *Executive Summary*
Authors: DREAM Consortium
Ref: V1004/Exe
Publication Date: July 1990
Pages: 4 **Price:** 2.5 ECU

Name: *Monitoring Driver Status: State-of-the-Art*
Authors: D.B.Thomas, K.A.Brookhuis et al.
Ref: V1004/1
Publication Date: September 1989
Pages: 65 **Price:** 8.5 ECU

V1005: PREDICT
Pollution Reduction by Information and Control Techniques

Final Report (Revised)

Contractors: Castle Rock Consultants, Organisation of Athens, Costas Abacoumkin and Associates, Epsilon International, Intracom
Ref: V1005/Fin
Publication Date: January 1992
Available from: Peter Davies, Castle Rock Consultants, Heathcoat Building, Highfields, Science Park, Nottingham NG7 2QJ
Tel: +44 602 430830 Fax: +44 602 430823
Pages: 201 **Price:** 200 ECU

The project aims at developing schemes for reducing environmental pollution in Central Business Districts through use of RTI-based traffic operation and control measures; and to appraise the implications for vehicle technologies of potential future air quality standards in an RTI-based transport environment. This involves monitoring and prediction of pollution levels and coordination with existing CEC and individual EC nation efforts to set appropriate standards. Development of alternative RTI-based control strategies and evaluation of their effects on pollution levels using a model suite with four interactive elements of assignment model, traffic model, emissions model and dispersion model, are focused on.

The following deliverables are also available from Peter Davies, Castle Rock Consultants:

Name: *Model Specification and Refinement*
Authors: PREDICT Consortium
Ref: V1005/2
Publication Date: September 1989
Pages: 109 **Price:** 200 ECU

Name: *HEALTH: Human Health Effects Module*
Authors: Intracom, Costas Abacoumkin & Associates, Organisation of Athens, Epsilon
Ref: V1005/5
Publication Date: September 1989
Pages: 90 **Price:** 200 ECU

Name: *Report on Quantitative Aspects of Human Health Effects*
Authors: PREDICT Consortium
Ref: V1005/6
Publication Date: April 1990
Pages: 76 **Price:** 200 ECU

Name: *Benefit Assessment*
Authors: PREDICT Consortium
Ref: V1005/9
Publication Date: December 1990
Pages: 123 **Price:** 200 ECU

Name: *Demonstration Project Planning*
Authors: PREDICT Consortium
Ref: V1005/10
Publication Date: December 1990
Pages: 141 **Price:** 200 ECU

V1006: DRIVAGE
Factors in Elderly People's Driving Abilities

Final Report (Synthesis)
Contractors: Dept. of Geography, King's College, University of London; Dept. of Electrical and Electronic Engineering, King's College, University of London; University of Groningen
Ref: V1006/10
Publication Date: May 1992
Available from: CEC(1)
Pages: 22 **Price:** 5 ECU

The driving capacities and limitations of elderly drivers are examined, focusing on driving behaviour in the presence of supportive and distracting information-presentation devices or RTIs for enhancement of drivers' performance. The potential of RTI technologies for driver performance enhancement and of low-cost driving simulators is assessed, and generic methodologies for the evaluation of RTI devices are developed. Principal findings are that the presentation of additional information to the driver increases task complexity and divides attention between car control and processing of and responses to new information, and that increasing task complexity leads to certain differentials in performance between old and young drivers.

The following deliverables are also available from CEC(1):

Name: *Driving Experiences and New Technology: Evaluations and Expectations of Older Drivers*
Authors: King's College, London
Ref: V1006/3
Publication Date: December 1990
Pages: 62 **Price:** 8.5 ECU

Name: *The Software of the Semi-realistic Simulator*
Authors: King's College, London
Ref: V1006/4
Publication Date: February 1991
Pages: 86 **Price:** 8.5 ECU

Name: *The Semi-realistic Simulator: Data, Results and Preliminary Analysis*
Authors: King's College, London
Ref: V1006/5
Publication Date: August 1991
Pages: 97 **Price:** 8.5 ECU

Name: *Elderly Drivers and New Technology: a Survey in the London Region with Special Reference to the Potential Benefits of New Information Technology Devices.*
Authors: King's College, London
Ref: V1006/6
Publication Date: September 1991
Pages: 37 **Price:** 5 ECU

Name: *Effects of Extra Signals on Drivers' Distance Keeping: a Simulation Study*
Authors: King's College, London
Ref: V1006/7
Publication Date: May 1992
Pages: 17 **Price:** 5 ECU

Name: *Elderly People Driving Cars: Issues and Prospects.*
Authors: A M Warnes
Ref: V1006/8
Publication Date: May 1992
Pages: 17 **Price:** 5 ECU

Name: *Car Driving as a Social Skill.*
Authors: A M Warnes and D A Fraser
Ref: V1006/9
Publication Date: May 1992
Pages: 24 **Price:** 5 ECU

V1007: SOCRATES
System of Cellular Radio for Traffic Efficiency and Safety

Final Report
Contractors: Ian Catling Consultancy & Tate Associates; British Telecom; Philips Research Laboratories; Philips Project Centre Geldrop; SEMA Group; Robert Bosch; Volvo; Saab Scania; Universitat Politecnica de Catalunya; Swedish National Road Administration; Daimler Benz; Ford Motor Company
Ref: V1007/Fin
Publication Date: June 1992
Available from: CEC (1)
Pages: 54 **Price:** 8.5 ECU

The following deliverable is also available from CEC(1):

Name: *Executive Summary*
Authors: SOCRATES Consortium
Ref: V1007/Exe
Publication Date: June 1992
Pages: 14 **Price:** 5 ECU

V1008: STRATEGIES
Strategies for Integrated Demand Management Systems

Final Report (Revised)
Contractors: Castle Rock Consultants, Intracom, University of Oxford, Planet, University of Karlsruhe, Organisation of Athens, Antony Stathopoulos and Associates
Ref: V1008/10(Fin)
Available from: Peter Davies, Castle Rock Consultants, Heathcoat Building, Highfields, Science Park, Nottingham NG7 2QJ
Tel: +44 602 430830 Fax: +44 602 430823
Publication Date: April 1992
Pages: 73 **Price:** 200

The following deliverables are also available from Peter Davies, Castle Rock Consultants:

Name: *Formulation of Control Strategies*
Authors: STRATEGIES Consortium
Ref: V1008/4
Publication Date: February 1990
Pages: 92 **Price:** 200 ECU

V1010: PANDORA
Prototyping A Navigation Database of Road-Network Attributes

Final Report (Draft)
Contractors: Automobile Association; Ordnance Survey; Bosch; Philips; MVA Systematica
Ref: V1010/21 (Fin)
Publication Date: October 1990
Available from: CEC (1)
Pages: 40 **Price:** 5 ECU

The following deliverables are also available from CEC (1):

Name: *Proposals for a European Highway Network Referencing Standard*
Authors: PANDORA Consortium
Ref: V1010/18
Publication Date: October 1990
Pages: 12 **Price:** 5 ECU

Name: *Proposals for Standard Revision; GDF Change Requests*

Authors: L. Heres
Ref: V1010/19
Publication Date: October 1990
Pages: 33 **Price:** 5 ECU

Name: *Proposals for Legal Protection for Data Providers*

Authors: S. Hoffman, et al.
Ref: V1010/20
Publication Date: August 1990
Pages: 19 **Price:** 5 ECU

V1011: CARGOES
Integration of Dynamic Route Guidance and Traffic Control System

Final Report

Contractors: Siemens, CGA-HBS, Siemens-Plessey Controls, ETRA/LISITT, Italtel, Mizar Automazione, TRRL, CERT, INRETS, TU BERLIN, University of Leeds, University of Southampton
Ref: V1011/33
Publication Date: September 1991
Available from: CEC (1)
Pages: 50 **Price:** 8.5 ECU

The project investigates the integration of Urban Traffic Control (UTC) and Dynamic Road Guidance (DRG) by reviewing the range of UTC and DRG systems available and assessing the potential for the improvement of UTC, by developing strategies and algorithms for DRG and for its integration with UTC, by developing functional specifications for the integration of existing DRG and UTC systems, and by producing guidelines for field trials of integrated systems. Driver responses and requirements are researched, in part by the development and use of IGOR route choice simulator. In the development of strategies and algorithms, consideration is given to degree of penetration, level of integration, and the types of UTC and DRG system being integrated.

The following deliverables are also available from CEC (1):

Name: *Final Report on use of Data from Dynamic Route Guidance System for Traffic Control System*

Authors: INRETS, OPEFORM, LISITT, CGA, MIZA, CERT, TU Berlin, University of Leeds
Ref: V1011/4
Publication Date: September 1991
Pages: 288 **Price:** 20 ECU

Name: *Report on Existing System and User Needs*

Authors: CGA, ETRA, Italtel, Plessey, Siemens
Ref: V1011/26
Publication Date: June 1990
Pages: 154 **Price:** 13 ECU

Name: *General Specification for the Evaluation and Experimental Design of Field Trials*

Authors: University of Leeds, University of Soton
Ref: V1011/38/39
Publication Date: September 1991
Pages: 88 **Price:** 8.5 ECU

Name: *Field Trial Specification and Report*

Authors: Siemens, CGA, Italtel, Plessey
Ref: V1011/40
Publication Date: September 1991
Pages: 60 **Price:** 8.5 ECU

Name: *General Guidance on the Design and Control of Field Trials of the Integration of DRG and UTC*

Authors: University of Leeds
Ref: V1011/41
Publication Date: September 1991
Pages: 108 **Price:** 10 ECU

V1013: CERACS
Comparative Evaluation of the Different Radiating Cables and Systems Technologies

Final Report

Contractors: INRETS-CRESTA, ENI, INIEX ISSeP, Politechnico di Torino, RATP, Universite des Sciences et Technique de Lille
Ref: V1013/11
Publication Date: February 1991
Available from: Marc Heddebout, INRETS, 20 rue Elisee Reclus, F-59650 Villeneuve, France
Tel: +33 20 43 8313 Fax: +33 20 43 8359
Pages: 110 **Price:** Free of charge

The main aim of the CERACS project was to evaluate the use of cable systems in a road transport informatics (RTI) system. The performances of various types of radiating cables and existing systems were determined and compared to those of conventional radio or microwave links. Technological recommendations for choices of such leaky feeder systems were established. Three new road applications were proposed:

i) GSM retransmission in tunnels;
ii) an automatic tolling system;
iii) an RDS beacon.

Finally, the project considered the possible usefulness of leaky feeders at higher frequencies, especially in the field of satellite retransmission.

The following deliverables are also available from INRETS:

Name: *Overall Report Relative to the Main Existing Radiating Cable Systems*
Authors: CERACS Consortium
Ref: V1013/1
Pages: 80 **Price:** Free of charge

Name: *Leaky Feeders; Needs and Adequation*
Authors: CERACS Consortium
Ref: V1013/2
Pages: 90 **Price:** Free of charge

Name: *Leaky Feeders: Systems and Interfaces; Preliminary Report*
Authors: CERACS Consortium
Ref: V1013/3-1
Pages: 90 **Price:** Free of charge

Name: *Leaky feeders: Systems and interfaces; Final Report*
Authors: CERACS Consortium
Ref: V1013/3-2
Publication Date: October 1990
Pages: 80 **Price:** Free of charge

Name: *Final Report on Leaky Feeders Frequency Allocation*
Authors: CERACS Consortium
Ref: V1013/5
Publication Date: June 1990
Pages: 55 **Price:** Free of charge

Name: *Synthesis Administrative Viewpoint about EMC*
Authors: CERACS Consortium
Ref: V1013/6
Publication Date: June 1990
Pages: 60 **Price:** Free of charge

Name: *Synthesis Administrative Viewpoint about EMC and Complementary Report in the Frequency Range 1-10GHz*
Authors: CERACS Consortium
Ref: V1013/6a
Publication Date: 1990
Pages: 30 **Price:** Free of charge

Name: *Technical Synthesis about EMC*
Authors: CERACS Consortium
Ref: V1013/6b
Publication Date: October 1990
Pages: 25 **Price:** Free of charge

Name: *Technical Report about the Test Bench - Theoretical Modelisation of the Radiation of Leaky Feeders*
Authors: CERACS Consortium
Ref: V1013/7
Publication Date: October 1990
Pages: 45 **Price:** Free of charge

Name: *Synthesis on Laboratory Results*
Authors: CERACS Consortium
Ref: V1013/8
Publication Date: October 1990
Pages: 40 **Price:** Free of charge

Name: *Report on the Experiments and the Evaluations Done on Test Sites*
Authors: CERACS Consortium
Ref: V1013/10
Publication Date: October 1990
Pages: 60 **Price:** Free of charge

Name: *In-depth Analysis of the St Cloud Tunnel System*
Authors: CERACS Consortium
Ref: V1013/10-1
Publication Date: May 1990
Pages: 120 **Price:** Free of charge

V1014: IMAURO
Integrated Model for the Analysis of Urban Route Optimisation

Executive Summary

Contractors: Belgian Road Research Centre; SIAS Ltd; Facultés Universitaires Notre Dame de la Paix; Truvelo Manufacturer; Devlonics Control
Ref: V1014/Exe
Available from: CEC (1)
Pages: 10 **Price:** 5 ECU

The project focuses on building a dynamic transport simulation model able to take account of behaviour arising from information received or perceived, including the effects of the scale and level of penetration of RTI systems installed. The model, adaptable to arbitrary urban networks, focuses on non-equilibrium dynamic assignment and provides three typical strategies - safety, environment and performance - important for DRIVE objectives. IMAURO is conceived as an integrated tool with a modular structure: Data Acquisition, Database and Simulation Model. The latter is characterised as the integration of three sub-models each acting at a specific level, and can show the effects of broadcast information on travel times, traffic density and flow rates.

The following deliverables are also available from CEC(1):

Name: *Documentation on Inductive Loop Measurements*
Authors: IMAURO Consortium
Ref: V1014/1,2,5
Publication Date: March 1990
Pages: 26 **Price:** 5 ECU

Name: *Traffic Analysis with Computervision Sensors*
Authors: IMAURO Consortium
Ref: V1014/6 & 7
Publication Date: September 1991
Pages: 12 **Price:** 5 ECU

Name: *Documentation on Measurements on Road Crossings*
Authors: IMAURO Consortium
Ref: V1014/10
Publication Date: July 1990
Pages: 58 **Price:** 8.5 ECU

Name: *Study and Evaluation of the Camera Equipment for Mobile Analysis*
Authors: Devlonics Control NV
Ref: V1014/11 (WPM1)
Publication Date: June 1991
Pages: 82 **Price:** 8.5 ECU

Name: *Data Package and System Documentation - Equipment for Mobile Traffic Analysis*
Authors: SIAS Ltd
Ref: V1014/15 (WPM1)
Publication Date: January 1992
Pages: 68 **Price:** 8.5 ECU

Name: *Functional Analysis of the Traffic Data Measurements Site Selection and Practical Installation*
Authors: P. Vervenne
Ref: V1014/16
Publication Date: October 1989
Pages: 11 **Price:** 5 ECU

Name: *Results of Measurements at a Crossroads*
Authors: A De Henau
Ref: V1014/17
Publication Date: December 1990
Pages: 46 **Price:** 5 ECU

Name: *Workshop on RTI Databases*
Authors: M. Van Vlijmen, L. Vandenhoeck, BLIS N.V.
Ref: V1014/20
Publication Date: September 1989
Pages: 8 **Price:** 5 ECU

Name: *Functional Analysis DBMS*
Authors: M. Van Vlijmen, L. Vandenhoeck
Ref: V1014/22
Publication Date: December 1992
Pages: 50 **Price:** 8.5 ECU

Name: *Report of Database Design and User Interface*
Authors: M. Van Vlijmen, L. Vandenhoeck, H. Mariën, BLIS N.V.
Ref: V1014/23
Publication Date: July 1990
Pages: 65 **Price:** 8.5 ECU

Name: *Critics on Society Oriented Utility Functions*
Authors: Ph. Goodwin
Ref: V1014/29
Publication Date: March 1990
Pages: 19 **Price:** 5 ECU

Name: *Prototype Definition of the TOPSORT Submodel*
Authors: R. Janssens, BRRC
Ref: V1014/30
Publication Date: June 1989
Pages: 172 **Price:** 13 ECU

Name: *Detailed Analysis of the TOPSORT Model*
Authors: R. Janssens, BRRC
Ref: V1014/31
Publication Date: December 1989
Pages: 150 **Price:** 13 ECU

Name: *Prototype Definition of the PACSIM Submodel*
Authors: D. Manneback, Ph. Toint, FUNDP
Ref: V1014/34
Publication Date: June 1989
Pages: 22 **Price:** 5 ECU

Name: *A Dynamic Traffic Assignment Model*
Authors: Ph. Dehoux, Ph. Toint
Ref: V1014/35
Publication Date: March 1991
Pages: 151 **Price:** 13 ECU

Name: *Prototype Definition of the MICSIM Model*
Authors: S. Druitt, SIAS
Ref: V1014/40
Publication Date: June 1989
Pages: 21 **Price:** 5 ECU

Name: *Functional Specification of the MICSIM Sub-model*
Authors: D McArthur
Ref: V1014/41
Publication Date: December 1989
Pages: 110 **Price:** 10 ECU

Name: *Preliminary MICSIM Software Implementation*
Authors: D McArthur
Ref: V1014/42
Publication Date: February 1991
Page: 120 **Price:** 10 ECU

Name: *A Rule Language Developers Guide*
Authors: D McArthur
Ref: V1014/44
Publication Date: September 1991
Pages: 59 **Price:** 8.5 ECU

Name: *Context Sensitive Graphical Rule Editor*
Authors: D McArthur
Ref: V1014/45
Publication Date: December 1991
Pages: 50 **Price:** 8.5 ECU

V1015: CLAIRE
Artificial Intelligence Based Systems for Traffic Control

Final Report (revised)
Consortium: INRETS, CR2A, Castle Rock Consultants, University of Leeds, University of Nottingham, Control Trafico, Universitat Politecnica de Catalunya
Ref: V1015/19
Publication Date: January 1992
Available from: CEC (1)
Pages: 56 **Price:** 8.5 ECU

The overall objective of the project is to delineate techniques for the application of artificial intelligence to traffic control problems through the development of the CLAIRE expert system. The main goals identified are development and testing of prototype knowledge based systems (KBS) to solve congestion problems, development of appropriate interfaces between the KBS in improving traffic flow, assessment of effectiveness of KBS in improving traffic flow through simulation exercises, identification of areas for further work, and production of proposals for a future on-line demonstration project. CLAIRE KBS can address the position of traffic congestion in certain areas, but further research is needed on technical issues and other areas.

The following deliverables are also available from CEC (1):

Name: *Demonstration Proposals*
Authors: CLAIRE Consortium
Ref: V1015/18
Publication Date: December 1990
Pages: 50 **Price:** 8.5 ECU

Name: *Executive Summary*
Authors: CLAIRE Consortium
Ref: V1015/20
Publication Date: March 1992
Pages: 10 **Price:** 5 ECU

V1016: INFOSAFE
An Information System for Road User Safety

Final Report

Contractors: TFK & VTI Transportforschung, TFK, Alpha, AIT, Yard, TÖI
Ref: V1016/(R8-92)
Publication Date: March 1992
Available from: CEC (1)
Pages: 24 **Price:** 5 ECU

The report describes a system designed to support the operator of a Traffic Control Centre (TCC) in performing tasks such as collection, registration, filtering and analysis of Roadnet information, prediction of consequences to roadnet performance and to roaduser safety, decisions on countermeasures for roadusers, overview and selection of channels of communication, and generation of messages - which can be tailored at every stage of processing - for selected media and target groupings. An important feature is the distinction between an Action and a Target group related message. The system is built around a database, a natural source/receiver of information for similar databases in neighbouring TCCs, with information gradually developed and connected to a set of related messages.

The following deliverables are also available from CEC (1):

Name: *Concept Definition*
Authors: TFK+VTI, Yard, AIT, Alpha, TFK, TÖI
Ref: V1016/2 (R3/90)
Publication Date: February 1990
Pages: 98 **Price:** 8.5 ECU

Name: *Review of Software and Organisation Concept (Technical Aspects)*
Authors: TFK+VTI, Yard, AIT, Alpha, TFK, TÖI
Ref: V1016/5 (R5-90)
Publication Date: September 1990
Pages: 130 **Price:** 10 ECU

Name: *The Infosafe Prototype*
Authors: AIT, Alpha, TFK, TFK+VTI, TÖI
Ref: V1016/6 (R6-91)
Publication Date: August 191
Pages: 144 **Price:** 10 ECU

Name: *The Traffic Control Centre: Inventory & Organisation of Information, Sources and Receivers*
Authors: AIT, ALPHA, TFK, TFK+VTI, TÖI
Ref: V1016/7
Publication Date: March 1992
Pages: 40 **Price:** 5 ECU

V1017: BERTIE
Changes in Driver Behaviour Due to the Introduction of RTI Systems

Final Report (Revised)

Contractors: Husat Research Centre; VTI; TU Berlin; BMW; AFT-IPTL
Ref: V1017/76 (FIN)
Publication Date: November 1992
Available from: CEC(1)
Pages: 53 **Price:** 8.5 ECU

The main aim of the project is to use a multi-disciplinary range of test tools to investigate and describe the impacts of RTI systems on driver behaviour. Two in-vehicle applications, route navigation systems and hands-free carphones, are focused on. The question of data-capture environments is also looked at. The technical strategy is to develop and validate a set of data-capture techniques via a process of test-retest validity. Usability evaluation method and information are directed towards changes in driver behaviour at four levels: group perception and strategies, individual perceptions, attitudes and strategies, individual control behaviour, and individual physiological responses.

The following deliverables are also available from CEC (1):

Name: *A Review of Physiological Measurement of Driver Mental Work-Load*
Authors: S.H. Fairclough
Ref: V1017/22
Publication Date: February 1990
Pages: 48 **Price:** 5 ECU

Name: *Driver Information Needs (Revised Version)*
Authors: Prof. A. Zimmer
Ref: V1017/25
Publication Date: November 1990
Pages: 47 **Price:** 5 ECU

Name: *Components of Test Routes for the Evaluation of In-Car Navigation Systems*
Authors: H. Gstatter, W. Fastenmeier
Ref: V1017/69
Publication Date: June 1991
Pages: 57 **Price:** 8.5 ECU

Name: *Car-Phone Use and Motorway Driving*
Authors: A.M. Parkes, S.H. Fairclough, M.C. Ashby
Ref: V1017/70
Publication Date: December 1991
Pages: 38 **Price:** 5 ECU

Name: *Adapting the TLX to Measure Driver Mental Work-load*
Authors: S.H. Fairclough
Ref: V1017/71
Publication Date: December 1991
Pages: 36 **Price:** 5 ECU

Name: *The Effects of a Mobile Telephone Conversation on Driver Behaviour in a Car Following Situation*
Authors: H. Alm, L. Nilsson
Ref: V1017/73
Publication Date: December 1991
Pages: 26 **Price:** 5 ECU

Name: *Changes in Travel Times and Route Choice Behaviour on Routine Trips with a Route Guidance System*
Authors: K. Lorenz
Ref: V1017/74
Publication Date: December 1991
Pages: 25 **Price:** 5 ECU

Name: *Carminat System and its Translation in Terms of Training*
Authors: B. Momont, A. Pellvet
Ref: V1017/75
Publication Date: December 1991
Pages: 27 **Price:** 5 ECU

V1018: TARDIS
Traffic and Roads - DRIVE Integrated Systems

Final Report
Contractors: Ian Catling Consultancy; Centro Studi sui Sistemi di Transporto; Rijkswaterstaat; Siemens; Transport and Road Research Laboratory; INRETS; Communication and Management Systems Unit; Bundesanstalt für Strassenwesen; Daimler Benz; Swedish National Road Administration; Signalbau Huber; ASFA; AISCAT; ASETA
Ref: V1018/47 (Fin)
Publication Date: March 1992
Available from: CEC (1)
Pages: 105 **Price:** 10 ECU

The project focuses on the identification of common functional requirements and the need for standardisation in an environment where RTI systems are integrated with each other. Use is made of a simulator TARSIM built around a five-level General System Architecture. This structure is used to analyse the functional requirements of RTI systems in seven application areas. One of the key areas emerging from the TARDIS work is the communication link with the vehicle. A need for a two-way link for most applications is established, and a functional specification for automatic debiting is produced.

The following deliverables are available from Ian Catling, Ian Catling Consultancy, The Spinney, Oakhurst Rise, Carshalton, Beeches, Surrey, SM5 4AG, UK
Tel: +44 81 643 4451 Fax: +44 81 643 4452

Name: *Dynamic Route Guidance*
Ref: V1018/13
Publication Date: March 1990
Price: 50 ECU

Name: *Parking Management Systems*
Authors: C.S.S.T
Ref: V1018/15
Publication Date: March 1990
Pages: 27 **Price:** 50 ECU

Name: *Public Transport M.I.S*
Authors: C.S.S.T, Daimler-Benz, INRETS
Ref: V1018/17
Publication Date: April 1990
Pages: 108 **Price:** 50 ECU

Name: *Automotive Debiting Systems*
Authors: see catalogue
Ref: V1018/18
Publication Date: March 1989
Pages: 61 **Price:** 50 ECU

Name: *Tourist Information*
Authors: C.M.S.U.
Ref: V1018/19
Publication Date: April 1990
Pages: 65 **Price:** 50 ECU

Name: *Data Collection*
Authors: C.S.S.T
Ref: V1018/20
Publication Date: March 1990
Pages: 17 **Price:** 50 ECU

Name: *Links Between Traffic Control Centres*
Authors: D.Pierini, H.Keller
Ref: V1018/21
Publication Date: February 1990
Pages: 64 **Price:** 50 ECU

Name: *IRTE Functional Requirements*
Authors: I.Catling
Ref: V1018/26
Publication Date: August 1990
Pages: 37 **Price:** 50 ECU

Name: *Glossary and Abbreviations*
Ref: V1018/51
Publication Date: 1992
Price: 50 ECU

V1019: CASSIOPE
Computer Aided System for Scheduling Information and Operation of Public Transport in Europe

Final Report
Contractors: CETE-Mediterranée, Cranfield Institute of Technology, Hamburg Consult & Hamburger Hochbahn, Serel, Transports Urbains de Nice, University of Leeds, University of Thessaloniki, Wooton Jeffreys
Ref: V1019/12
Publication Date: November 1992
Available from: Benedict de Saint Laurent, CETE-Mediterranée, BP 37000, 13791 Aix en Provence, Cedex 3, France
Pages: 40 **Price:** 11 ECU

The following deliverables are also available from CETE-Mediterranée:

Name: *State of the Art on Computer-aided Technology in Public Transport*
Authors: CASSIOPE Consortium
Ref: V1019/1
Publication Date: March 1990
Pages: 94 **Price:** 20 ECU

Name: *English French German Glossary on Advanced Technology in Public Transport*
Authors: CASSIOPE Consortium
Ref: V1019/2
Publication Date: January 1990
Pages: 66 **Price:** 20 ECU

Name: *English French German Glossary Extended Version*
Authors: CASSIOPE Consortium
Ref: V1019/2.0
Publication Date: June 1992
Pages: 130 **Price:** 41 ECU

Name: *Operators Needs of Overall Requirement Report*
Authors: CASSIOPE Consortium
Ref: V1019/3
Publication Date: March 1990
Pages: 68 **Price:** 21 ECU

Name: *Main Results of the Operator Survey*
Authors: CASSIOPE Consortium
Ref: V1019/3.1
Publication Date: March 1990
Pages: 40 **Price:** 11 ECU

Name: *Resultats de l'Enquête Cassiope: Transport Urbains et Innovation Technologique*
Authors: CASSIOPE Consortium
Ref: V1019/3.2F
Publication Date: October 1990
Pages: 32 **Price:** 10 ECU

Name: *Macro-Economic Assessment of RTI Impact on Public Transport*
Authors: CASSIOPE Consortium
Ref: V1019/4
Publication Date: March 1990
Pages: 72 **Price:** 22 ECU

Name: *Studies of Functionalities in the User Information Domain*
Authors: CASSIOPE Consortium
Ref: V1019/5.1
Publication Date: May 1990
Pages: 86 **Price:** 27 ECU

Name: *Etude des Fonctionnalités dans le Domaine de l'Information de l'Usager*
Authors: CASSIOPE Consortium
Ref: V1019/5.1F
Publication Date: January 1992
Pages: 86 **Price:** 27 ECU

Name: *Studies of Functionalities in the Scheduling Domain*
Authors: CASSIOPE Consortium
Ref: V1019/5.2
Publication Date: May 90
Pages: 73 **Price:** 22 ECU

Name: *Studies of Functionalities in the Strategic Planning, Maintenance, MIS Domains*
Authors: CASSIOPE Consortium
Ref: V1019/5.3
Publication Date: May 90
Pages: 113 **Price:** 35 ECU

Name: *Studies of Functionalities in the Fare Collection Domain*
Authors: CASSIOPE Consortium
Ref: V1019/5.4
Publication Date: May 90
Pages: 58 **Price:** 17 ECU

Name: *Etude des Fonctionnalités dans le Domaine de la Perception des Tarifs*
Authors: CASSIOPE Consortium
Ref: V1019/5.4F
Publication Date: January 90
Pages: 58 **Price:** 120 ECU

Name: *Possible Contribution of Artificial Intelligence, Esprit tools and Ergonomics*
Authors: CASSIOPE Consortium
Ref: V1019/5.5
Publication Date: May 90
Pages: 62 **Price:** 18 ECU

Name: *Report on the Cassiope Demonstration Project Definition*
Authors: CASSIOPE Consortium
Ref: V1019/6
Publication Date: July 1990
Pages: 30 **Price:** 8 ECU

Name: *Functional Requirements, Data Modelling, Architecture*
Authors: CASSIOPE Consortium
Ref: V1019/7.1
Publication Date: October 1990
Pages: 114 **Price:** 35 ECU

Name: *Functional Requirements Technical Annex*
Authors: CASSIOPE Consortium
Ref: V1019/7.2
Publication Date: October 1990
Pages: 429 **Price:** 135 ECU

Name: *Data Modelling, Technical Annex*
Authors: CASSIOPE Consortium
Ref: V1019/7.3
Publication Date: October 1990
Pages: 91 **Price:** 28 ECU

Name: *Bus-Guide: an Interactive Information Terminal Prototype Definition and Demonstration Scenario*
Authors: CASSIOPE Consortium
Ref: V1019/8.1
Publication Date: February 1991
Pages: 120 **Price:** 37 ECU

Name: *Cassiope Architecture Feasibility and the Scheduling Demonstration Project*
Authors: CASSIOPE Consortium
Ref: V1019/8.2
Publication Date: March 1991
Pages: 39 **Price:** 11 ECU

Name: *Cassiope Architecture and Standardization - Final Recommendations*
Authors: CASSIOPE Consortium
Ref: V1019/9
Publication Date: November 1991
Pages: 50 **Price:** 15 ECU

Name: *Results of the Passenger Information Demonstration Project (Bus - Guide)*
Authors: CASSIOPE Consortium
Ref: V1019/10.1
Publication Date: February 1992
Pages: 170 **Price:** 52 ECU

Name: *Results of the Scheduling Demonstration Project*
Authors: CASSIOPE Consortium
Ref: V1019/10.2
Publication Date: March 1992
Pages: 250 **Price:** 78 ECU

Name: *Results of the Fase Collection Work on Data Modelling*
Authors: CASSIOPE Consortium
Ref: V1019/10.3
Publication Date: April 1992
Pages: 71 **Price:** 21 ECU

Name: *Evaluation of the Cassiope Demonstration*
Authors: CASSIOPE Consortium
Ref: V1019/11
Publication Date: May 1992
Pages: 38 **Price:** 11 ECU

V1020
Tidal Flow Systems

Final Report
Contractors: Heusch-Boesefeldt, Antony Stathapoulos and Associates, Steierwald, Schonharting und Partner, Control Trafico, TU Hamburg-Harburg, TU Berlin, Empresa de Investigacao e Desenvolvimento de Electronica
Ref: V1020/6
Publication Date: February 1992
Available from: CEC (1)
Pages: 102 **Price:** 10 ECU

The following deliverable is also available from CEC (1):

Name: *Final Report on Simulations + Annex*
Authors: TIDAL FLOW SYSTEMS Consortium
Ref: V1020/4
Publication Date: September 1991/February 1992
Available from: CEC (1)
Pages: 172 **Price:** 13 ECU

V1021
Task Force "European Digital Road Map"

Contractors: Daimler-Benz, Bosch, Intergraph Europe, Philips, Renault, Tele Atlas

Early efforts at standardisation in the creation of a European Digital Road Map (EDRM) led to the release in 1988 of GDF1.0, based on the needs of car navigation systems. This project aimed to broaden the basis of GDF by including the needs of other road data suppliers and users, and to test the consistency of the GDF design. These goals have been achieved, and GDF 2.0 was released in December 1991. The original intention to include the needs of Public Road Authorities, in particular the so-called 'curvilinear attributes' has only been carried out in a very provisional form, due to the complexity of the subject.

The following deliverables are available from CEC (1):

Name: *Assessment of Potential Requirements and Applications of Non-Automotive, Digital Road Maps*
Authors: Renault
Ref: V1021/1 (WP(1220))
Publication Date: September 1990
Pages: 33 **Price:** 5 ECU

Name: *Final Report on Road Database Problems*
Authors: SAGEM
Ref: V1021/13
Publication Date: January 1992
Price: On application

Name: *Final Report Traffic Management*
Authors: Balz
Ref: V1021/20
Publication Date: December 1991
Pages: 24 **Price:** 5 ECU

Name: *BMT Booklet Containing Description of BMT goals, Methods and Attributes*
Authors: Kronjäger
Ref: V1021/22
Publication Date: July 1989
Pages: 64 **Price:** 8.5 ECU

Name: *Final Report on BMT Analysis*
Ref: V1021/29
Publication Date: March 1992
Price: On application

Name: *Creation of Approach GDF*
Authors: Siteur
Ref: V1021/32
Publication Date: January 1990
Pages: 16 **Price:** 5 ECU

Name: *Final Report Standardisation*
Authors: L Heres
Ref: V1021/34
Publication Date: March 1992
Pages: 15 **Price:** 5 ECU

Name: *GDF 2.0 Extension for Road Databases*
Authors: C Portele
Ref: V1021/46
Publication Date: March 1992
Pages: 150 **Price:** 5 ECU

V1022: Real-Time UTC
Realisation of a Real-Time Urban Traffic Control System

Final Report
Contractors: GTM Entrepose, Macq Electronique, Garbarini, CERT
Ref: V1022/Fin
Publication Date: July 1992
Available from: CEC (1)
Pages: 140 **Price:** 10 ECU

The following deliverables are also available from CEC (1):

Name: *Functional Analysis of the Central Unit*
Authors: Real-Time UTC Consortium
Ref: V1022/9(WP3.1)
Publication Date: May 1991
Pages: 62 **Price:** 8.5 ECU

Name: *Test Report for Isolated Intersection Experiment*
Authors: Real-Time UTC Consortium
Ref: V1022/14 (WP 9.3)
Publication Date: May 1991
Pages: 39 **Price:** 5 ECU

Name: *Executive Summary*
Authors: Real-Time UTC Consortium
Ref: V1022/Exe
Publication Date: July 1992
Available from: CEC (1)
Pages: 14 **Price:** 5 ECU

V1023: EUROTOPP
European Transport Planning Process

Final Report
Contractors: Oxford University Transport Unit; University of Karlsruhe-Transp. Inst; Bureau Goudappel Coffeng; CETE Mediterranée; Syseca Temps Reel; Robotiker; Institute for Social & Behavioural; Inovaplan; Herry-Snizek
Ref: V1023/714
Publication Date: 1992
Available from: The Librarian, Transport Studies Unit, University of Oxford, 11 Bevington Road, Oxford, OX2 6NB, UK
Tel: +44 865 274715 Fax: +44 865 515194
Pages: Approx 300 **Price:** on application

The project aims to define the specification of a new type of transport demand model, which would be dynamic and information-sensitive, and to produce a first working prototype. Three lines of modelling research are used: micro-simulation, activity-based analysis, and macroscopic methods. The specification is constructed around the idea of a simulated individual in a simulated household defined by lifestyle and evolving life-cycle position, who has a pattern of planned activities and choices to make. The model is evolutionary in character and incorporates full and partial, or inaccurate, information, experience and inertia. Further development and validation are necessary before full-scale implementation.

The following deliverables are also available from the Transport Studies Unit:

Name: *User Manual (accompanies Final Report)*
Authors: EUROTOPP Consortium
Ref: V1023/714A
Publication Date: 1992
Price: On application

Name: *EUROTOPP Annual Report*
Authors: EUROTOPP Consortium
Ref: V1023/488
Publication Date: 1989
Price: On application

Name: *EUROTOPP - Towards a Dynamic and Activity-Based Modelling Framework*
Authors: EUROTOPP Consortium
Ref: V1023/586
Publication Date: 1991
Price: On application

Name: *Implementing a Dynamic and Information Sensitive Modelling Framework*
Authors: EUROTOPP Consortium
Ref: V1023/619
Publication Date: 1991
Pages: 20 **Price:** On application

Name: *Specifications and Recommendations*
Authors: DRIVER INFORMATION SYSTEMS Consortium
Ref: V1024/7
Publication Date: December 1991
Pages: 184 **Price:** 13 ECU

V1024: DIS
Driver Information Systems

Final Report
Contractors: Heusch Boesefeldt, Bailey-Esacontrol, University of Hamburg-Harburg, Intrasoft, MVA Systematica, CGA-HBS, Institute of Transport Economics
Ref: V1024/Fin
Publication Date: February 1992
Available from: CEC(1)
Pages: 67 **Price:** 8.5 ECU

The project aims to create a concept for the organisation and standardisation of a comprehensive pan-European Driver Information System (DIS) integrating existing DISs, with the emphasis on in-vehicle systems. Special regard is paid to national peculiarities and connections to other European work on R&D in the field of information systems. A system architecture permitting substantial volumes of data to be passed between numerous public and private sectors is proposed. Principal components required for realisation thereof are a common network interface attachment facility, and messages incorporating standard location referencing, syntax and rules. There is also recognition of a need to create appropriate management and financial regimes.

The following deliverables are also available from CEC (1):

Name: *Requirements Summary Report*
Authors: DRIVER INFORMATION SYSTEMS Consortium
Ref: V1024/6
Publication Date: March 1991
Pages: 60 **Price:** 8.5 ECU

Name: *Information Generation Management and Architecture*
Authors: DRIVER INFORMATION SYSTEMS Consortium
Ref: V1024/7
Publication Date: September 1991
Pages: 106 **Price:** 10 ECU

V1025: EURONETT
Evaluating User Responses on New European Transport Technologies

Final Report
Contractors: University of Oxford; Conlogic; Castle Rock Consultants; National Technical University of Athens; Organisation of Athens; University of Berlin
Ref: V1025/16(589)
Publication Date: 1991
Available from: The Librarian, Transport Studies Unit, University of Oxford, 11 Bevington Road, Oxford, OX2 6NB, UK
Tel: +44 865 274715 Fax: +44 865 515194
Pages: 140 **Price:** On application

The project is designed to assess the likely effects of enhanced information systems on travel behaviour, the transport industry and on the long term development of cities. Empirical studies include twelve surveys and two experiments, the latter covering simulation of route guidance and RDS using a real-time computer game, and test drives in real road conditions with in-vehicle guidance and information systems. The work identifies an urgent need for both improved longitudinal data on travellers' behavioural responses and a renewed effort in the development of experimental procedures designed to test specific hypotheses concerning behavioural response.

The following deliverables are also available from the Transport Studies Unit:

Name: *A Summary of the State-of-the-Art*
Authors: EURONETT Consortium
Ref: V1025/1A(475)
Publication Date: 1989
Pages: 55 **Price:** On application

Name: *Policies and Behavioural Responses to Change*
Authors: EURONETT Consortium
Ref: V1025/1B(476)
Publication Date: 1989
Pages: 149 **Price:** On application

Name: *Methodologies*
Authors: EURONETT Consortium
Ref: V1025/1C(477)
Publication Date: 1989
Pages: 70 **Price:** On application

Name: *The Potential Longer Term Impacts of RTI: An Assessment of the Literature*
Authors: EURONETT Consortium
Ref: V1025/1D(478)
Publication Date: 1989
Pages: 146 **Price:** On application

Name: *An Appraisal of Potential RTI Technologies*
Authors: EURONETT Consortium
Ref: V1025/1E(479)
Publication Date: 1989
Pages: 73 **Price:** On application

Name: *Public Transport Passenger Information Through New Telematics Technologies: A Review of Development*
Authors: EURONETT Consortium
Ref: V1025/1F(566)
Publication Date: 1990
Pages: 73 **Price:** On application

Name: *The Formulation of RTI-Based Policy Scenarios*
Authors: EURONETT Consortium
Ref: V1025/2(491)
Publication Date: 1989
Pages: 75 **Price:** On application

Name: *Towards an Urban Typology for the Study of Interaction Between RTI-Technologies and Urban Land-Use*
Authors: EURONETT Consortium
Ref: V1025/3(506)
Publication Date: 1990
Pages: 95 **Price:** On application

Name: *Models for Analyzing Impacts of RTI on the Transport Industry*
Authors: EURONETT Consortium
Ref: V1025/4(507)
Publication Date: 1990
Pages: 35 **Price:** On application

Name: *Evolutionary Modelling: First Interim Report*
Authors: EURONETT Consortium
Ref: V1025/5(512)
Publication Date: 1990
Pages: 30 **Price:** On application

Name: *Evolutionary Modelling for Evaluating the Longer Term Impacts of Road Transport Informatics in European Society*
Authors: EURONETT Consortium
Ref: V1025/5A(534)
Publication Date: 1990
Pages: 22 **Price:** On application

Name: *Qualitative Surveys Phase 1: Research Design*
Authors: EURONETT Consortium
Ref: V1025/6(525)
Publication Date: 1990
Pages: 70 **Price:** On application

Name: *An Urban RTI-Orientated Typology: A Clustering Approach Based on Multi-Variate Methods*
Authors: EURONETT Consortium
Ref: V1025/7(588)
Publication Date: 1990
Pages: 65 **Price:** On application

Name: *Potential RTI Diffusion Patterns: Lessons from other Information Technologies*
Authors: EURONETT Consortium
Ref: V1025/7A(556)
Publication Date: 1990
Pages: 50 **Price:** On application

Name: *Evolutionary Modelling: Second Interim Report*
Authors: EURONETT Consortium
Ref: V1025/8(527)
Publication Date: 1990
Pages: 80 **Price:** On application

Name: *Results of the Quantitative Surveys and Executive Summary*
Authors: EURONETT Consortium
Ref: V1025/9(568)
Publication Date: 1990
Pages: 88 **Price:** On application

Name: *Respondents' Assessment of Pre-Trip Information in Birmingham & Athens*
Authors: EURONETT Consortium
Ref: V1025/11(574)
Publication Date: 1990
Pages: 105 **Price:** On application

Name: *Attitudes & Responses to Enhanced Traffic Control Measures: Birmingham Surveys*
Authors: EURONETT Consortium
Ref: V1025/12(584)
Publication Date: 1990
Pages: 140 **Price:** On application

Name: *Responses to In-Trip Public Transport Information: The West Midlands Survey: Interim Report*
Authors: EURONETT Consortium
Ref: V1025/13(593)
Publication Date: 1990
Pages: 180 **Price:** On application

Name: *Responses to a Trial Route Guidance System: Interim Results of a Survey in Athens: Interim Report*
Authors: EURONETT Consortium
Ref: V1025/15(585)
Publication Date: 1990
Pages: 120 **Price:** On application

Name: *Trondheim Toll Ring Stated Preference Study Pilot Survey Assessment Interim Report*
Authors: EURONETT Consortium
Ref: V1025/17(575)a
Publication Date: 1990
Pages: 40 **Price:** On application

Name: *Trondheim Toll Ring: Results of a Stated Preference Study of Travellers' Responses*
Authors: EURONETT Consortium
Ref: V1025/17(662)b
Publication Date: 1991
Pages: 80 **Price:** On application

Name: *Behavioural Responses to Electronic Road Pricing: Case Study: Athens*
Authors: EURONETT Consortium
Ref: V1025/18(670)
Publication Date: 1991
Pages: 55 **Price:** On application

Name: *An Assessment of Travellers' Responses to a Broadcast Parking Info Service in Nottingham*
Authors: EURONETT Consortium
Ref: V1025/19(657)
Publication Date: 1991
Pages: 60 **Price:** On application

Name: *Assessing the Responses of Travellers in Athens: Birmingham Out of Home Pre-Trip Information*
Authors: EURONETT Consortium
Ref: V1025/26(671)
Publication Date: 1991
Pages: 88 **Price:** On application

Name: *Assessing the Responses of Travellers in Birmingham and Athens to In-Home Pre-Trip Information*
Authors: EURONETT Consortium
Ref: V1025/27(664)
Publication Date: 1991
Pages: 120 **Price:** On application

V1026: INVAID
Integration of Computer Vision Techniques for Automatic Incident Detection

Final Report
Contractors: ETRA S.A.-LISITT; University College London; Wootton Jeffreys Consultants; Devlonics Control; INRETS; SYSECA; CGA-HBS
Ref: V1026/Fin
Publication Date: January 1992
Available from: CEC (1)
Pages: 40 **Price:** 5 ECU

The following deliverables are also available from CEC (1):

Name: *Executive Summary*
Authors: INVAID Consortium
Ref: V1026/Exe
Publication Date: January 1992
Pages: 11 **Price:** 5 ECU

Name: *State-of-the-Art Report and Incident Definition*
Authors: INVAID Consortium
Ref: V1026/1-2
Publication Date: May 1989
Pages: 78 **Price:** 8.5 ECU

Name: *Type B Processor, Specification Report Urban Links*
Authors: INVAID Consortium
Ref: V1026/5 (part 1)
Publication Date: December 1990
Pages: 56 **Price:** 8.5 ECU

Name: *Field Trials Specification*
Authors: LISITT, UCL, WJC, INRETS
Ref: V1026/17-18
Publication Date: September 1991
Pages: 42 **Price:** 5 ECU

Name: *Field Trials Specification (Annex 1)*
Authors: LISITT, UCL, WJC, INRETS
Ref: V1026/17-18
Publication Date: September 1991
Pages: 8 **Price:** 5 ECU

Name: *INVAID Interface - Specification with Other RTI Systems*
Authors: LISITT, CGA-HBS
Ref: V1026/16 (WP5)
Publication Date: September 1991
Pages: 71 **Price:** 8.5 ECU

V1027: EUROFRET
A European System for International Road Freight Transportation Operations

Final Report
Contractors: Trademco Consultants; University of Thessaloniki; Netherlands Economic Institute: NV Mondia; Polytechnic of Central London; PLANET; Bilspedition
Ref: V1027/Fin
Publication Date: September 1991
Available from: Trademco Ltd, 6 Kerasountos str, Athens 115 28, Greece
Tel: + 30 1 77 7407 456 Fax: + 30 1 77 75880
Pages: 60 **Price:** 8.5 ECU

The project investigates the possibility of setting strategies at government level for RTI applications in Road Freight Operations (RFO). Alternative scenaria were devised for the development of RFO operations over the next 20 years in Europe. The possibility of a system architecture at three levels, central systems, fixed terminals and mobile units was evaluated. Findings are that an integrated road transport environment (IRTE) is not yet possible considering various technical, political, economic and social conditions in European countries. A system of four pre-IRTEs is suggested as the most preferable step in that direction.

The following deliverables are also available from Trademco Ltd:

Name: *Questionnaire Used in Operators and Organizations Survey*
Authors: Trademco Ltd
Ref: V1027/
Publication Date: 1989
Price: Free of charge

Name: *Road Freight Operations (RFO) in Europe: The Framework of Road Freight Operations, RTI Applications and User Attitudes Vol I*
Authors: Trademco Ltd
Ref: V1027/
Publication Date: 1989
Pages: 208 **Price:** 200 ECU

Name: *Road Freight Operations (RFO) in Europe: Review of Current and Potential RTI Systems Vol II*
Authors: Trademco Ltd
Ref: V1027/
Publication Date: 1989
Pages: 65 **Price:** 100 ECU

Name: *Alternative RTI Strategies for RFO Scenaria: Scenaria for Future Freight Operations and Alternative RTI Strategies Vol I*
Authors: Trademco Ltd
Ref: V1027/
Publication Date: 1990
Pages: 173 **Price:** 200 ECU

Name: *Alternative RTI Strategies for RFO Scenaria: Combined Transport and RTI Applications, Existing Conditions and Future Prospects Vol III*
Authors: Trademco Ltd
Ref: V1027/
Publication Date: 1990
Pages: 85 **Price:** 100 ECU

Name: *Alternative RTI Strategies for RFO Scenaria: Territoriality Principle: Applicability and Prospective RTI Applications Vol III*
Authors: Trademco Ltd
Ref: V1027/
Publication Date: 1990
Pages: 42 **Price:** 100 ECU

Name: *Alternative RTI Strategies for RFO Scenaria: Glossary of Terms Used in EUROFRET, Vol III*
Authors: Trademco Ltd
Ref: V1027/
Publication Date: 1990
Price: Free of charge

Name: *Alternative RTI Strategies for RFO Scenaria: Annexes to Volume I*
Authors: Trademco Ltd
Ref: V1027/
Publication Date: 1990
Price: Free of charge

Name: *Evaluation of Alternative RTI Strategies, Criteria of Evaluation and Preferred Action*
Authors: Trademco Ltd
Ref: V1027/
Publication Date: 1990
Price: 200 ECU

Name: *The Evolution of RTI in RFO: Actions and Impacts on the Organisational Structure of Road Freight Transport*
Authors: Trademco Ltd
Ref: V1027/
Publication Date: 1991
Price: 100 ECU

Name: *Towards a Systems Architecture*
Authors: Trademco Ltd
Ref: V1027/
Publication Date: 1991
Price: 100 ECU

V1028: TUNICS
Tunnel Integrated Control System

Final Report (Results and Recommendations)
Contractors: SAIT Electronics; Heusch Boesefeldt; Marconi Command & Control Systems
Ref: V1028/Fin
Publication Date: May 1991
Available from: CEC (1)
Pages: 20 **Price:** 5 ECU

The project is mainly focused on the study of a fully integrated tunnel control system, concentrating on efficiency levels of tunnel traffic and technical information acquisition, situation appraisal and action thereon, and dissemination of information to drivers. The work embraced defining recommendations on use and improvement of existing data acquisition subsystem equipment and traffic control schemes, reviewing existing underground-environment radio communication systems, exploring variable traffic signs, and reviewing existing access control systems. The objective of a recommendation for a fully open and modular system architecture integrating all tunnel requirements for improving safety, efficiency and cost reduction is achieved.

The following deliverables are available from Phillips, Heusch/Boesefeldt, Kl Johannisstr.9, D-20457 Hamburg, Germany:

Name: *Traffic Data Acquisition*
Authors: TUNICS Consortium
Ref: V1028/D120/1
Publication Date: 1989
Pages: 10 **Price:** On application

Name: *Traffic Management System - Requirements*
Authors: TUNICS Consortium
Ref: V1028/D420/1
Publication Date: 1989
Pages: 40 **Price:** On application

Name: *Traffic Data Acquisition - Recommendations*
Authors: TUNICS Consortium
Ref: V1028/D140/1
Publication Date: 1990
Pages: 36 **Price:** On application

Name: *Traffic Management Subsystem - Recommendations*
Authors: TUNICS Consortium
Ref: V1028/D440/1
Publication Date: 1990
Pages: 101 **Price:** On application

The following deliverables are also available from: Sait- Devlonics, M Pierrot/C Dombret, Chausee de Ruisbroek 66, 1190 Brussels, Belgium:

Name: *Recommendations for Implementation of Technical Management Sub-systems*
Authors: TUNICS Consortium
Ref: V1028/D300/1
Publication Date: September 1990
Pages: 197 **Price:** On application

Name: *Radio Coverage Requirements, Functions and Operations of a Tunnel Radio Communication Subsystem, and Tunnel Radio Communication Subsystem Architecture*
Authors: TUNICS Consortium
Ref: V1028/D510/1
Publication Date: 1989
Pages: 75 **Price:** On application

Name: *Recommendations for Variable Traffic Signs*
Authors: TUNICS Consortium
Ref: V1028/D520/1
Publication Date: June 1991
Pages: 41 **Price:** On application

Name: *Recommendations for the architecture of a Tunnel Integrated Control System*
Authors: TUNICS Consortium
Ref: V1028/D700/1
Publication Date: December 1990
Pages: 194 **Price:** On application

V1029: RDS-ALERT
RDS Advice and Problem Location for European Road Traffic

Final Report
Contractors: Castle Rock Consultants; Transport and Road Research Laboratory; Philips Bedrijven; British Broadcasting Corporation; Bosch; C.C.E.T.T.
Ref: V1029/15
Publication Date: November 1990
Available from: CEC (1)
Pages: 102 **Price:** 10 ECU

The project primarily aims to establish internationally accepted standards in Radio Data Systems (RDS) - TMC location coding, messages and message management, for use as part of a road traffic information system, focusing on bringing together all the national traffic messages developed to date, and creating an agreed international set. An additional objective is to ensure compatibility between the RDS-TMC receiver and other RTI equipment in the vehicle. Current proposals for one-sequence and multi-sequence messages are reviewed and evaluated in order to reach a starting consensus for experimental evaluation. A standardised protocol is successfully developed to achieve many of the driver information system objectives.

The following deliverables are also available from CEC (1):

Name: *Guidelines on Location Coding*
Authors: RDS-ALERT Consortium
Ref: V1029/3
Publication Date: September 1990
Pages: 77 **Price:** 8.5 ECU

Name: *Proposals for RDS-TMC Message Repertoir*
Authors: RDS-ALERT Consortium
Ref: V1029/4
Publication Date: August 1989
Pages: 26 **Price:** 5 ECU

Name: *Assessment Criteria and Measurement Scenarios*
Authors: RDS-ALERT Consortium
Ref: V1029/6
Publication Date: September 1989
Pages: 84 **Price:** 8.5 ECU

Name: *Report on Message Coding Field Tests*
Authors: RDS-ALERT Consortium
Ref: V1029/9
Publication Date: March 1990
Pages: 96 **Price:** 8.5 ECU

Name: *Report on Message Reception Field Tests*
Authors: RDS-ALERT Consortium
Ref: V1029/11
Publication Date: March 1990
Pages: 109 **Price:** 10 ECU

Name: *Field Trial Result and Test Strategy*
Authors: RDS-ALERT Consortium
Ref: V1029/12
Publication Date: September 1990
Pages: 60 **Price:** 8.5 ECU

Name: *Proposal for ALERT Coding Optimisation*
Authors: RDS-ALERT Consortium
Ref: V1029/13
Publication Date: September 1990
Pages: 55 **Price:** 8.5 ECU

Name: *ALERT Protocol Proposals*
Authors: RDS-ALERT Consortium
Ref: V1029/14
Publication Date: May 1990
Pages: 75 **Price:** 8.5 ECU

V1030: PAMELA
Pricing and Monitoring Electronically of Automobiles

Final Report

Contractors: University of Newcastle upon Tyne (UK) with Newcastle upon Tyne Polytechnic, Philips Research Laboratories, SAAB-Saab-Scania Combitech, Compagnie de Signaux et d'Equipments Electroniques, Philips Concepts and Application Laboratories, Empresa de Investigacao e Desenvolvimento de Electronica, Camara Municipal de Lisboa, Royal Institute of Technology
Ref: V1030/Fin
Publication Date: May 1992
Available from: CEC (1)
Pages: 45 **Price:** 5 ECU

The following deliverables are also available from CEC (1):

Name: *Strategies for Integrated Demand Management: The Case of Road-Use Pricing*
Authors: Prof. P.J. Hill, Dr M. Smart
Ref: V1030/1
Publication Date: September 1989
Pages: 93 **Price:** 8.5 ECU

Name: *The State-of-the-Art of Current ADS Technology and Applications*
Authors: P.T. Blythe et al
Ref: V1030/2
Publication Date: September 1989
Pages: 121 **Price:** 10 ECU

Name: *The State-of-the-Art of Current Technologies applied to Traffic Management Systems*
Authors: Dr E. Korolkiewicz
Ref: V1030/4
Publication Date: September 1989
Pages: 112 **Price:** 10 ECU

V1031
An Intelligent Traffic System for Vulnerable Road Users

Final Report (Revised)

Contractors: ITS, University of Leeds; West Yorkshire Highways Engineering and Technical Services; Traffic Research Centre, University of Groningn; Department of Traffic Planning, University of Lund; HB Modules Ltd
Ref: V1031/Fin
Publication Date: May 1992
Available from: CEC (1)
Pages: 66 **Price:** 8.5 ECU

The project aims to provide a set of tools for the creation of traffic systems that enhance the safety and mobility of pedestrians and cyclists, the latter designated vulnerable road users (VRUs). This aim is achieved in two ways; by developing a set of models of the traffic systems incorporating VRUs as an integral part, the models being built on existing models of the traffic system and incorporating information on VRU route choice criteria, and by evaluating and installing a number of RTI applications in signalling and junction control. The models can be used as tools to enable users to predict the effect of certain planning decisions upon the safety and vulnerability of VRUs.

The following deliverables are also available from CEC(1):

Name: *Problems for Vulnerable Road-Users in Great Britain*
Authors: M.R. Tight, O.M.J. Carston, D. Sherborne
Ref: V1031/1
Publication Date: May 1989
Pages: 26 **Price:** 5 ECU

Name: *Problems for Vulnerable Road-Users in Great-Britain, the Netherlands and Sweden*
Authors: M.R. Tight, O.M.J. Carston
Ref: V1031/2
Publication Date: July 1989
Pages: 27 **Price:** 5 ECU

Name: *Review of Literature on Pedestrian + Cyclist Route Choice Antenna*
Authors: P.G. Hopkinson, O.M.J. Carston, M.R. Tight
Ref: V1031/3
Publication Date: August 1989
Pages: 39 **Price:** 5 ECU

Name: *Microwave Detection of Vulnerable Road-Users*
Authors: D.J. Sherborne et al
Ref: V1031/7
Publication Date: September 1991
Pages: 45 **Price:** 5 ECU

Name: *Travel Characteristics of Pedestrians and Pedal Cyclists in a British, Dutch and Swedish Modelling Area*
Authors: I.N.L.G. Van Schagen
Ref: V1031/8A
Publication Date: September 1990
Pages: 40 **Price:** 5 ECU

Name: *Pedestrian + Pedal Cyclist Route Choice Criteria*
Authors: P.K. Westerdijk
Ref: V1031/8B
Publication Date: September 1990
Pages: 39 **Price:** 5 ECU

Name: *Trials with Microwave Detection of Vulnerable Road-Users and Preliminary Empirical Model Test*
Authors: L. Ekman, M. Draskoczy, eds
Ref: V1031/11
Publication Date: May 1992
Pages: 62 **Price:** 8.5 ECU

V1032: STRADA
Standardisation of Traffic Data Transmission and Management

Name: *Final Report (A Recommendation Report)*
Authors: I. Jorgensen, L. Bondo
Contractors: CETE Mediterranée, Administration des Routes, Danish Road Directorate, Bundesanstalt für Strassenwesen, AVE Verkehrs und Informationstechnik, Junta Autonoma de Estradas, SIAT, SETRA
Ref: V1032/12
Publication Date: May 1992
Available from: CEC (1)
Pages: 10 **Price:** 5 ECU

The project is designed to repeat, at the European level, the French and German efforts of national standardisation, SIREDO and TLS, extending the domain covered to road traffic information. Two objectives are targeted, the proposal of a standard for traffic data and their exchange, and the study of a European data interchange system and development of five prototypes, which have been tested in five countries. The first output of the project is a structured data dictionary, allowing people and systems to speak the same language. A value added network is also proposed using the public WAN architecture and exclusively open standards, enabling use of a single interface for every exchange.

V1033: AUTOPOLIS
Automatic Policing Information Systems

Final Report
Contractors: Traffic Research Centre, University of Groningen; University College Dublin; Institute of Transport Economics; CETE Mediterranée; BEVAC Consultants; University of Valencia
Ref: V1033/Fin
Publication Date: May 1992
Available from: CEC (1)
Pages: 35 **Price:** 5 ECU

The project addresses the problem of detecting traffic law violations, providing relevant feedback to the driver and registering the committed violations for further legal processing. The general objective is to determine the possibilities of, and the requirements for, implementation of automatic policing information systems for dealing with the above. Three sub-systems - on-site, in-vehicle, and integrated - are specified for monitoring and registering violations. An analysis is carried out on legal requirements and of the social and cultural factors affecting road user and road-transport-relevant social actor attitudes towards, and acceptance of, on-site based automatic policing information systems.

The following deliverables are also available from CEC (1):

Name: *Intelligent Automatic Monitoring of Vehicle Behaviour: Outline Specifications for the AUTOPOLIS Project*
Authors: J.G. Harper
Ref: V1033/3
Publication Date: September 1990
Pages: 80 **Price:** 8.5 ECU

Name: *Legal Requirements for Automatic Policing Information Systems*
Authors: P. Van Ophensden
Ref: V1033/4
Publication Date: August 1990
Pages: 114 **Price:** 10 ECU

Name: *Current Technology, Reliability and Implications for Automatic Policing*
Authors: J.G. Harper, T. Nauwelaerts
Ref: V1033/5
Publication Date: September 1990
Pages: 100 **Price:** 10 ECU

V1034: RIMES
Road Information and Management Euro-System

Final Report

Contractors: Telinfo Integrated Systems; Somerset County Council; Road Data Laboratory
Ref: V1034/Fin
Publication Date: August 1992
Available from: CEC (1)
Pages: 31 **Price:** 5 ECU

The key aims of the project are to introduce the experiment and knowledge of the public administrations to the DRIVE programme, to introduce standards to improve co-operation between public administrations, and to reconcile DRIVE standards with RDB requirements in order to provide a robust bridge for the sharing of data. Overall aims of the project are to describe the wide range of existing data bases, to establish an idealised data model, and to isolate the common elements which would contribute to the gateway for a sharing of data and for the future transference of data to RTI systems in DRIVE. The key achievement is the formulation of the Road Administration Data Exchange Format proposal to access information held in Public Administration Road Data Bases.

The following deliverables are also available from CEC (1):

Name: *Synthesis Report on the State of the Automobile*
Authors: SIA, Informabel, RDL, SCC
Ref: V1034/3
Publication Date: November 1989
Pages: 138 **Price:** 10 ECU

Name: *Report on Agreed Interface*
Authors: SIA, Road Data Laboratory, Telinfo, Integrated Systems, Somerset County Council
Ref: V1034/9
Publication Date: October 1991
Pages: 170 **Price:** 13 ECU

Name: *General Synthesis Report: AC4.4*
Authors: SETRA, Road Data Laboratory, Telinfo Integrated Systems, Somerset County Council
Ref: V1034/11
Publication Date: April 1992
Pages: 92 **Price:** 8.5 ECU

V1035: CHRISTIANE
Motorway Traffic Flow Monitoring and Control

Final Report

Contractors: INRETS; Scetauroute; Technische Universität München; TRRL; Wootton Jeffreys Consultants; University of Thessaloniki; Rijkswaterstaat
Ref: V1035/22 (Fin)
Publication Date: February 1992
Available from: CEC (1)
Pages: 83 **Price:** 8.5 ECU

The following deliverable is also available from CEC (1):

Name: *Executive Summary*
Authors: CHRISTIANE Consortium
Ref: V1035/Exe
Publication Date: February 1992
Pages: 4 **Price:** 2.5 ECU

V1036: EVA
Evaluation Process for Road Transport Informatics

Final Report

Contractors: Technische Universität München, Marcial Echenique and Partners Ltd, Institut für Stadtbauwesen RWTH Aachen, Traffic Research Centre of Finland, Technische Universität Berlin, Royal Institute of Technology Stockholm, Daimler-Benz, National Technical University of Athens, Organisation of Athens, Italian National Research Council
Ref: V1036/Fin
Publication Date: March 1992
Available from: CEC (1)
Pages: 152 **Price:** 13 ECU

The main task of the project is to design, program and test an evaluation framework for a socio-economic evaluation (context, criteria, values, methods tools) of RTI systems applications, based on an integrated methodology, on common criteria and on common values. The framework provides the methodological background and guidelines on how to assess the benefits and costs to providers, users, and non-users of RTIs. The project is structured by seven leadpackages, each consisting of several individual workpackages, of : design of approach; evaluation methodology, evaluation criteria, values, programme tool (EVA computer programme), test evaluation production (framework validation), and co-ordination and reporting.

The following deliverable is also available from CEC (1):

Name: *Evaluation Methodology (Final Report)*
Authors: EVA Consortium
Ref: V1036/30
Publication Date: December 1991
Pages: 90 **Price:** 8.5 ECU

V1037: STAMMI
Definition of Standards for In-Vehicle Man-Machine Interface

Final Report
Contractors: Husat Research Centre; YARD Ltd; INRETS; TÜV Bayern; MERIT C.G.P.
Ref: V1037/Fin
Publication Date: April 1992
Available from: CEC (1)
Pages: 190 **Price:** 13 ECU

The project aims to provide knowledge towards the development of European standards for in-vehicle, man-machine interaction, in order to promote the design of information systems which are usable and safe. Tasks covered are: review of current European standards, collation of supporting information for standards development, development of a list of MMI criteria based on literature, elicitation of the views of standard users on requirements for the structure, content and use of MMI standards for RTI systems, and discussion of the issues associated with development and use of in-vehicle MMI standards.

The following deliverables are also available from CEC(1):

Name: *Ergonomic Criteria for In-Car Man Machine Interface*
Authors: The Consortium
Ref: V1037/2
Publication Date: May 92
Pages: 95 **Price:** 8.5 ECU

Name: *Typology of French Drivers*
Authors: A. Alazet, A. Pauzié, F. Regin
Ref: V1037/3
Publication Date: December 1991
Pages: 115 **Price:** 10 ECU

Name: *Experimental Approach to the Definition of Standards for the In-Vehicle Man-Machine Interface (Progress Report)*
Authors: T. Ross, H. Peters, A. Pauzié
Ref: V1037/4.1
Publication Date: March 1991
Pages: 120 **Price:** 10 ECU

Name: *Product Performance of Process Standards*
Authors: A.F.S. Salway, BAE SEMA
Ref: V1037/7.9
Publication Date: October 1991
Pages: 60 **Price:** 8.5 ECU

Name: *Exploration of Procedural Standards for MMI*
Authors: D.J. Carr, BAE SEMA
Ref: V1037/8
Publication Date: October 1991
Pages: 40 **Price:** 5 ECU

Name: *The List of European Standards*
Authors: TÜV Bayern, Husat, INRETS, YARD, MERIT
Ref: V1037/21
Publication Date: June 1989
Pages: 38 **Price:** 5 ECU

Name: *Executive Summary*
Authors: T.Ross, A.M.Parkes
Ref: V1037/Exe
Publication Date: April 1992
Pages: 13 **Price:** 5 ECU

V1038: DACAR
Data Acquisition and Communication Techniques and their Assessment for Road Transport

Final Report
Contractors: Bakkenist Management Consultants, Götting K.G., Valeo, Volkswagon, Standard Elektrik Lorenz, ANT Nachrichtentechnik, Marconi, Fondazione Ugo Bordini, Radio Holland, TRRL, Microsense Systems
Ref: V1038/Fin
Publication Date: January 1991
Available from: Dr W.Hengeveld, Bakkenist Management Consultants, P.O Box 23 103, 1100 DP Amsterdam, The Netherlands
Tel: +31 20 695 6666 Fax: +31 20 6698 2426
Pages: 73 **Price:** 95 ECU

The project evaluates the potential of artificial intelligence (AI) based software approaches dealing with traffic engineering problems which can be solved only inadequately by conventional methods or which

have been excluded from computerisation. Classes of AI applications are identified similar or analogous to a given TE problem. Together with this a concise set of criteria and prerequisites which include solution space, computational complexity, uncertainty of input parameters, and presence of heuristics is presented for identification of problems suitable for application of AI. Several prototype projects are proposed that maximise the potential for showing AI to be a powerful tool for problem-solving and enhancement of existing systems.

The following deliverables are also available from Bakkenist Management Consultants:

Name: *Telecommunications Aspects- Car, Road and Roadside Aspects*

Authors: Bakkenist Management Consultants, Fondazione Ugo Bordoni, VolksWagen AG
Ref: V1038/1.2
Publication Date: January 1991
Price: 95 ECU

Name: *Implementation Aspects*

Authors: Bakkenist Management Consultants, Fondazione Ugo Bordoni, VolksWagen AG
Ref: V1038/1.3
Publication Date: January 1991
Pages: 47 **Price:** 95 ECU

Name: *Communication Techniques in Road Traffic Informatics*

Authors: Bakkenist Management Consultants, ANT Nachrichtentechnik, Valeo Electroniques, Fondazione Ugo Bordoni, VolksWagen AG, Marconi CS, Gotting KG, Standard Elektrik Lorenz
Ref: V1038/1.5
Publication Date: 1991
Pages: 244 **Price:** 125 ECU

Name: *Concise Report and Outlook Second Contract Period*

Authors: Bakkenist Management Consultants
Ref: V1038/1.8
Publication Date: June 1991
Price: 95 ECU

V1039: ATTAIN
Applicability in Transport and Traffic of Artificial Intelligence

Final Report

Contractors: Forschungszentrum Informatik, Automa, Heusch-Boesefeldt, CETE Mediterranée, University of Leeds
Ref: V1039/Fin
Publication Date: September 1990
Available from: CEC (1)
Pages: 130 **Price:** 10 ECU

The following deliverables are also available from CEC (1):

Name: *State of the Art in A.I with Respect to Traffic Engineering*

Authors: ATTAIN Consortium
Ref: V1039/5
Publication Date: May 1989
Pages: 195 **Price:** 13 ECU

Name: *Identification of Key Areas in the Field of Road Traffic, Transport and Safety Engineering*

Authors: ATTAIN Consortium
Ref: V1039/M 3.1
Publication Date: July 1989
Pages: 100 **Price:** 10 ECU

Name: *Survey of Artificial Intelligence Applications in Traffic Engineering*

Authors: ATTAIN Consortium
Ref: V1039/12 (M2.1B)
Publication Date: August 1990
Pages: 108 **Price:** 10 ECU

V1040: Safety Scenario
Identification of Hazards

Final Report

Contractors: University of Nottingham; INRETS; University of Lund; University of Munich; Communication and Management Systems Unit; Husat Research Centre
Ref: V1040/Fin
Publication Date: May 1990
Available from: CEC (1)
Pages: 9 **Price:** 5 ECU

The project has two main objectives; identification of common accident types with similar causation, and

describing them to assist designers of RTI devices in lowering frequency of road accidents; and formulation of safety targets with provision of guidlelines for new RTI and IRTE systems. Complementary techniques used for the first objective include multiple linear regression, and cluster, factor, correspondence and discriminant function analyses. Four major accident types are noted. The main approaches to the second objective are: reducing respectively errors, the likelihood that errors will lead to accidents, and the consequences of accidents. Work on this project is continued in project V1062.

The following deliverables are also available from CEC(1):

Name: *Short Report on Terminology - Definition of Terms and Methodology*
Authors: University of Nottingham
Ref: V1040/1
Publication Date: August 1989
Pages: 3 **Price:** 2.5 ECU

Name: *Accident Analyses: Accident Blackspots - A brief Review*
Authors: A.M. Parkes
Ref: V1040/3
Publication Date: May 1989
Pages: 35 **Price:** 5 ECU

Name: *Accident Cost Exposure - French Published Statistics*
Authors: A.M. Parkes
Ref: V1040/4
Publication Date: June 1989
Pages: 60 **Price:** 8.5 ECU

Name: *Observational Studies*
Authors: INRETS, PARIS, FRANCE
Ref: V1040/5
Publication Date: May 1989
Pages: 45 **Price:** 5 ECU

Name: *Combined Report on Swedish Published Statistics: Accident Costs, Exposure and Interviews: Conflict Studies*
Authors: University of Lund
Ref: V1040/6
Publication Date: May 1989
Pages: 40 **Price:** 5 ECU

Name: *Accident Costs Exposure - National Accident Statistics (Fed.Rep.of Germany)*
Authors: Technical University of Munich
Ref: V1040/7
Publication Date: May 1989
Pages: 50 **Price:** 8.5 ECU

Name: *Integration of Different Approaches*
Authors: University of Nottingham
Ref: V1040/12
Publication Date: August 1989
Pages: 25 **Price:** 5 ECU

Name: *The Integration of Hazard Identification Techniques*
Authors: The Identification of Hazard Consortium
Ref: V1040/13 (WP 4.0)
Publication Date: February 1990
Pages: 20 **Price:** 5 ECU

Name: *Formulation of Safety Objectives*
Authors: University of Lund
Ref: V1040/WP 5.3
Publication Date: May 1990
Pages: 28 **Price:** 5 ECU

Name: *Formulation of Safety Objectives: Review of Safety Objectives; Model/Selection of Risk etc.*
Authors: C.I. Howarth, G. Underwood
Ref: V1040/14 (WP 5.6)
Publication Date: May 1990
Pages: 17 **Price:** 5 ECU

V1041: GIDS
Generic Intelligent Driver Support

Final Report
Contractors: University of Groningen; INRETS; TNO Institute for Perception; Medical Research Council APU; Philips Research Laboratories; YARD Ltd; Delft University of Technology; SAAB/SCANIA; University College Dublin; RENAULT; Universität der Bundeswehr; Swedish Road and Traffic Research Institute.
Ref: V1041/Fin
Publication Date: August 1990
Available from: CEC (1)
Pages: 134 **Price:** 10 ECU

The overall aim of the project is to determine the requirements and design standards for a class of GIDS systems that is maximally consistent with the information requirements and performance capabilities of drivers. Goals are: definition of functional requirements of GIDS systems, determination of impact of new RTI systems on task

representations and behaviour of drivers regarding navigation, manoeuvring, and driving control aspects, determination of interactive communications between driver and new RTI systems, development of hardware and software for implementation of prototype GIDS system, determination of system impact on driving safety, efficiency, training and system acceptance, and showing the validity of the GIDS concept in field tests.

The following deliverables are also available from CEC(1):

Name: *Impact of Collision Avoidance Systems on Driver Behaviour and Traffic Safety*
Authors: W. Janssen
Ref: V1041/2
Publication Date: October 1989
Pages: 35 **Price:** 5 ECU

Name: *Navigation Information Requirement Literature Review*
Authors: T. Rothengatter
Ref: V1041/3
Publication Date: October 1989
Pages: 93 **Price:** 8.5 ECU

Name: *An Experimental Evaluation of In-Vehicle Collision Avoidance Systems*
Authors: W. Janssen, L. Nielssen
Ref: V1041/4
Publication Date: February 1990
Pages: 40 **Price:** 5 ECU

Name: *Collision Avoidance Systems - Effects of Different Levels of Task Allocation on Driver Behaviour*
Authors: L. Nielssen, H. Alm, W. Janssen
Ref: V1041/5
Publication Date: September 1991
Pages: 26 **Price:** 5 ECU

Name: *Adaptable Driver-Car Interfacing and Mental Workload; A Review of the Literature - Final Version*
Authors: W.B. Verwey
Ref: V1041/9
Publication Date: February 1990
Pages: 40 **Price:** 5 ECU

Name: *State of the Art and Recommendations for Characteristics of Speed and Steering Support Systems*
Authors: B. Färber, B. Färber, H. Godthelp, J. Schumann
Ref: V1041/10
Publication Date: February 1990
Pages: 90 **Price:** 8.5 ECU

Name: *A Study of the Influence of the Complexity and Modality of Driver Route Information on the Detection of Visual Stimuli during a Simulated Driving Task: A critical Evaluation and R E-Analysis*
Authors: C.M. Gundy
Ref: V1041/14
Publication Date: August 1991
Pages: 60 **Price:** 8.5 ECU

Name: *Demonstration of the First Generation Prototype GIDS*
Authors: M.J. Kuiken
Ref: V1041/Gen.3A
Publication Date: June 1992
Pages: 52 **Price:** 8.5 ECU

Name: *Evaluation of Prototype Implementation in Terms of Handling Aspects*
Authors: B. Färber, K. Naab, G. Schumann
Ref: V1041/Con 03
Publication Date: December 1991
Pages: 60 **Price:** 8.5 ECU

Name: *Meeting the Support Requirements of Drivers with different Levels of Traffic Experience: An Evaluation*
Authors: J.A. Groeger, G.E. Grande
Ref: V1041/ADA 3
Publication Date: February 1992
Pages: 45 **Price:** 5 ECU

Name: *GIDS Implementation: the Interactive Traffic and Driving Simulation and the ICACAD*
Authors: GIDS Consortium
Ref: V1041/36/DIA/DIS/HAR
Publication Date: May 1992
Pages: 22 **Price:** 5 ECU

The following deliverables are also available from M.Harmsen, P.O. Box 69, 9750 AB Haren, The Netherlands
Tel: +31 50 636758 Fax: +31 50 636784

Name: *Preliminary Design Specifications for Appropriate Feedback Provisions to Drivers with Differing Levels of Traffic Experience.*
Authors: J.A.Groeger, M.J.Kuiken, G.Grande, P.Miltenburg, I.D.Brown & J.A.Rothengatter
Ref: V1041/ADA 1
Publication Date: February 1991
Pages: 136 **Price:** 12 ECU

Name: *Report on Feedback Requirements and Performance Differences of Drivers*
Authors: M.J.Kuiken, J.A.Groeger
Ref: V1041/ADA 2
Publication Date: June 1990
Pages: 99 **Price:** 12 ECU

Name: *Laboratory and Field Studies on Route Representation and Driver's Cognitive Models of Routes*
Authors: W.van Winsum, H.Alm & J.M.Schraagen
Ref: V1041/NAV 2
Publication Date: February 1990
Pages: 73 **Price:** 12 ECU

Name: *Demonstration and Evaluation Studies of the GIDS prototype*
Authors: W.H.Janssen, W.B.Verwey,M.J.Kuiken & P.G.M.Miltenburg
Ref: V1041/Man 4/NAV 5/DIS 3
Publication Date: December 1992
Pages: 19 **Price:** 12 ECU

Name: *Conceptual Framework for Generic Driver Support*
Authors: A.Smiley & J.A.Michon
Ref: V1041/GEN 1
Publication Date: July 1989
Pages: 37 **Price:** 12 ECU

Name: *A Preliminary Definition of the GIDS System*
Authors: J.A.Michon & M.J.Kuiken
Ref: V1041/GEN 2
Publication Date: December 1990
Pages: 20 **Price:** 12 ECU

Name: *Cognitive and Normative Models of Car Driving*
Authors: W.van Winsun
Ref: V1041/DIA 3
Publication Date: 1990
Price: 12

V1042: ITHACA
In-Depth Accident Data Collection and Analysis

Final Report
Contractors: Technische Universität München; University of Groningen; University of Nottingham; Institute of Transport Economics; BMW, CETE Sud-Ouest; VOLVO
Ref: V1042/Fin
Publication Date: December 1992
Available from: CEC (1)
Pages: 85 **Price:** 8.5 ECU

V1043: CIDER
DRIVE Integrated Telecommunications

Final Report
Contractors: British Telecom; FIAR; Nokia; Telefonica; Swedish Telecom Radio; Imperial College London; Philips Research Labs
Ref: V1043/Fin
Publication Date: June 1992
Available from: CEC (1)
Pages: 9 **Price:** 5 ECU

The following deliverables are also available from CEC (1):

Name: *Executive Summary*
Authors: CIDER Consortium
Ref: V1043/Exe
Publication Date: June 1992
Pages: 25 **Price:** 5 ECU

Name: *Description Models to Evaluate Telecommunications Structures Including Specialised Networks*
Authors: D.H. Williams (editor); D. Golding, BT; R. Mannings, BT; I. Paton, BT; N. Wall, BT
Ref: V1043/11
Publication Date: March 1992
Pages: 35 **Price:** 5 ECU

Name: *Study of Dynamic Routing - Algorithms for Optimal Network Link Selection in DRIVE Normalised Transmission*
Authors: G.C. Seeling, Dr M.K. Gurcan
Ref: V1043/13
Publication Date: December 1991
Pages: 50 **Price:** 8.5 ECU

Name: *Integrity of Data for DRIVE Communications Channels*

Authors: R. Hulthén, T. Andersson, Z. Ghebretensae, K. Gunmar, H. Sandström
Ref: V1043/15
Publication Date: February 1992
Pages: 180 **Price:** 13 ECU

Name: *Communication Systems - Architectures*

Authors: K. Laraqui, A. Nazari
Ref: V1043/16
Publication Date: February 1992
Pages: 110 **Price:** 10 ECU

V1044: FLEET
Freight and Logistics Efforts for European Traffic

Final Report (Draft)

Contractors: Daimler-Benz (Dornier); PTV; TFK; CSST; TRK-VTI; Sealord Transport Consultants; MAN; gsi-DATEL; VOLVO; CETE Méditerranée; NEE
Ref: V1044/Fin
Publication Date: May 1992
Available from: CEC (1)
Pages: 120 **Price:** 10 ECU

The project investigates the potential of new information and communication technologies in order to establish integrated pan-European freight and fleet management systems. The tasks pursued are: improvement of road transport efficiency by improved capacity utilisation and better compatibility of fleet operations with traffic management; reduction of environmental pollution caused by road traffic by reduction of road capacity demand and fuel consumption per transported volume and by better utilisation of intermodal options; and improvement of road safety by improved planning, control and information of road transports, especially for dangerous cargo, and by improved working conditions for the driver.

The following deliverables are also available from CEC(1):

Name: *Specification of Fleet Management Requirements and Outlook to Integrated Logistic Freight and Fleet Management Scenario*

Authors: FLEET Consortium
Ref: V1044/3 (1.3)
Publication Date: January 1990
Pages: 115 **Price:** 10 ECU

Name: *Needs for Standardization and Technological Development*

Authors: FLEET Consortium
Ref: V1044/8 (2.3)
Publication Date: June 1991
Pages: 62 **Price:** 8.5 ECU

Name: *Executive Summary*

Authors: FLEET Consortium
Ref: V1044/Exe
Publication Date: May 1992
Pages: 14 **Price:** 5 ECU

Name: *Feasibility Evaluation Part II*

Authors: FLEET Consortium
Ref: V1044/3.1.II
Publication Date: November 1991
Pages: 160 **Price:** 13 ECU

V1045: PARCMAN
Parking Management, Control and Information Systems

Final Report

Contractors: NTU Athens; Organisation of Athens; Intracom; University of Oxford; Dublin City University
Ref: V1045/Fin
Publication Date: August 1992
Available from: CEC (1)
Pages: 167 **Price:** 13 ECU

The aim of the project is to develop an efficient parking management, control and information system, based on the premise of forward projection of the prevailing supply and demand conditions for parking. This involved the six objectives of: identification of the elements and structure of parking control strategies, specification of a parking control model, specification of strategies for parking control that govern information required by drivers, specification of a system for parking control consisting of hardware

and software, specification of the development of a prototype within the overall development of RTI technology, and setting up and conducting a demonstration programme for prototype testing.

The following deliverables are also available from CEC(1):

Name: *Demonstration Project*
Authors: PARCMAN Consortium
Ref: V1045/1
Publication Date: August 1992
Pages: 68 **Price:** 8.5 ECU

Name: *Executive Summary*
Authors: PARCMAN Consortium
Ref: V1045/Exe
Publication Date: August 1992
Pages: 10 **Price:** 8.5 ECU

V1046: FRIDA
Framework for Integrated Dynamic Analysis of Travel and Traffic

Final Report (Systems Specifications)
Contractors: NTU Athens; Organisation of Athens; Future Software Systems; Rwth Aachen
Ref: V1046/Fin
Publication Date: June 1991
Available from: CEC (1)
Pages: 101 **Price:** 10 ECU

V1047: ODIN
Origin-Destination Information vs Traffic Control

Final Report
Contractors: CSST; Technische Universität München; TU Hamburg-Harburg; University of Thessaloniki; Heusch-Boesefeldt; Transport and Road Research Laboratory; Newcastle University
Ref: V1047/Fin
Publication Date: February 1992
Available from: CEC (1)
Pages: 54 **Price:** 8.5 ECU

The following deliverable is also available from CEC (1):

Name: *Executive Summary*
Authors: ODIN Consortium
Ref: V1047/Exe
Publication Date: February 1992
Pages: 10 **Price:** 5 ECU

V1048: DOMINC
Advanced Control Strategies and Methods for Motorway RTI Systems of the Future

Final Report
Contractors: CSST; Volkswagen; Heusch-Boesefeldt; MIZAR; Steierwald Schönharting und Partner; BMW; TU Hamburg-Harburg; Renault; Daimler-Benz
Ref: V1048/210.4 & 320.J (Fin)
Publication Date: May 1992
Available from: CEC (1)
Pages: 23 **Price:** 5 ECU

The following deliverable is also available from CEC (1):

Name: *Executive Summary*
Authors: DOMINC Consortium
Ref: V1048/Exe
Publication Date: May 1992
Pages: 12 **Price:** 5 ECU

V1049
Field Trials

Final Report
Contractors: ZELT; University of Salford; Heusch-Boesefeldt; TU München
Ref: V1049/Fin
Publication Date: August 1990
Available from: CEC (1)
Pages: 149 **Price:** 10 ECU

The following deliverable is also available from CEC (1):

Name: *Executive Summary*
Authors: FIELD TRIALS Consortium
Ref: V1049/Exe
Publication Date: 1991
Pages: 10 **Price:** 5 ECU

V1050: DRACO
Driving Accident Coordinating Observer

Final Report (Recommendations for the In-vehicle DRACO)
Contractors: Queen Mary and Westfield College; MAN Technologie GmbH; The Motor Industry Research Association; University of Bremen; Institute for Social Science Research; Mannesmann Kienzle GmbH; Industrie per lo Spazio e le Communicazioni; The Royal Automobile Club
Ref: V1050/Fin
Publication Date: March 1992
Available from: CEC (1)
Pages: 20 **Price:** 5 ECU

The following deliverable is also available from CEC (1):

Name: *Executive Summary*
Authors: DRACO Consortium
Ref: VFV1050/Exe
Publication Date: March 1991
Pages: 10 **Price:** 5 ECU

V1051: DRIVE SAFELY
Procedure for Safety Submissions for RTI Systems

Final Report
Contractors: TÜV Rheinland; Program Validation Ltd; The University of Leeds; TNO
Ref: V1051/17
Publication Date: 1992
Available from: Mr Heinz Trier, TÜV Rheinland e.V.
Tel: +49 221 806 2421 Fax: +49 221 806 1372
Pages: 215 **Price:** 60 ECU

The report describes the DRIVE work done to propose the basis for European standards for the development of safe RTI systems, with their promotion via the Certification Authority. The philosophy behind the methods proposed for system development, electronic hardware, and software aspects, together with their certification is discussed. Three main areas in the problem of road traffic safety are identified by a 'Safety Task Force' of DRIVE I projects: system safety, man machine interaction and traffic safety; the project recognises and addresses the problem tht most of the mainly random or systematic failures occurring in a road transport situation are caused by human error.

V1052: ICARUS
Interurban Control and Road Utilisation Simulation

Final Report
Contractors: University of Southampton; A.Apostoleris and Associates; University of Bremen; Stratec; University of Karlsruhe; University of München; Royal Institute of Technology; SINTEF
Ref: V1052/30
Publication Date: 1992
Available from: Prof. M. McDonald, TRG, Civil Engineering, University of Southampton, Southampton SO9 5NH, UK
Tel: +44 703 592192 Fax: +44 703 593152
Pages: 260 **Price:** 61.72 ECU

The project aims at the development and use of a series of calibrated microscopic simulation models to investigate the potential range of RTI measures to provide improvements in efficiency, safety and economy on interurban highways. The models are: MISSION, for simulation of traffic flow on multi lane, one-way highways, SWEDISH, for simulating traffic flow on two and three lanes of two way traffic, and CURITAS, simulating automatic control systems for vehicle movement. The three main areas investigated are: headway advice and control systems, acting on vehicle to vehicle-following relationships; speed advice and control systems; and lane changing aids on multi-laned roads, and overtaking aids on two lane, two-way roads.

V1053: MODEM
Modelling of Emission and Consumption in Urban Areas

Final Report

Contractors: INRETS; University of Liege; RRL; TUV Rheinland
Ref: V1053/Fin
Publication Date: June 1992
Available from: CEC(1)
Pages: 54 **Price:** 8.5 ECU

The project aims primarily to develop a mathematical model that estimates vehicle emissions and fuel consumption as a function of the instantaneous operating parameters of the vehicle. A second aim is to assess the possible influence of improved traffic management on its environmental impact, ie, noise and air pollution. The effects on driver behaviour are examined. The processing of urban speed curves allows the design of 14 driving cycles representative of urban characteristics and of all passenger car behaviour. A model of instantaneous exhaust emission is presented. Thirdly, the long term effects of RTI, vehicle design and regulations on exhaust emissions and noise levels are assessed and compared.

The following deliverables are also available from CEC(1):

Name: *Measurements of the Driving Behaviour and the Vehicle Operations in Actual Uses - Method*
Authors: MODEM Consortium
Ref: V1053/1
Publication Date: December 1989
Pages: 30 **Price:** 5 ECU

Name: *Review of Existing Data on Traffic Noise*
Authors: MODEM Consortium
Ref: V1053/2(a)
Publication Date: February 1990
Pages: 64 **Price:** 8.5 ECU

Name: *Link between Traffic Characterstics Vehicle Operation Conditions and Pollution Emissions*
Authors: T.J.Barlow, R.Joumard, J.Nemerlin
Ref: V1053/8
Publication Date: June 1992
Pages: 74 **Price:** 8.5 ECU

Name: *Comparison of Calculated and Measurement noise and Emissions from traffic in Urban Areas*
Authors: MODEM Consortium
Ref: V1053/9
Publication Date: May 1992
Pages: 33 **Price:** 5 ECU

Name: *Relative Effectiveness of Improved Vehicle Technology and Traffic Management to Reduce Exhaust Emissions and Consumption*
Authors: A.J.Hickman, T.J.Barlow, R.Joumard, D.H. Assell
Ref: V1053/10
Publication Date: June 1992
Pages: 16 **Price:** 5 ECU

V1054: ASTERIX
System and Scenario Simulation for Testing RTI Systems

Final Report

Contractors: Universitat Politecnica de Catalunya; University of Bremen; TRRL; Syseca; CSST; CERT; University of Leeds, ITS; University of Linköping
Ref: V1054/D8.1
Publication Date: April 1992
Available from: J. Barcelo, Universitat Politecnica de Catalunya, Department of Statistics and O. R., Pau Gargallo 5, 0828 Barcelona, Spain
Tel: +343 401 70 33 Fax: +343 401 70 40
Pages: 50 **Price:** 15 ECU

The report describes the ASTERIX project which deals with two main tasks in the DRIVE Workplan, T206 - System and Scenario Simulation, and T307 - Traffic Test Models for RTI application. The first of two levels of work has developed a software simulation environment embedding traffic simulation systems (TSS) SATURN, CONTRAM, and SITRA-B+. A system shell links the user to these systems and to a multimodel transportation network database. The second level of work assesses new RTI systems, simulated by TSS, which work at regional level, on intermediate-size networks, and at local level, with ASTERIX providing full integration. Data can be retrieved from the database, formatted, the simulation run activated, and results stored and displayed graphically.

The following deliverables are also available from the Universitat Politecnica de Catalunya:

Name: *Report on Assignment Based Procedures*
Authors: Universitat Politecnica de Catalunya and Linköping University
Ref: V1054/D7
Publication Date: July 1991
Pages: 270 **Price:** 25 ECU

Name: *Asterix User's Manual*
Authors: Universitat Politecnica de Catalunya and Linkoping University
Ref: V1054/D8.2
Publication Date: April 1992
Pages: 130 **Price:** 20 ECU

V1055
AI Techniques for Traffic Control

Final Report
Contractors: AUTOMA; Senter for Industriforskning; Heusch-Boesefeldt; IASI-CNR; Universität Karlsruhe FZI
Ref: V1055/Fin
Publication Date: February 1992
Available from: CEC(1)
Pages: 176 **Price:** 13 ECU

The project addresses the basic topics of DRIVE task T332, with the major objectives of the study being the design and development of artificial intelligence (AI) methods to be used for real-time traffic control and surveillance operations. Research is aimed at developing AI and knowledge-based software modules which can be integrated in current urban traffic control systems to: enhance data sets collected in real time for decision making, analyse collected data for recognition of critical traffic patterns and situations, predict qualitatively near-future traffic situations for advance recognition of network changes, and improve the management of available control strategies using an enlarged base of information.

The following deliverables are also available from CEC (1):

Name: *Recommendations and Proposal for Demo Project*
Authors: AI Techniques for Traffic Control Consortium
Ref: V1055/13
Publication Date: December 1991
Pages: 53 **Price:** 8.5 ECU

Name: *Executive Summary*
Authors: AI Techniques for Traffic Control Consortium
Ref: V1055/16
Publication Date: December 1992
Pages: 25 pages **Price:** 5 ECU

V1056: MONICA
System Integration for Incident-Congestion Detection and Traffic Monitoring

Final Report
Contractors: Transport and Road Research Laboratory; TU Hamburg-Harburg; CSST; INRETS; Wootton Jeffreys Consultants; Siemens-Plessey; Steierwald Schonharting und Partner; Siemens; Laboratory Central des Points et Chausees; Heusch-Boesefeldt
Ref: V1056/Fin
Publication Date: January 1992
Available from: CEC(1)
Pages: 65 **Price:** 8.5 ECU

The project aims to investigate and develop techniques and systems for automatic incident detection (AID) and traffic monitoring in urban and extra-urban areas. Information on the state of road traffic is derived from urban traffic control systems, motorway sensors, dynamic route guidance systems, image processing techniques, in-vehicle equipment and knowledge-based systems. Strategies are developed for the detection of incidents, and are compared in terms of internal and external requirements and restrictions, effectiveness of performance, implementation costs, and development timescales. A multimodel approach to AID is recommended where the model used to detect incidents is selected from a group of algorithms on the basis of premium effectiveness.

V1057: SECFO
Systems Engineering and Consensus Formation Office

Final Report

Contractors: Daimler-Benz; Philips; ADAC; Renault; ASFA; Saintrasa; BMW; Siemens; CSST, Mizar, MVA; STRB; ME&P; Volvo
Ref: V1057/11
Publication Date: December 1991
Available from: CEC(1)
Pages: 11 **Price:** 5 ECU

The project aims at the development of an overall view on RTI, the integration of the research results from the various DRIVE projects, and at the creation of consensus within DRIVE and with the PROMETHEUS programme, on technical and strategic key issues related to RTI implementation. On the European level, lack of standardised up-to-date traffic and travel information is seen as a major obstacle to RTI implementation. Highest priorities for consensus on implementation are identified as: agreement on key policy issues, strategies for co-ordinated gradual implementation, appropriate institutional arrangements, public/private financing and operating schemes, and standardisation on the European and global scale.

The following deliverables are also available from CEC (1):

Name: *Report on IRTE in US and Japan*
Authors: T. Karlson, J. Olszewski, R. Schüssler
Ref: V1057/3 (WP 2/1)
Publication Date: October 1989
Pages: 50 **Price:** 8.5 ECU

Name: *Early IRTE Scenario*
Authors: The SECFO Consortium
Ref: V1057/4 (WP 2/2)
Publication Date: July 1990
Pages: 70 **Price:** 8.5 ECU

Name: *Preliminary RTI Functional Requirements*
Authors: G. Lerner, V. Mauro, G. Beccaria, H.P. Benzing
Ref: V1057/5 (WP 4/1)
Publication Date: July 1990
Pages: 95 **Price:** 8.5 ECU

Name: *IRTE Systems Evaluation - Methods and Examples*
Authors: The SECFO Consortium
Ref: V1057/6 (WP 5/1)
Publication Date: September 1990
Pages: 200 **Price:** 20 ECU

Name: *Towards an Integrated RTI Communications Architecture*
Authors: Dr G. Freij
Ref: V1057/8 (WP 4.8/2)
Publication Date: March 1991
Pages: 57 **Price:** 8.5 ECU

Name: *Preliminary Requirements for a Traffic Data Interchange Network*
Authors: Dr M. Carrara
Ref: V1057/9 (WP4.5/1)
Publication Date: July 1990
Pages: 18 **Price:** 5 ECU

Name: *Preliminary IRTE Urban Scenarios*
Authors: G. Lerner
Ref: V1057/10 (WP 4.6/1)
Publication Date: April 1991
Pages: 40 **Price:** 5 ECU

Name: *Preliminary IRTE Application Scenarios*
Authors: G. Lerner, D. De Preter
Ref: V1057/13 (WP 4.6/3)
Publication Date: July 1991
Pages: 64 **Price:** 8.5 ECU

Name: *RTI Functions and Related Information Needs - A Toolbox for Equipment Mapping*
Authors: D. De Preter
Ref: V1057/15 (WP 4.7/1)
Publication Date: April 1991
Pages: 32 **Price:** 5 ECU

Name: *Review of Monitoring Parameter Values currently used in Transportation Evaluation Frameworks throughout Europe*
Authors: T. Flowerdew, G. Miller
Ref: V1057/WP 5/2
Publication Date: November 1990
Pages: 15 **Price:** 5 ECU

Name: *IRTE Evaluation Concepts*
Authors: T. Flowerdew, A. Hammond, G. Miller
Ref: V1057/WP 5/1
Publication Date: November 1990
Pages: 37 **Price:** 5 ECU

Name: *Proposal for a European Traffic Message Interchange Network*
Authors: M. Chevreuil, C. Roca, R. Schüssler
Ref: V1057/WP 4/5.2
Publication Date: January 1991
Pages: 48 **Price:** 5 ECU

Name: *IRTE Scenario - Uncoordinated RTI Realisation Scenario - Coordinated RTI Implementation Scenario*
Authors: Dr O. Svidén
Ref: V1057/21 (WP 3.3/B)
Publication Date: December 1991
Pages: 25 **Price:** 5 ECU

Name: *RTI Functional Requirements*
Authors: G. Lerner, V. Mauro, M. Bell, G. Beccaria
Ref: V1057/22 (4.1/2)
Publication Date: July 1991
Pages: 65 **Price:** 8.5 ECU

Name: *IRTE Implementation Plan*
Authors: M. Chevreuil
Ref: V1057/27 (WP 6.2/2)
Publication Date: December 1991
Pages: 29 **Price:** 5 ECU

Name: *IRTE Policy Objectives*
Authors: T. Karlsson, W. Sticker, O. Svidén
Ref: V1057/31 (WP 3.3/3)
Publication Date: December 1991
Pages: 35 **Price:** 5 ECU

Name: *An Approach to IRTE Strategy Assessment*
Authors: T. Flowerdew, D. Jarrett, J. Olszewski
Ref: V1057/35 (WP 5.1/1)
Publication Date: January 1991
Pages: 52 **Price:** 8.5 ECU

Name: *Technological Options for Vehicle-BEACON Communication*
Authors: G. Freij, D. De Preter, R. Schüssler
Ref: V1057/WP 4/2
Publication Date: September 1990
Pages: 47 **Price:** 5 ECU

Name: *IRTE Application Scenarios*
Authors: G. Lerner, D. De Preter
Ref: V1057/WP 4.6/2
Publication Date: December 1991
Pages: 64 **Price:** 8.5 ECU

Name: *Preliminary Statements on 8 IRTE Key Policy Issues*
Authors: W. Sticker
Ref: VWP 3.3/2
Publication Date: September 1991
Pages: 55 **Price:** 8.5 ECU

Name: *Preliminary Inter-Urban IRTE Scenarios*
Authors: G. Lerner
Ref: V1057/WP4.6/3
Publication Date: June 1991
Pages: 31 **Price:** 5 ECU

Name: *Basic Aspects of the Dedicated Short-Range Communication Link*
Authors: D. De Preter
Ref: V1057/WP 4/5
Publication Date: February 1991
Pages: 23 **Price:** 5 ECU

Name: *Proposal for a European Traffic Message Interchange Network*
Authors: M. Chevreuil, C. Rocca, R. Schüssler
Ref: V1057/WP 4/5.2
Publication Date: January 1991
Pages: 48 **Price:** 5 ECU

Name: *IRTE Communications Architecture and Related Key Issues*
Authors: Dr G. Freij
Ref: V1057/33 (WP 4.8/4)
Publication Date: December 1991
Pages: 39 **Price:** 5 ECU

Name: *RTI Standardisation Issues*
Authors: P.O. Ryd
Ref: V1057/34 (WP 4.9/2)
Publication Date: December 1991
Pages: 80 **Price:** 5 ECU

Name: *RTI Synthesis Scenarios*
Authors: Dr O. Svidén
Ref: V1057/WP 3.3/A
Publication Date: June 1991
Pages: 24 **Price:** 5 ECU

Name: *IRTE Strategy Assessment*
Authors: P. Amisson, D. Jarrett, J. Olszweski
Ref: V1057/WP 5.4/2
Publication Date: December 1991
Pages: 75 **Price:** 8.5 ECU

V1058: CROW
Condition of Road and Weather Monitoring System

Executive Summary

Contractors: TNO Road-Vehicles Research Institute; TNO Physics Electronics Lab; Sextant Avionique; CNR; CETE de l'Est; SIAP; INRETS; TZN; KNMI; VOLVO
Ref: V1058/Exe
Publication Date: February 1992
Available from: CEC (1)
Pages: 7 **Price:** 5 ECU

The project focuses on the improvement of road safety and road transport efficiency by providing better and more detailed information about road and weather conditions. A new prototype monitoring station is developed able to determine safety margins along the road using information about current and expected road and weather conditions. Account is taken of driver response to changing conditions and road configuration. The system can predict combined risks associated with hazards and an overview of changing weather conditions can be given from six hours in the past to two hours in advance. Prototype sensors are developed to determine visibility levels and road surface conditions, along with knowledge-based systems to predict fog and aquaplaning.

The following deliverables are also available:

Name: *Crosswind and Traffic Safety*
Authors: J.P. Pauwelussen
Ref: V1058/6
Publication Date: October 1989
Available from: J.P. Pauwelussen, IW-TNO, Postbus 6033, 2600 JA DELFT, the Netherlands
Tel: +31 15 69 64 12 Fax: +31 15 69 73 14
Pages: 34 **Price:** 50 ECU

Name: *Review Cross-Wind Monitoring - Chapter 1, 2 and 3 Workpackage 1/B2*
Authors: H. Fima
Ref: V1058/7-1
Publication Date: 1990
Available from: J.C. Chalamet, Sextant, 25 rue Jules Védrines, 26027 Valence Cedex, France
Tel: +33 75 79 87 51 Fax: +33 75 56 43 37
Pages: 7 **Price:** 50 ECU

Name: *Contribution Annual Report, WP 7/8*
Authors: H. Fima
Ref: V1058/7-2
Publication Date: 1989
Available from: J.C. Chalamet, Sextant, 25 rue Jules Védrines, 26027 Valence Cedex, France
Tel: +33 75 79 87 51 Fax: +33 75 56 43 37
Pages: 49 **Price:** 50 ECU

Name: *Review of Visibility Sensors*
Authors: M. Gazzi, V. Vicentini
Ref: V1058/8
Publication Date: 1989
Available from: M. Gazzi, CNR, Via Castangolia 1, 40126 Bologna, Italy
Tel: +39 51 28 70 68 Fax: +39 51 36 97 62
Pages: 9 **Price:** 50 ECU

Name: *Preliminary Report on Aquaplaning and Weather Radar*
Authors: J.M. Terpstra
Ref: V1058/10-1
Publication Date: October 1989
Available from: J.M. Terpstra, KNMI, Postbus 201, 3730 AK De Bilt, the Netherlands
Tel: +31 30 206 911 Fax: +31 30 210 407
Pages: 14 **Price:** 50 ECU

Name: *Intermediate Report on Statistical Methods to Forecast Poor Visibility Conditions at Specific Sites*
Authors: S. Kruizinga, D. Blaauboer
Ref: V1058/10-2
Publication Date: September 1989
Available from: J.M. Terpstra, KNMI, Postbus 201, 3730 AK De Bilt, the Netherlands
Tel: +31 30 206 911 Fax: +31 30 210 407
Pages: 12 **Price:** 50 ECU

Name: *Intermediate Report on a Physical Numerical Model to Forecast Fog at Specific Sites*
Authors: H.R.A. Wessels, D. Blaauboer
Ref: V1058/10-3
Publication Date: September 1989
Available from: J. Terpstra, KNMI, Postbus 201, 3730 AK De Bilt, the Netherlands
Tel: +31 30 206 911 Fax: +31 30 210 407
Pages: 5 **Price:** 50 ECU

Name: *Recommendations Traffic Engineering*
Authors: M. Ellenberg
Ref: V1058/11
Publication Date: 1989
Available from: M. Ellenberg, CETE de l'Est, Technopole Metz 2000, BP 5230, 57076 Metz, France
Tel: +33 87 204 300 Fax: +33 87 204 699
Pages: 27 **Price:** 50 ECU

Name: *Safe Driving Limits under Bad Weather*

Authors: M. Ellenberg
Ref: V1058/12
Publication Date: 1990
Available from: M. Ellenberg, CETE de l'Est, Technopole Metz 2000, BP 5230, 57076 Metz, France
Tel: +33 87 204 300 Fax: +33 87 204 699
Pages: 19 **Price:** 50 ECU

Name: *Criteria for Road and Weather Monitoring Conditions*

Authors: J.P. Pauwelussen
Ref: V1058/13
Publication Date: 1990
Available from: J.P. Pauwelussen, IW-TNO, Postbus 6033, 2600 JA Delft, the Netherlands
Tel: +31 15 69 64 12 Fax: +31 15 69 73 14
Pages: 52 **Price:** 50 ECU

Name: *State of Art on Warning Systems for Black-ice*

Authors: A. Clerc
Ref: V1058/14-1
Publication Date: 1990
Available from: A. Clerc, INRETS, 2 av. du Général Malleret-Joinville, 94110 Arcueil, France
Tel: +33 1 49 86 12 12 Fax: +33 1 45 47 56 06
Pages: 62 **Price:** 50 ECU

Name: *Complement of State of Art on Warning Systems for Black-ice*

Authors: A. Clerc
Ref: V1058/14-2
Publication Date: October 1990
Available from: A. Clerc, INRETS, 2 av. du Général Malleret-Joinville, 94110 Arcueil, France
Tel: +33 1 49 86 12 12 Fax: +33 1 45 47 56 06
Pages: 19 **Price:** 50 ECU

Name: *Visibility Meters Made in Europe*

Authors: M. Gazzi
Ref: V1058/14-3
Publication Date: 1990
Available from: M. Gazzi, CNR, Via Castangolia 1, 40126 Bologna, Italy
Tel: +39 51 28 70 68 Fax: +39 51 36 97 62
Pages: 4 **Price:** 50 ECU

Name: *A Knowledge-based System for Fog Forecasting on the Road*

Authors: D. Blaauboer
Ref: V1058/15
Publication Date: June 1990
Available from: J. Terpstra, KNMI, Postbus 201, 3730 AK De Bilt, the Netherlands
Tel: +31 30 206 911 Fax: +31 30 210 407
Pages: 51 **Price:** 50 ECU

Name: *Specifications "CROW Control Center"*

Authors: H.R. van Es
Ref: V1058/16
Publication Date: July 1990
Available from: H.R. van Es, FEL-TNO, Postbus 96864, 2509 JG Den Haag, the Netherlands
Tel: +31 70 32 64 221 Fax: +31 70 32 80 961
Pages: 17 **Price:** 50 ECU

Name: *Workpackage III*

Authors: M. Ellenberg, M. Seris
Ref: V1058/17
Publication Date: 1991
Available from: M. Ellenberg, CETE de l'Est, Technopole Metz 2000, BP5230, 57076 Metz, France
Tel: +33 87 204 300 Fax: +33 87 204 699
Pages: 34 **Price:** 50 ECU

Name: *Weather-radar and Aquaplaning*

Authors: J.M. Terpstra
Ref: V1058/21
Publication Date: 1990
Available from: J.M. Terpstra, KNMI, Postbus 201, 3730 AK De Bilt, the Netherlands
Tel: +31 30 206 911 Fax: +31 30 210 407
Pages: 11 **Price:** 50 ECU

Name: *Annual Project Review Report Part A1, Achievement of the Project*

Authors: J.P. Pauwelussen
Ref: V1058/22-1
Publication Date: 1990
Available from: J.P. Pauwelussen, IW-TNO, Postbus 6033, 2600 JA Delft, the Netherlands
Tel: +31 15 69 64 12 Fax: +31 15 69 73 14
Pages: 68 **Price:** 50 ECU

Name: *Annual Project Review Report Part A2, Supplementary Information*

Authors: J.P. Pauwelussen
Ref: V1058/22-2
Publication Date: 1990
Available from: J.P. Pauwelussen, IW-TNO, Postbus 6033, 2600 JA Delft, the Netherlands
Tel: +31 15 69 64 12 Fax: +31 15 69 73 14
Pages: 28 **Price:** 50 ECU

Name: *Annual Project Review Report Part B, Detailed Workplan 1991, Version 2*

Authors: J.P. Pauwelussen
Ref: V1058/22-3
Publication Date: 1990
Available from: J.P. Pauwelussen, IW-TNO, Postbus 6033, 2600 JA Delft, the Netherlands
Tel: +31 15 69 64 12 Fax: +31 15 69 73 14
Pages: 60 **Price:** 50 ECU

Name: *Requirements Road Database*

Authors: J.P. Pauwelussen
Ref: V1058/23-1
Publication Date: 1990
Available from: J.P. Pauwelussen, IW-TNO, Postbus 6033, 2600 JA Delft, the Netherlands
Tel: +31 15 69 64 12 Fax: +31 15 69 73 14
Pages: 11 **Price:** 50 ECU

Name: *Road Database*

Authors: M. Ellenberg
Ref: V1058/23-2
Available from: M. Ellenberg, CETE de l'Est, Technopole Metz 2000, BP5230, 57076 Metz, France
Tel: +33 87 204 300 Fax: +33 87 204 699
Pages: 45 **Price:** 50 ECU

Name: *CCC Algorithms, I*

Authors: M. Ellenberg
Ref: V1058/24-1
Available from: M. Ellenberg, CETE de l'Est, Technopole Metz 2000, BP5230, 57076 Metz, France
Tel: +33 87 204 300 Fax: +33 87 204 699
Pages: 35 **Price:** 50 ECU

Name: *CCC Algorithms, II*

Authors: M. Ellenberg
Ref: V1058/24-2
Available from: M. Ellenberg, CETE de l'Est, Technopole Metz 2000, BP5230, 57076 Metz, France
Tel: +33 87 204 300 Fax: +33 87 204 699
Pages: 68 **Price:** 50 ECU

Name: *Delivery of Cross-wind Files*

Authors: A.P. De Vos
Ref: V1058/26
Publication Date: January 1992
Available from: J.P. Pauwelussen, IW-TNO, Postbus 6033, 2600 JA Delft, the Netherlands
Tel: +31 15 69 64 12 Fax: +31 15 69 73 14
Pages: 13 **Price:** 50 ECU

Name: *Aquaplaning Forecasting and Weather-radar*

Authors: J.M. Terpstra
Ref: V1058/28-1
Publication Date: September 1991
Available from: J.M. Terpstra, KNMI, Postbus 201, 3730 AK De Bilt, the Netherlands
Tel: +31 30 206 911 Fax: +31 30 210 407
Pages: 10 **Price:** 50 ECU

Name: *A Knowledge Based System for Fog and Forecasting on Road Sites: Operational Practice and Verification*

Authors: D. Blaauboer, H.R.A. Wessels
Ref: V1058/28-2
Publication Date: September 1991
Available from: J.M. Terpstra, KNMI, Postbus 201, 3730 AK De Bilt, the Netherlands
Tel: +31 30 206 911 Fax: +31 30 210 407
Pages: 19 **Price:** 50 ECU

Name: *Recommendation for the Use of CROW for Traffic Management*

Authors: M. Ellenberg
Ref: V1058/29
Publication Date:
Available from: M. Ellenberg, CETE de l'Est, Technopole Metz 2000, BP5230, 57076 Metz, France
Tel: +33 87 204 300 Fax: +33 87 204 699
Pages: 25 **Price:** 50 ECU

Name: *Drive Annual Project Review Report, Part A1: Achievement of the Project*

Authors: J.P. Pauwelussen
Ref: V1058/31-1
Publication Date: October 1991
Available from: J.P. Pauwelussen, IW-TNO, Postbus 6033, 2600 JA Delft, the Netherlands
Tel: +31 15 69 64 12 Fax: +31 15 69 73 14
Pages: 21 **Price:** 50 ECU

Name: *Drive Annual Project Review Report, Part A2: Supplementary Information*

Authors: J.P. Pauwelussen
Ref: V1058/31-2
Publication Date: October 1991
Available from: J.P. Pauwelussen, IW-TNO, Postbus 6033, 2600 JA Delft, the Netherlands
Tel: +31 15 69 64 12 Fax: +31 15 69 73 14
Pages: 13 **Price:** 50 ECU

Name: *Results and Evaluation of CROW Demonstration*

Authors: A.P. de Vos
Ref: V1058/32
Publication Date: December 1991
Available from: J.P. Pauwelussen, IW-TNO, Postbus 6033, 2600 JA Delft, the Netherlands
Tel: +31 15 69 64 12 Fax: +31 15 69 73 14
Pages: 33 **Price:** 50 ECU

Name: *The CROW Pilot-demo*

Authors: J.P. Pauwelussen, R.M.M. Hogt
Ref: V1058/33
Publication Date: June 1991
Available from: J.P. Pauwelussen, IW-TNO, Postbus 6033, 2600 JA Delft, the Netherlands
Tel: +31 15 69 64 12 Fax: +31 15 69 73 14
Pages: 53 **Price:** 50 ECU

Name: *The Effect of Weather and Road Conditions on Traffic Safety*

Authors: J.P. Pauwelussen
Ref: V1058/34
Publication Date: June 1991
Available from: J.P. Pauwelussen, IW-TNO, Postbus 6033, 2600 JA Delft, the Netherlands
Tel: +31 15 69 64 12 Fax: +31 15 69 73 14
Pages: 92 **Price:** 50 ECU

V1059: SPECTRUM
Strategies for the Prevention of Road Traffic Congestion

Final Report

Contractors: Wootton Jeffreys Consultants; Siemens-Plessey; CERT; Scetauroute; CSST; TU München; Heusch-Boesefeldt; TRRL; Landstaftsverband Westfalen-Lippe; Italian National Research Council
Ref: V1059/Fin
Publication Date: October 1993
Price: On Application

The following deliverable is also available from CEC (1):

Name: *Statement of Scenarios Selected for Strategy*

Authors: Wootton Jeffreys Consultants Ltd
Ref: V1059/1
Publication Date: November 1989
Available from: R.Burton, Wootton Jeffreys Consultants Ltd, Cemetry Pales, Brookwood, Woking Surrey, GU 24 OBL
Tel: +44 483 480033 Fax: +44 483 488887
Pages: 81 **Price:** 20 ECU

V1060: SMART
Electronic Cards for Traffic and Transport

Final Report

Contractors: TFK + VTI Transportforschung GmbH, BEVAC Consulting Engineers, BULL CP8, Electronique Serge Dassault, Micro Design A/S, TFK
Ref: V1060/Fin
Publication Date: March 1991
Available from: CEC (1)
Pages: 33 **Price:** 5 ECU

The project aims at the exploration of the fields of application for a microprocessor or a smart card for future individual and public transport. Improvements in administrative efficiency are principally recognised, along with improved service level and strengthened customer fidelity. Traffic safety and environment are also improved. Tasks involved in three phases are : firstly, presentation of systems concepts for applications; secondly, identification of areas of application, and assessment of technological development and standardisation needs; and thirdly, promotion of standardisation, preparation of field tests, and some preliminary studies of the two key problems of fund transfer and data access.

The following deliverables are also available from CEC (1):

Name: *State of the Art and Application Outlines*

Authors: The SMART Consortium
Ref: V1060/1 (R 3/89)
Publication Date: December 1989
Pages: 43 **Price:** 5 ECU

Name: *Functional Requirements*

Authors: K. Evensen
Ref: V1060/2
Publication Date: March 1990
Pages: 17 **Price:** 5 ECU

Name: *Definition of Prototype Concept*

Authors: The SMART Consortium
Ref: V1060/6 (WP 10)
Publication Date: March 1991
Pages: 33 **Price:** 5 ECU

V1062
Multilayered Safety Objectives

Final Report

Contractors: University of Lund, TU München, Communication and Management Systems Unit, Husat Research Centre
Ref: V1062/Fin
Publication Date: March 1992
Available from: CEC (1)
Pages: 22 **Price:** 5 ECU

The project aims at formulation of safety objectives for maximally beneficial RTI development and implementation, and is a continuation of project V1040. The main steps involved are : analysis of traffic accident statistics; definition and analysis of the most serious traffic safety problems; analysis of RTI measures planned, designed or implemented within

DRIVE or PROMETHEUS; and survey of other DRIVE projects with analysis of safety objectives. Key safety systems are proposed, namely : monitoring and improving driving behaviour in non-interactive situations and in dynamic interactions; intelligent traffic signals for pedestrians and cyclists; monitoring driver status; emergency action.

The following deliverable is also available from CEC (1):

Name: *Safety Objectives for RTI Applications*
Authors: C. Hydén, M. Draskoczy
Ref: V1062/25 (WP 7/25)
Publication Date: February 1992
Pages: 55 **Price:** 8.5 ECU

V1063: VIC
Vehicle Inter-Communication

Contractors: Dassault Electronique; Intracom; Portsmouth Polytechnic; Renault; Bosch; RWTH Aachen; Fern University of Hagen

The project aims at providing the basis for future standardisaion in the area of Vehicle-to-Vehicle Communication (VVC), to meet DRIVE task T504 requirements. Functional analysis identifies five applications needing VVC: intelligent cruise control, intelligent manoeuvring control, intelligent intersection control, medium-range pre-information, and emergency warning. Almost all communication can be made in broadcast mode. The problem of variable network topology is studied, on the basis of available radio channel characteristics. Methods and tools are defined, allowing formal validation of the protocols, and field tests prepared. A proposal for an integrated communication architecture has resulted from integration work done in liaison with SECFO.

The following deliverables are available from CEC (1):

Name: *System Requirements*
Authors: A. De Meulemeester, A. Kemeni
Ref: V1063/3 (WP 2)
Publication Date: October 1990
Pages: 93 **Price:** 8.5 ECU

Name: *Final Report*
Authors: The VIC Consortium
Ref: V1063/4 (WP 3)
Publication Date: September 1991
Pages: 110 **Price:** 10 ECU

Name: *Communication Global Requirements - Network Aspects (Final Report)*
Authors: W. Kremer
Ref: V1063/4 (WP 3.1)
Publication Date: November 1990
Pages: 22 **Price:** 5 ECU

Name: *Definition of a Layered Communication Architecture (Final Report)*
Authors: W. Kremer et al
Ref: V1063/5
Publication Date: August 1990
Pages: 100 **Price:** 10 ECU

Name: *Recommendations for Future Standardisation*
Authors: F. Lucazeau
Ref: V1063/WP7
Publication Date: October 1991
Pages: 36 **Price:** 5 ECU

Name: *Executive Summary*
Authors: J.F. Henry
Ref: V1063/WP 1/3
Publication Date: April 1992
Pages: 10 **Price:** 5 ECU

Name: *Final Report*
Authors: J.F. Henry
Ref: V1063/WP 2/3
Publication Date: April 1992
Pages: 55 **Price:** 8.5 ECU

V1064: UROP
Universal ROadside Processor

Contractors: TNO Institute of Applied Physics; DAMBACH-Werke; Radio-Holland; CETE Mediterranée; Sociedad Ibenica de Construcciones Electricas; Technolution

The project aims for the development and implementation of open, multipurpose roadside systems which can collect data, set signs, perform preprocessing and data reduction and communicate to vehicles and to higher level control centres within an integrated RTI environment in interurban areas. Such systems have as their basis a hardware- and software-independent architecture that can be used as a reference model for the development of basic building blocks. Standardisations required involve : referencing of roadside data to provide flexible use of traffic data across the various levels of the IRTE, roadnetwork interfacing to provide a clear reference to manufacturers of ATT applications, information architecture, and specifications for ATT applications.

The following deliverables are available:

Name: *UROP Demonstration System*
Authors: TNO Institute of Applied Physics
Ref: V1064/3 (WP 6)
Publication Date: March 1991
Available from: CEC (1)
Pages: 14 **Price:** 5 ECU

Name: *Urban Applicability for the UROP*
Authors: L. Espinosa Roman (SICE), M. Schneider
Ref: V1064/WP7
Publication Date:
Available from: L. Espinosa, SICE, C/Sepulveda n° 6, Poligono Industrial Alcobendas, 28100 Madrid, Spain
Tel: +34 1 661 9035 Fax: +34 1 661 2503
Price: On application

V1065: SIRIUS
Socio-political Implications of RTI Implementation and Use Strategies

Final Report
Contractors: University of Nijmegen, ITS; Praxis; Conlogic; Rijkswaterstaat; TSU, University of Oxford; ECOTECER
Ref: V1065/6
Publication Date: 1993
Available from: H.A. Kasseler, ITS Nijmegen University, P.O. Box 9048, The Netherlands
Tel: +31 80 653500 Fax: +31 80 653599
Pages: 60 **Price:** 32 ECU

The project aims at the investigation of the social and political implications (SPi) of RTI implementation, and at identifying sensitivities regarding implementation of RTI-based policies especially in the context of IRTE. A three-phase approach is taken, comprising: analytical, including review of literature on strategies, examination of projects adopted or rejected, and discussion; empirical, where experiences in their real social and political environments are studied; and synthesising by foregoing phases. Six SPi categories identified are within the two sectors of transport and adjacent areas thereto, respectively: intentional effects, unintentional side-effects, and new opportunities.

The following deliverables are also available from ITS Nijmegen University:

Name: *Supply-side Sensitivities Related to RTI Implementation Policies and strategies, Summary Report*
Authors: ECOTECER, Istituto di Ricerca Progettazione Economica e Territoriale
Ref: V1065/3
Publication Date: October 1990
Pages: 66 **Price:** 16 ECU

Name: *Supply Actors Views on Road Transport Informatics (RTI) Implementation; (Italy)*
Authors: ECOTER
Ref: V1065/3A
Publication Date: May 1990
Pages: 40 **Price:** 10 ECU

Name: *Supply Actors Views on Road Transport Informatics (RTI) Implementation; (The Netherlands)*
Authors: Institute for Applied Social Sciences - ITS
Ref: V1065/3B
Publication Date: 1990
Pages: 46 **Price:** 10 ECU

Name: *Supply Actors Views on Road Transport Informatics (RTI) Implementation; (Sweden)*
Authors: H Swahn
Ref: V1065/3C
Publication Date: September 1990
Pages: 32 **Price:** 10 ECU

Name: *Demand-side Sensitivities Related to Road Transport Telematics (RTT) Implementation; Summary Report*
Authors: Institute for Applied Social Sciences - ITS
Ref: V1065/4
Publication Date: July 1991
Pages: 96 **Price:** 16 ECU

Name: *Demand Actors Views on Road Transport Telematics Implementation in the Netherlands*
Authors: P.van der Oord, J Roosen, K Katheler
Ref: V1065/4B
Publication Date: April 1991
Pages: 108 **Price:** 12 ECU

Name: *Demand Actors Views on Road Transport Telematics in Italy*
Authors: ECOTECER, Istituto di Ricerca Progettazione Economica e Territoriale
Ref: V1065/4C
Publication Date: March 1991
Pages: 64 **Price:** 12 ECU

Name: *Demand Actors Views on Road Transport Telematics in Greece*
Authors: PRAXIS s.a
Ref: V1065/4D
Publication Date: June 1991
Pages: 74 **Price:** 12 ECU

Name: *Views on RTI and RTI Implementation: Collective Demand Actors and Public Transport Companies. (Sweden)*
Authors: H Swahn
Ref: V1065/4E
Publication Date: June 1991
Pages: 20 **Price:** 8 ECU

The following deliverable is available from The Librarian, Transport Studies Unit, University of Oxford, 11 Bevington Road, Oxford OX2 6NB, UK
Tel: +44 865 2747 15 Fax: +44 865 515 194

Name: *Route Guidance and Parking Information, Management and Enforcement Technologies; a Summary of Supply and Demand Side Sensitivities in the UK*
Authors: M Grieco
Ref: V1065/633
Publication Date: April 1991
Pages: 40 **Price:** 10 ECU

V1066: PULSAR
Parking Urban Loading/Unloading Standards and Rules

Final Report
Contractors: SETEX; INRETS; SARECO; Crouzet; ADIST Inst. Superior Technico; VDO Verkehrsleittechnik
Ref: V1066/D6 (Fin)
Publication Date: August 1992
Available from: CEC (1)
Pages: 70 **Price:** 8.5 ECU

The following deliverable is also available from CEC (1):

Name: *Executive Summary*
Authors: PULSAR Consortium
Ref: V1066/Exe
Publication Date: August 1992
Pages: 5 **Price:** 5 ECU

V1067: IMPACT
Implementation Aspects Concerning Planning and Legislation

Final Report
Contractors: Swedish National Road Administration; Bundesanstalt für Strassenwesen; BMW, Centro Studi sui Sistemi di Transporto; SETRA; Steierwald Schönharting und Partner
Ref: V1067/8 (Fin)
Publication Date: March 1992
Available from: CEC (1)
Pages: 35 **Price:** 5 ECU

The following deliverable is also available from CEC (1):

Name: *Executive Summary*
Authors: IMPACT Consortium
Ref: V1067/Exe
Publication Date: March 1992
Pages: 7 **Price:** 5 ECU

V1068: CHRISTINE
Characteristics and Requirements of Information Systems Based on Traffic Data in an Integrated Network Environment

Final Report
Contractors: ETRA-LISITT; Wootton Jeffreys Consultants; SAINCO Tráfico, Syseca
Ref: V1068/Fin
Publication Date: May 1992
Available from: CEC (1)
Pages: 62 **Price:** 8.5 ECU

The following deliverable is also available from CEC (1):

Name: *Executive Summary*
Authors: CHRISTINE Consortium
Ref: V1068/Exe
Publication Date: 1992
Pages: 11 **Price:** 5 ECU

V1069
Car-pooling Management Systems

Final Report (and Evaluation of Test Area Results)
Contractors: Sherpa; Langzaam Verkeer; Centrum voor Positieve Aanwending; ADAC; Universitat Wuppertal; Planerburo Sudstadt Koln
Ref: V1069/8-9
Available from: CEC (1)
Pages: 198 **Price:** 13 ECU

The project aims at ascertaining the factors involved in the successful organisation and integration of the different rural and urban transportation systems available for enhanced mobility of commuter traffic and the maximising of the transport capacities of motor vehicles. Fixed route services, company-owned buses and carpools accepting private cars and designated buses are recommended, along with incentives for use of the new systems. The need for establishment of rural mobility centres, which provide transport information and organise and coordinate carpooling, is identified. The overall effect is seen as improving the lot of the non-motorised in rural areas and reducing the effects of motorised private transport in urban areas

The following deliverables are also available from CEC (1):

Name: *Literature Evaluation*
Authors: Car-Pooling Management Systems Consortium
Ref: V1069/1
Publication Date: January 1990
Pages: 142 **Price:** 10 ECU

Name: *Road Demand Study*
Authors: Car-Pooling Management Systems Consortium
Ref: V1069/2
Publication Date: September 1990
Pages: 142 **Price:** 10 ECU

Name: *Design and Installation of Two Demonstration Schemes*
Authors: Car-Pooling Management Systems Consortium
Ref: V1069/6
Publication Date: January 1991
Price: On application

Order Form

Please photocopy this page and complete the form. Post the completed form, together with your payment, to the address below.

Reports and deliverables from DRIVE projects are available from the addresses indicated in the reference that appears under each entry. The number (1) is used as an abbreviation for the most common supplier: the Commission of the European Communities (CEC).

Documents available from CEC(1) can be obtained from the following address:

DRIVE Publications
Commission of the European Communities
c/o ECOTEC Research and Consulting,
28-34 Albert Street
Birmingham, B4 7UD
United Kingdom
Tel: + 44 21 616 1010
Fax: + 44 21 616 1099

Name of orderer and organisation		
Address		
Title of document(s) required	***Reference number(s)***	***Quantity required***
VAT registration number and national prefix		

Signed: _____ ***Print:*** _____ ***Date:*** _____

Prices include postage within the European Community. Orders from outside the EC should add an appropriate allowance for postage. EC-based ordering companies not registered for VAT should add VAT at the UK standard rate of 17.5% to the stated price. Payment can be made by Eurocheque in £ Sterling, Belgian Francs, or ECU, or using an ordinary cheque if drawn on a UK or Belgian bank. Cheques should be made payable to ECOTEC Research and Consulting Limited.

Payment can also be made by credit transfer virement to either:

National Westminster Bank
Birmingham Law Courts
38 Dale End
Birmingham, B4 7NJ, UK
Code: 60.01.27
Account number: 0001922289

Banque Bruxelles Lambert
Branch Bruxelles Arts
Avenue des Arts 26
1040 Brussels, Belgium
Account number: 310.0822.49521

Documents will be dispatched within one week of receipt of order and full payment.

Venta y suscripciones • Salg og abonnement • Verkauf und Abonnement • Πωλήσεις και συνδρομές
Sales and subscriptions • Vente et abonnements • Vendita e abbonamenti
Verkoop en abonnementen • Venda e assinaturas

BELGIQUE / BELGIË

Moniteur belge / Belgisch Staatsblad
Rue de Louvain 42 / Leuvenseweg 42
B-1000 Bruxelles / B-1000 Brussel
Tél. (02) 512 00 26
Fax (02) 511 01 84

Autres distributeurs /
Overige verkooppunten

Librairie européenne/ Europese boekhandel
Rue de la Loi 244/Wetstraat 244
B-1040 Bruxelles / B-1040 Brussel
Tél. (02) 231 04 35
Fax (02) 735 08 60

Jean De Lannoy
Avenue du Roi 202 /Koningslaan 202
B-1060 Bruxelles / B-1060 Brussel
Tél. (02) 538 51 69
Télex 63220 UNBOOK B
Fax (02) 538 08 41

Document delivery:
Credoc
Rue de la Montagne 34 / Bergstraat 34
Bte 11 / Bus 11
B-1000 Bruxelles / B-1000 Brussel
Tél. (02) 511 69 41
Fax (02) 513 31 95

DANMARK

J. H. Schultz Information A/S
Herstedvang 10-12
DK-2620 Albertslund
Tlf. 43 63 23 00
Fax (Sales) 43 63 19 69
Fax (Management) 43 63 19 49

DEUTSCHLAND

Bundesanzeiger Verlag
Breite Straße 78-80
Postfach 10 05 34
D-50445 Köln
Tel. (02 21) 20 29-0
Telex ANZEIGER BONN 8 882 595
Fax 2 02 92 78

GREECE/ΕΛΛΑΔΑ

G.C. Eleftheroudakis SA
International Bookstore
Nikis Street 4
GR-10563 Athens
Tel. (01) 322 63 23
Telex 219410 ELEF
Fax 323 98 21

ESPAÑA

Boletín Oficial del Estado
Trafalgar, 29
E-28071 Madrid
Tel. (91) 538 22 95
Fax (91) 538 23 49

Mundi-Prensa Libros, SA
Castelló, 37
E-28001 Madrid
Tel. (91) 431 33 99 (Libros)
431 32 22 (Suscripciones)
435 36 37 (Dirección)
Télex 49370-MPLI-E
Fax (91) 575 39 98

Sucursal:

Librería Internacional AEDOS
Consejo de Ciento, 391
E-08009 Barcelona
Tel. (93) 488 34 92
Fax (93) 487 76 59

Llibreria de la Generalitat de Catalunya
Rambla dels Estudis, 118 (Palau Moja)
E-08002 Barcelona
Tel. (93) 302 68 35
302 64 62
Fax (93) 302 12 99

FRANCE

Journal officiel
Service des publications des Communautés européennes
26, rue Desaix
F-75727 Paris Cedex 15
Tél. (1) 40 58 75 00
Fax (1) 40 58 77 00

IRELAND

Government Supplies Agency
4-5 Harcourt Road
Dublin 2
Tel. (1) 66 13 111
Fax (1) 47 80 645

ITALIA

Licosa SpA
Via Duca di Calabria 1/1
Casella postale 552
I-50125 Firenze
Tel. (055) 64 54 15
Fax 64 12 57
Telex 570466 LICOSA I

GRAND-DUCHÉ DE LUXEMBOURG

Messageries du livre
5, rue Raiffeisen
L-2411 Luxembourg
Tél. 40 10 20
Fax 40 10 24 01

NEDERLAND

SDU Overheidsinformatie
Externe Fondsen
Postbus 20014
2500 EA 's-Gravenhage
Tel. (070) 37 89 880
Fax (070) 34 75 778

PORTUGAL

Imprensa Nacional
Casa da Moeda, EP
Rua D. Francisco Manuel de Melo, 5
P-1092 Lisboa Codex
Tel. (01) 69 34 14

Distribuidora de Livros Bertrand, Ld.ª
Grupo Bertrand, SA
Rua das Terras dos Vales, 4-A
Apartado 37
P-2700 Amadora Codex
Tel. (01) 49 59 050
Telex 15798 BERDIS
Fax 49 60 255

UNITED KINGDOM

HMSO Books (Agency section)
HMSO Publications Centre
51 Nine Elms Lane
London SW8 5DR
Tel. (071) 873 9090
Fax 873 8463
Telex 29 71 138

ÖSTERREICH

Manz'sche Verlags- und Universitätsbuchhandlung
Kohlmarkt 16
A-1014 Wien
Tel. (0222) 531 61-0
Telex 112 500 BOX A
Fax (0222) 531 61-339

SUOMI/FINLAND

Akateeminen Kirjakauppa
Keskuskatu 1
PO Box 128
SF-00101 Helsinki
Tel. (0) 121 41
Fax (0) 121 44 41

NORGE

Narvesen Info Center
Bertrand Narvesens vei 2
PO Box 6125 Etterstad
N-0602 Oslo 6
Tel. (22) 57 33 00
Telex 79668 NIC N
Fax (22) 68 19 01

SVERIGE

BTJ AB
Traktorvägen 13
S-22100 Lund
Tel. (046) 18 00 00
Fax (046) 18 01 25
30 79 47

SCHWEIZ / SUISSE / SVIZZERA

OSEC
Stampfenbachstraße 85
CH-8035 Zürich
Tel. (01) 365 54 49
Fax (01) 365 54 11

ČESKÁ REPUBLIKA

NIS ČR
Havelkova 22
130 00 Praha 3
Tel. (2) 24 23 09 07
Fax (2) 242 21 484

MAGYARORSZÁG

Euro-Info-Service
Club Sziget
Margitsziget
1138 Budapest
Tel./Fax 1 111 60 61
1 111 62 16

POLSKA

Business Foundation
ul. Krucza 38/42
00-512 Warszawa
Tel. (22) 21 99 93, 628-28-82
International Fax&Phone
(0-39) 12-00-77

ROMÂNIA

Euromedia
65, Strada Dionisie Lupu
70184 Bucuresti
Tel./Fax 0 12 96 46

BĂLGARIJA

Europress Klassica BK Ltd
66, bd Vitosha
1463 Sofia
Tel./Fax 2 52 74 75

RUSSIA

CCEC
9,60-letiya Oktyabrya Avenue
117312 Moscow
Tel./Fax (095) 135 52 27

CYPRUS

Cyprus Chamber of Commerce and Industry
Chamber Building
38 Grivas Dhigenis Ave
3 Deligiorgis Street
PO Box 1455
Nicosia
Tel. (2) 449500/462312
Fax (2) 458630

MALTA

Miller distributors Ltd
Scots House, M.A. Vassalli street
PO Box 272
Valletta
Tel. 24 73 01/22 29 95
Fax 23 49 14

TÜRKIYE

Pres Gazete Kitap Dergi Pazarlama Dağitim Ticaret ve sanayi AŞ
Narlibahçe Sokak N. 15
Istanbul-Cağaloğlu
Tel. (1) 520 92 96 - 528 55 66
Fax (1) 251 91 97
Telex 23822 DSVO-TR

ISRAEL

ROY International
PO Box 13056
41 Mishmar Hayarden Street
Tel Aviv 61130
Tel. 3 648 60 39
Fax 3 544 60 39

UNITED STATES OF AMERICA / CANADA

UNIPUB
4611-F Assembly Drive
Lanham, MD 20706-4391
Tel. Toll Free (800) 274 4888
Fax (301) 459 0056

CANADA

Subscriptions only
Uniquement abonnements

Renouf Publishing Co. Ltd
1294 Algoma Road
Ottawa, Ontario K1B 3W8
Tel. (613) 741 43 33
Fax (613) 741 54 39
Telex 0534783

AUSTRALIA

Hunter Publications
58A Gipps Street
Collingwood
Victoria 3066
Tel. (3) 417 5361
Fax (3) 419 7154

JAPAN

Kinokuniya Company Ltd
17-7 Shinjuku 3-Chome
Shinjuku-ku
Tokyo 160-91
Tel. (03) 3439-0121

Journal Department
PO Box 55 Chitose
Tokyo 156
Tel. (03) 3439-0124

SOUTH-EAST ASIA

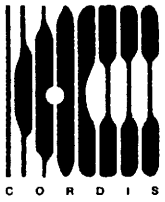
Legal Library Services Ltd
STK Agency
Robinson Road
PO Box 1817
Singapore 9036

SOUTH AFRICA

Safto
5th Floor, Export House
Cnr Maude & West Streets
Sandton 2146
Tel. (011) 883-3737
Fax (011) 883-6569

AUTRES PAYS
OTHER COUNTRIES
ANDERE LÄNDER

Office des publications officielles des Communautés européennes
2, rue Mercier
L-2985 Luxembourg
Tél. 499 28-1
Télex PUBOF LU 1324 b
Fax 48 85 73/48 68 17



The Communities research and development information service

CORDIS

A vital part of your programme's dissemination strategy

CORDIS is the information service set up under the VALUE programme to give quick and easy access to information on European Community research programmes. It is available free-of-charge online via the European Commission host organization (ECHO), and now also on a newly released CD-ROM.

CORDIS offers the European R&D community:

— a comprehensive up-to-date view of EC R&TD activities, through a set of databases and related services,

— quick and easy access to information on EC research programmes and results,

— a continuously evolving Commission service tailored to the needs of the research community and industry,

— full user support, including documentation, training and the CORDIS help desk.

The CORDIS Databases are:

R&TD-programmes – R&TD-projects – R&TD-partners – R&TD-results
R&TD-publications – R&TD-comdocuments – R&TD-acronyms – R&TD-news

Make sure your programme gains the maximum benefit from CORDIS

— Inform the CORDIS unit of your programme initiatives,

— contribute information regularly to CORDIS databases such as R&TD-news, R&TD-publications and R&TD-programmes,

— use CORDIS databases, such as R&TD-partners, in the implementation of your programme,

— consult CORDIS for up-to-date information on other programmes relevant to your activities,

— inform your programme participants about CORDIS and the importance of their contribution to the service as well as the benefits which they will derive from it,

— contribute to the evolution of CORDIS by sending your comments on the service to the CORDIS Unit.

For more information about contributing to CORDIS, contact the DG XIII CORDIS Unit

Brussels
Ms I. Vounakis
Tel. +(32) 2 299 0464
Fax +(32) 2 299 0467

Luxembourg
M. B. Niessen
Tel. +(352) 4301 33638
Fax +(352) 4301 34989

To register for online access to CORDIS, contact:

ECHO Customer Service
BP 2373
L-1023 Luxembourg
Tel. +(352) 3498 1240
Fax +(352) 3498 1248

If you are already an ECHO user, please mention your customer number.

OFFICE FOR OFFICIAL PUBLICATIONS
OF THE EUROPEAN COMMUNITIES

L-2985 Luxembourg

ISBN 92-826-6735-9