CALL FOR TENDERS
No. TREN/E3/353-2007

Feasibility and Impact Assessment Study on the future evolution of roadworthiness tests for motor vehicles to evaluate a review of the Directive 96/96/EC

By W Labro (CITA), M Dodd (TRL), I Knight (TRL), E Fernandez (Applus Iteuve), G Dahl (Bilprovningen).

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TREN/E3/353-2007
OJEU 2007/S 163-202017

Client: The European Commission

Directorate General Transport and Energy (DGTREN)

By W Labro (CITA), M Dodd (TRL), I Knight (TRL), E Fernandez (Applus Iteuve), G Dahl (Bilprovningen).

10th October 2007

	Approvals
Project Leader	
Quality Reviewed	

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INTRODUCTION

CITA is pleased to provide this tender in response to the invitation to tender from the EC. It is understood that in the interest of road safety, environmental protection and fair competition it is important to ensure that vehicles on European roads are maintained to a high degree of technical roadworthiness.

CITA and its members have recently been involved in two projects, AUTOFORE and IDELSY, which showed that, while preventing negative consequences caused by failure of mechanical systems is still important, testing needs to be extended to new technological devices to ensure that their benefits are preserved.

Much of the planned work for this project will be based on the findings of the AUTOFORE and IDELSY projects and so CITA has selected a consortium with in depth knowledge of these projects and with extensive knowledge on the area of vehicle roadworthiness.

The consortium for this project is:

- International Motor Vehicle Inspection Committee – CITA aisbl (Lead organisation)

- Applus Iteuve Technology from Spain

- arge tp 21 GbR from Germany

- Bilprovningen from Sweden

- TRL from UK

- Fresenius-University Institute for Economic Research and Consulting in Köln, Germany (IERC-Fres.-Univ)

The first phase of this project is the definition of proposed options to amend Directive 96/96/EC, including assessment of the feasibility of mutual recognition of roadworthiness certification, improving time and cost efficiency, and the extension of PTI to include other categories of vehicles.

The second phase will be carried out by TRL to independently evaluate the proposed options to amend Directive 96/96/EC and, where necessary include additional data and analysis in order to carry out a cost benefit analysis of the considered options.

CITA believe that that the proposed consortium will deliver an exceptionally high quality project to the EC within time and budget constraints and providing the best value for money.

STRUCTURE OF THE PROPOSAL

Section 3 of this tender document provides the Administrative proposal as defined in the ECs tender specification document. This includes the contractor identification documents for CITA and the subcontractors, the exclusion and selection criteria declarations, the additional identification documents requested and information regarding CITAs economic and financial standing, the services provided in the last three years and details of CITAs manpower and managerial staff

Section 4 of this tender document provides the technical proposal as defined in the ECs tender specification document. This section describes our understanding of the requirement, background and experience in related projects, understanding of the objectives of the project, the proposed methodology for meeting the objectives, and a description of how the project will be managed, including short descriptions of the experience of the key project personnel and their roles within the project. This section, therefore, contains all of the information related to the technical evaluation and award criteria specified by the EC in section IV.3 (a) of their tender specification.

Section 5 of the tender document provides the financial proposal as specified by the EC in their tender specification document. This section provides for each main task the staff hours allocated for each person working on the project (including sub-contractors), their daily rate and the total labour costs. It also provides unit costs, quantities and total costs for other categories of cost including allowances for travel and subsistence, room hire, interpretation services, purchase of data, and facility hire (for computer modelling facilities for example). All prices are fixed for the duration of the project, are quoted in Euros and are exclusive of taxes, duty and VAT, in accordance with the specifications of the EC.

The Annex to the proposal contains detailed CVs for each of the key staff involved in the project (including subcontractors) in the format requested by the EC and additional company information.

ADMINISTRATIVE PROPOSAL

3.1 IDENTIFICATION FORMS

3.1.1 CITA ACTING AS THE LEADING ORGANISATION

Identity	Answer
Name of tenderer ……...	Comité International de l'Inspection Technique Automobile (International Motor Vehicle Inspection Committee - CITA)
Legal status of tenderer ……	Aisbl – association internationale sans but lucratif (international non-profit association)
Date of registration ……	
Country of registration ……..	Belgium
Registration number ……..	11049/89
VAT number ……	BE 436.921.157
Description of statutory social security cover (at the level of the Member State of origin) and non-statutory cover (supplementary professional indemnity insurance)	Not applicable

Address	Answer
Address of registered office of tenderer	CITA aisbl Rue de la Technologie 21-25 1082 Brussels Belgium
Where appropriate, administrative address of tenderer for the purposes of this invitation to tender:	Not applicable

Contact Person	Answer
a) Surname	Labro
b) First name	Wim
c) Title (e.g. Dr, Mr, Ms)	Mr
d) Position (e.g. manager)	Project Administrator
e) Telephone number	+32 (0) 2 469 06 70
f) Fax number	+32 (0) 2 469 07 95
g) E-mail address	cita_labro.w@skynet.be
h) Internet address	www.cita-vehicleinspection.org
i) Other	Not applicable

Names of Legal Representatives	Answer
And of other representatives of the tenderer who are authorised to sign contracts with third parties	Mr Ron Oliver – CITA President
	Prof. Dr. Claus Wolff – CITA Vice President & Treasurer
	Mr Ricard Puignou – CITA Vice President & Secretary General
	Mr Heng Chye Kiou – CITA Vice President
	Mr Johan Cobbaut – CITA Deputy Secretary General
	Mr Christian Bailly – CITA Bureau Permanent Member
	Mr Magnus Ehrenstrahle – CITA Bureau Permanent Member
	Mr Camille Gonderinger – CITA Bureau Permanent Member
	Mr Fred Herren – CITA Bureau Permanent Member
	Mr Wim Labro – CITA Executive Director

Declaration by an authorised representative of the organisation: I, the undersigned, certify that the information given in this tender is correct and that the tender is valid.	
a) Surname ……	Labro
b) First name ..…….	Wim
c) Title (e.g. Dr, Mr, Ms)	Mr
d) Position (e.g. “manager”)...	CITA Executive Director
e) Telephone number …….	+32 (0) 2 469 06 70
f) Fax number .....…	+32 (0) 2 469 07 95
g) E-mail address ……	cita.vehicleinspection@skynet.be
h) Internet address ……	www.cita-vehicleinspection.org
i) Other ……	Not applicable
	SIGNATURE:

3.1.2 SUBCONTRACTING ORGANISATIONS

Limited to organisations participating for at least 20% of the services for the contract.

The signed document is included in the annex

3.2 ADDITIONAL IDENTIFICATION DOCUMENTS FOR CITA

This section relates to additional documents requested in the invitation to tender. We can confirm that all of the documents listed below have been provided:

- A **Legal Entity Form.**
- A **Financial Identification Form**.

- A copy of the latest edition of the **Articles of Incorporation identifying authorised representatives of the organisation and registration number**
- A copy of the **signatory power delegated to the CITA Executive Director**
- Certificate of **Registration for Value Added Tax**.

These documents are included in the annex

3.3 ECONOMIC AND FINANCIAL STANDING

The following documents have been provided in support of our economic and financial standing:

- a complete copy of **CITA's audited annual accounts** for 2004, 2005 & 2006.

Copies of these documents can be found in the annex to this proposal

CITAs annual turnover is shown in Table 2, below.

Table 2. CITA's annual turnover

	2004	**2005**	**2006**
Value (€)	224737	423728	485730

3.4 PRINCIPAL SERVICES PROVIDED IN THE LAST THREE YEARS

In the last three years, CITA has provided a range of services to members of the association, including both public sector and private sector clients. The principal services being :

- Organising working group meetings on topics related to technical in-service vehicle inspections activities: emission inspections, new technologies, brake inspections, quality assurance, items to be inspected and electronic controlled systems.

- Study for the European Commission, DGTren called AUTOFORE, a study on Future Options for Roadworthiness Enforcement in the European Union.
- Worldwide conferences with regard to technical in-service vehicle inspections activities are taking place every 18 months:
    - 2005 conference, Chicago, USA
    - 2006 conference, Hanoi, Vietnam
    - 2008 conference, Porto, Portugal
    - 2009 conference, Gothenburg, Sweden
- Developing best practices
- Expanding actively its activities outside Europe. Regional advisory groups were established for Asia/Australasia and North America and preparatory work is going on for South-America.

3.5 ANNUAL MANPOWER AND MANAGERIAL STAFF

CITAs average total manpower, research/technical staff and managerial staff for the last three years are shown in Table 3.

Table 3: CITA Staffing

Year (March)	**Total manpower**	**Research/Technical staff**	**Managerial staff**
2006	2,33	1,33	1
2005	2,33	1,33	1
2004	1,5	0,5	1

3.7 EXCLUSION AND SELECTION CRITERIA FORMS

The exclusion and selection criteria declarations are included in the annex.

TECHNICAL PROPOSAL

4.1 INTRODUCTION

The technical proposal contains all of the information needed for the purpose of awarding the contract and, in line with the tender evaluation criteria stated by the EC in their invitation to tender, it is structured to show:

- The consortium's overall understanding of the requirements,
- the related experience of the consortium that gives us that understanding,
- our interpretation of the EC's objectives,
- the detailed methodology proposed to meet those objectives,
- The relevance of the results to the formulation of EC policy
- how the project will be managed and the outputs to be delivered,
- the project timing
- the role, quality and experience of each key project team member

It is intended that these items will provide the EC with the information needed to meet the selection criteria listed in their tender with respect to technical and professional capacity (Invitation to tender paragraph IV.2.2) and to judge the technical evaluation and award criteria (Invitation to tender paragraph IV.3(a)). However, the information required to demonstrate the economic and financial capacity selection criteria (IV.2.1) has been provided in the administrative proposal and the overall price in the financial proposal.

4.2 UNDERSTANDING OF THE REQUIREMENT

This section is intended to demonstrate our understanding of the research problem and our experience in the relevant and related subject areas.

4.2.1 Rationale for the research

In its White Paper on European transport policy, the Commission proposed that the European Union sets itself the target of halving the number of road deaths by 2010. There are also many current pressures on all countries to provide better environmental protection in terms of air quality, global warming and noise.

The design of vehicles plays an important role in meeting all of these objectives and many features of vehicles such as brakes, tyres, exhausts and engine management systems, are designed to minimise the safety and environmental impacts of the vehicle. For new vehicles, the design of many systems that are important in terms of safety, the environment and fair competition have been regulated by the type approval Directives. However, it is a fact of life that the standard of vehicles will deteriorate during their life. For this reason, the European Union embodied the concept of roadworthiness in the Directive 77/143/EEC which required certain vehicles to undergo periodic technical inspection to ensure that they still met appropriate technical standards throughout their life. This Directive has undergone various amendments and has been consolidated within Council Directive 96/96/EC, which provides minimum standards for the categories of vehicles to be tested, the items to be tested, the minimum standards, the methods of testing and the frequency of inspection.

Over time, the technical standard of new vehicles has changed considerably and the use of different types of vehicles has also evolved. Many Member States also carry out inspections to much higher standards than the minimum required by the Directive. This has led a range of stakeholders to propose a variety of amendments to Directive 96/96/EC with the aim of enhancing road safety, improving the environment and easing vehicle movement between Member States. In particular, the recent EU projects AUTOFORE and IDELSY have proposed a range of specific measures that are discussed below.

A great deal of previous research has shown that older vehicles suffer more technical defects than newer vehicles. Directive 96/96/EC acknowledges this by requiring technical inspections for passenger cars and light goods vehicles only after four years from the date of registration. Technical inspections must be carried out every two years thereafter. However, some Member States require more frequent

inspections. For example, in the UK passenger cars first require inspection after three years and annually thereafter. The AUTOFORE project recommended that the minimum standard for the frequency of inspection for passenger cars and light goods vehicles should be increased to be annually once the vehicles reach 7 or 8 years old.

The Directive 96/96/EC does not require all vehicles to be inspected, the most notable exception being powered two-wheeled vehicles. However, some Member States do require such vehicles to be tested as part of their national enforcement schemes and the AUTOFORE project recommended that the Directive should be amended to require all Member States to include them. The popularity and mode of use of powered two-wheelers varies from country to country and thus the costs of implementing tests and the benefits to be obtained from doing so may also vary in different States and these issues could be an important influence on a decision to incorporate these vehicles across Europe.

The principle of free movement within the EU means that it is possible for a large number of vehicles in use in any one Member State to have been registered in another Member States. Some stakeholders have therefore argued that it should be possible for a certificate of periodic technical inspection from one Member State to be considered valid in the rest of Europe. However, such mutual recognition has the potential to prove difficult given the wide variation in standards, frequencies and tests across Europe. Some stakeholders have, therefore, argued that the requirements in different European Member States should be harmonised. This measure also includes some difficult issues and potentially large costs that will vary in each different Member State. In practice, Member States with higher requirements may be unwilling to reduce standards for reasons of road safety and environmental protection. However, requiring those States with lower standards to increase those to the level of the most stringent States could carry substantial costs, which some Member States may be unwilling to bear. Specific test methods and limit values may also vary in different Member States and, thus, testing organisations may be equipped with different test devices and machinery. However, it is possible that many of these different methods are equally effective at ensuring that the vehicle is roadworthy. As such, it may be possible to harmonise on the basis of principles of equivalence of outcome in order to maximise acceptability and minimise the costs of such a measure.

Modern vehicles are becoming increasingly equipped with electronic control systems. Some of these, such as engine management systems, control existing functions so as to provide improved performance. Other such as ABS, airbags and ESC create new control functions to provide an enhancement to the safety performance of the vehicle. Some of these functions are controlled by type approval requirements (e.g. ABS) but others are not (e.g. airbags). In either case it is desirable from a safety and environmental perspective to ensure that these systems continue to function effectively throughout the life of a vehicle in order to preserve the extensive benefits that they can offer. Currently, only emissions control systems based on Lambda sensors are tested and this is by means of measurement of exhaust gas emissions. There are no requirements to test ABS, airbags, ESC etc. Some Member States do require simple checks on such systems but, typically, these are based on checking that the relevant warning lamp on the vehicle follows its prescribed sequence.

Several stakeholders have recommended expanding the scope of the PTI to include at least such electronic control systems as are widely fitted to vehicles now with consideration to be given to future systems. However, rigorous testing of such systems within the constraints of a PTI can be very difficult. Research in the IDELSY project has suggested that it should be possible to develop systems based on the interrogation of on-board diagnostic systems but further technical development of the methods may be required.

Research has also suggested that greater use of on-board diagnostics could have the potential to fulfil some of the existing requirements and thus, reduce the time and increase the efficiency of the testing process. Some stakeholders have also suggested that some tests may now be obsolete because few, if any, vehicles fail the tests. There is, therefore a need to review the appropriateness of current testing regimes to assess whether the efficiency of the system is optimised. However, in many Member States, PTIs are carried out by private companies in free competition and some stakeholders have argued that such competition can result in time and efficiency gains compromising the technical rigour of the inspections. Also, some concerns have been expressed that removing tests of systems with very high compliance may result in reduced compliance in those areas. These factors will need to be considered in an objective assessment of potential improvements.

Vehicle safety and environmental performance is prescribed when the vehicle is new by the type approval Directives and each vehicle must be issued with a certificate of conformity (CoC) to show that it has been approved to the Directives. In addition to this, the manufacturer is obliged to demonstrate conformity of production i.e. that the vehicles produced will still all have the same characteristics as the examples subjected to homologation testing and assessment, within certain tolerances. The broad intention of periodic testing is to ensure that vehicles remain, where justified in cost-benefit terms, in a roadworthy condition throughout their lives. At present not all of the testing carried out at PTI matches the requirements of the CoC. In some, but not all areas, a certain amount of degradation in service is permitted. However, some items are tested at PTI for which there are no requirements at type approval, for example, in PTI corrosion is checked but there is no requirement for corrosion protection in the approval of the vehicle..

There are a wide variety of reasons for these differences. Firstly, the CoC and PTI have different targets and the PTI is not designed to be an “in-use conformity of production”. Also differences may be associated with the cost of test methods. At type approval a small number of vehicles are tested in order to approve very large volumes of production vehicles. Thus the cost of the tests can be spread over the price of a large number of vehicles, meaning more comprehensive, time consuming and expensive tests can be carried out. At PTI each individual vehicle must be tested and the whole cost borne by the owner of that vehicle, thus much cheaper simpler tests must be carried out. For example, Directive 71/320 sets out minimum standards for braking systems which involve a comprehensive suite of requirements and tests including extensive full scale dynamic tests on a test track. There are requirements relating to stopping distance, deceleration and stability of the service brake system under different vehicle load conditions, performance in the event of brake failure, parking brake requirements, resistance to brake fade, brake response times, residual braking. PTI braking requirements for the basic performance typically rely principally on a measurement of brake torque to demonstrate that the level of torque generated approximates to that required to produce a deceleration equivalent to that required at type approval. However, this takes no account of dynamic load transfers, stability, resistance to fade etc., and can only consider different states of vehicle load to a certain extent. It is possible that the extent to which the PTI assesses vehicles performance in a manner consistent with the type approval and

CoC requirements could be improved, it is clear that there may be substantial challenges in doing so and the feasibility of any change will need to be considered in light of all of these aspects.

In the wider arena of road safety it is generally acknowledged that assessing the casualty benefits of measures that avoid accidents can be very difficult. One of the fundamental reasons for this is that when a measure is successful, no accident occurs and thus, no record of the event appears in any statistics to enable direct comparisons. In contrast, features that affect the severity of accidents can be easier to assess because they may change a fatal accident to a serious accident and more direct comparisons are possible. Many of the safety related requirements in PTI are intended primarily to prevent accidents and as such this data limitation will present a challenge in terms of quantifying the casualty prevention benefits of any measures.

One of the techniques commonly used to overcome this data limitation is by statistically comparing the involvement rate per km of vehicles equipped with a safety measure with those that are not so equipped. Many countries do collect such exposure data but it is typically only divided by vehicle type (e.g. car, truck etc). For many analyses it would be desirable to be able to compare rates for individual makes and models of vehicle but the exposure level is not currently this detailed. Several countries PTI schemes do record the odometer reading on a vehicle when it is presented for inspection but this is usually on a voluntary basis. It is possible that this information could be used to help contribute to improved techniques for research into the casualty prevention effects of accident avoidance safety measures, although substantial difficulties may need to be overcome. For example, individual vehicles are presented for test throughout the year rather than all at one time so the information recorded would not provide a direct measure of the distance travelled by all vehicles of a certain model in one particular calendar year.

4.2.2 Experience of the consortium

This section is intended to convey the comprehensive width and depth of experience that is offered to the EC. Readers that are familiar with the experience offered may wish, on first reading, to turn directly to our proposed methodology for this project, which begins with a summary of the objectives in section 4.3.

4.2.2.1 Overview of the consortium and experience in related studies

CITA

A- Company profile

CITA is an international non-profit association based in Brussels, Belgium. It represents all types of organisations and stakeholders (government; non-profit; profit; dedicated inspection centres; garage-based test centres; test equipment manufacturers etc) who share a common interest towards in-service vehicle inspection, especially in relation to road safety and environmental protection. CITA is recognised by the Commission of the European Union and the United Nations Economic Commission for Europe for its expertise in relation to roadworthiness inspections. CITA has over 90 members worldwide, representing 47 countries and covering over 200 million vehicle inspections a year.

MISSION Statement

CITA's aim is to play a leading role in shaping the future for sustainable Roadworthiness Inspection & Enforcement in all regions of the world, based on its conviction that effective in-service vehicle inspection is, and will remain, an essential element of all types of successful roadworthiness control regimes, thus contributing to the social and economic benefits of improved road safety and environmental friendly road transport.

It will achieve this aim by being;

influential with all key stakeholders;

proactive; and

representative;

through proposals and policies for all types of in-service road vehicles based on:

objective, impartial analysis of the social and economic benefits of vehicle inspection and other solutions for in-service control of vehicle roadworthiness; and

the need for independent control of all types of roadworthiness control regime.

Main activities:

To facilitate the exchange of information and experience among its members within the field of compulsory inspection of in-service motor vehicles and their trailers with regard to road safety and/or the protection of the environment.

To propose, co-ordinate and develop studies and scientific enquires to improve the quality, effectiveness and efficiency of inspections of in-service motor vehicles and trailers carried out to meet compulsory periodic test requirements or inspections carried out by enforcement authorities.

Activities include:

standardisation of the inspection methods

standardisation of the inspection conditions applicable to the different categories of vehicle;

improvement and standardisation of quality control, assurance and accreditation systems and standards used to ensure the consistent application of pass and fail criteria;

improvement and standardisation of information systems which hold data on inspections and which are used to improve inspection consistency and to increase the effectiveness of police inspections;

improvement of the professional training of the personnel appointed to carry out the compulsory inspections of in-service motor vehicle and trailers;

co-operation with the European Union and the united nations (UN/ECE) institutions and relevant public and private international and national bodies on the items above;

generation of expert proposals to contribute to the improvement of road safety and to the protection of the environment.

In support of its aims, it;

Regularly organises international conferences,

Publishes reports on its conferences, studies and other documents;

Draws up recommendations that might become subjects of international conventions or resolutions;

Promotes and fosters the consultation and the exchange of information among its members

Promotes, on its members request, information relating to the complulsory inspection of in-service motor vehicles and trailers;

Consults other organisations interested in compulsory inspection of in-service motor vehicles and their trailers.

B- Experience in related studies

List of all contracts, subsidies and loans which the applicant has obtained directly or indirectly during the last five financial years from a European Union institution (including the European Commission).

- B99-B2 702010-SI2.67868/I B3 99 002/SUB. CITA, a study on on improvements to emission testing at periodic and other inspections

- B99-B2 702010-SI2.67848/I B3 99 003/SUB. CITA, a study on electronically controlled systems on vehicles

- B99-B2 702010-SI2.142125/I B3 99 020/ CITA, a second study on on improvements to emission testing at periodic and other inspections

- Grant Agreement N° TREN-04-ST-S07.39054 with the acronym “AUTOFORE”, a study on the future options for roadworthiness enforcements in the European Union

APPLUS ITEUVE TECHNOLOGY

A- Company profile

Applus+ is a company providing global certification services created with the previous experience of Agbar Automotive, which already had international presence in the automotive sector, which had naturally evolved to the certification in all sectors

Services of Applus+ in different sectors are: research and development, testing, inspection, certification, homologation, management, improvement, consulting and training. Services are granted through the divisions of A+: Auto, Idiada, LGAI, Non Destructive Testing and Inspection and Technical Assistance

Applus+ is present in 25 sectors: aeronautics, food, industrial applications of laser, automotive, ships and boats, heavy boilers, building, energy, industry, moulds, environment, trades, metallurgy, petroleum, labour risk prevention, chemistry, IT, etc…

Applus+ headquarters are in Spain, Copenhagen, Chicago and Shanghai and counts with a 8.500 persons staff mainly located in Spain, Italy, Germany, France, UK, Denmark, Argentina, Brazil, Colombia, USA, Mexico, Japan, China and South Korea.

Applus+ and the automotive sector

Applus+ is currently present in the certification of the all phases of the life of a vehicles. We are offering our services to the main public, like in vehicle periodical inspection, to vehicle and parts manufacturers and to authorities.

Applus+ actively participates though its division Auto in the technical inspection of vehicles, both considering safety and environmental aspects, performing over 18.000.000 inspections per year all around the world.

Applus+ Auto

Applus+ Auto is the division in charged of the vehicle inspections operating in Spain, Andorra, Denmark, Finland, USA, Argentina, Chile, Equator and China.

The geographical diversity of the operations of Applus+ Auto allows us to obtain first-hand knowledge about almost all possibilities of vehicle inspection schemes used in the world. Since the US centralized and decentralized models, in which the responsibility of quality assurance is given from the authorities to a private company through a tender process, to the free competition scheme of Denmark or Finland.

This experience, together with the active participation of Applus+ Auto in the last EU-founded projects in the sector: Idelsy an Autofore places Applus+ in an excellent position to bring into the project all the state-of-the-art experiences coming from all around the world.

Applus+ auto has undertake important research projects, as the suitability of remote control techniques to measure pollutant emissions from vehicles, which was presented during Chicago's Cita Conference (May 2005).

Applus+ Idiada

Applus+ Idiada is the division of Applus+ intended for approval, testing and engineering of vehicles. Applus+ Idiada

For more than 25 years, Applus+ Automotive Technology through its technical centre Applus+ Idiada works together the automotive industry in the certification of their products according to international standards.

Applus+ Idiada is officially recognised test house for approval tests in the European Union and other regions in the world. Regularly collaborates in the meetings where vehicle standards are produced: EU directives and ECE regulations.

Applus+ Idiada headquarters are in Tarragona, 70 km southwards of Barcelona (Spain), where manages a 370 hectares complex including proving grounds and state-of-the-art laboratories. Other working offices in Spain are Madrid and Vigo. Abroad locations are Germany, Italy, France, Luxembourg, UK, South Korea, Japan and Taiwan.Applus+ Idiada is an EuroNCAP official laboratory

B- Experience in related studies

The experience of Applus+ in projects at European level in the automotive field is remarkable. The last two projects co-founded by the European Commission and related to the vehicle inspection, Idelsy and Autofore counted with the participation of Applus+ Iteuve. In Idelsy, the collaboration was as a partner, whereas in Autofore the contribution was in the management of the project.

Appls+ IDIADA has got an extensive experience on research and development projects with an active participation in around 10 different projects from the 5th and 6th framework programmes for research and technological development. Currently Applus+ IDIADA is working on the definition process and the initial stages of several projects to be developed during the 7th framework programme (2007-2013).

As an example of European collaboration initiatives some vehicle safety projects can be mentioned: AUTOFORE, CHILD (Child Injury Led Design), ROLLOVER, NPACS (New Programme for the Assessment of Child-restraint System) or ETAC (European Truck Accident Causation). Another good example of Applus+IDIADA's development initiatives is the EuroNCAP (European New Car Assessment Programme) project, where Applus+IDIADA is one of the official test houses since 2003.

Applus+IDIADA in its capacity as technical consultant for the Spanish Ministry of Industry, Commerce and Tourism actively participates in EEVCC and ECE Working Groups in the development of new standards on passive safety.

ARGE TP 21 GBR FROM GERMANY (ARBEITSGEMEINSCHAFT TECHNISCHE PRÜFSTELLE FÜR DEN KRAFTFAHRZEUGVERKEHR)

A- Company profile

In 1999 operators of technical inspections organisations in Germany (TÜV NORD Mobilität GmbH & Co. KG, TÜV Kraftfahrt GmbH, TÜV Süd Auto Service GmbH und DEKRA Automobil GmbH) founded the association Arbeitsgemeinschaft Technische Prüfstellen des 21. Jahrhunderts (arge tp 21) (Association of Technical Inspection Organisations for the 21st Century). A major impulse for the foundation of the association was to give authorities, citizens and PTI-inspectors advice and information on sustainable prospects for the enhancement of road safety.

Due to the growing penetration of the market with advanced driver assistance systems, measures have to be taken on the European and national level. These measures should closely relate as well to existing measures as to future plans regarding the objective ofenhancing road safety as outlined in the road map of the European Commission e. g. in the scope of the “eSafety” and ”Intelligent Car” initiatives. For safe and intelligent vehicles modern technologies of information and communication are of considerable value. In Germany, organisations responsible for technical inspection of vehicles are entrusted with the task to ensure road safety by authorities. Beside conducting periodical technical inspections, approving technical modifications on vehicles and driver’s examinations, they also gather comprehensive information for politics and consumers on road safety. They are of great value for society in Germany, because they are concerned with implementing concrete aims and objectives in the field of road safety by a qualified region-wide service network.

Comprehensive publications on the benefits and improvement of safety by advanced drivers assistant systems

In future, new generations of these systems will contribute considerably to the improvement of road safety for road users. That is to say, they will strengthen safety for drivers and unprotected other road users, such as pedestrians and cyclists. In principle, today’s accident risk is not acceptable, among other things, because the potential to prevent accidents which could be provided by the current technical innovations is underachieved. The low level of information on the side of the citizen in regard to today’s potentials to prevent accidents is partly responsible for this drawback. By providing the citizen with more substantial information on the benefits for safety of advanced driver assistant systems, the incorporation of these systems into vehicles would become a more decisive criteria of choice for consumers purchasing a new car. In the mid-term, this would result in a more extended and more accelerated integration of these systems in vehicles. Clear and easy works of reference have been created for the web. They are a tool for the citizen to inform himself about the current status of modern vehicle technologies. This development can be complemented by the distribution of additional information to the driver following technical inspections.

Employment and distribution of a transparent market-wide denomination for advanced driver assistant systems

In order to avoid confusion on the side of the citizen, it is of major importance to employ standardised, market-wide denominations for these systems. An adequate instrument to

exemplify the citizen the potential safety level of his vehicle model would be an documentation, distributed in the course of periodic technical inspections. Per annum at about 50 percent of the registered keepers of vehicles could be informed during periodical inspections. A general technical inspection report could give an outline of the devices – including standard and optional equipment – as well as an explanation for the use of these devices and their operability for the individual vehicle. This way, the keeper of the vehicle is provided with information about the safety-relevant standard and optional equipment available for his vehicle. Due to this knowledge, he will recognise the benefit for the safety of his vehicle and, purchasing a new car, will make his choice also by taking into account technical safety equipment.

Dynamic adaptation of periodic technical inspections to modern technology in vehicles

Given technical innovations, the characteristics of vehicles change from being mechanic to being mainly mechatronic means of transport. Driver tasks are substituted by advanced driver systems, which not only serve to detect dangers, but also prevent and reduce accidents. If accidents are inevitable, these driver systems protect the lives of driver and passengers. In addition to that, the integration of technological innovations into vehicles not only serves to reduce fuel consumption and to diminish pollution, but also improves decisively efficiency and comfort in the transport sector. Another aspect is that the use of innovative material and an optimised design makes mechanical systems more refined. In a conclusion, technical inspection is confronted with new challenges. One of the most important characteristics of directive 96/96/EC is that it establishes minimal standards for the technical inspection of vehicles and their trailers. Because of the restriction mentioned above, the aim of the directive can not be realised completely. Consequently, the task of authorities for technical inspections is to optimise it by elaborating modes of inspection which are adapted to technical innovations in vehicles, and by this serve to enhance road safety.

To provide a basis for todays and future advanced technical inspections, arge tp 21 develops and maintains concise, up to date, and user-friendly database systems for inspectors with online and offline access:

1. “Types and components“

   Database, that consists of national and international standards for homologation of vehicles and systems, as well as of national standards for homologation of vehicle components

2. “Tyres”

Certificates for 60,000 tyres and 1,000 types of vehicles for approved tyres and combination of tyres, that does not only include data for standard tyres and measures of rims for standard tyres, outlined in the documentation of every single vehicle, but also tyre relevant technical data

3. „Regulation“

Information on regulation concerning all aspects of transport, driver’s examinations,as well as approval of vehicles

4. “Inspection”

Information on position e.g. for vehicle identification number or motormodel, type-specific details for inspection as well as information provided by manufacturers in regard to modifications and technical manipulations.

Improvement and maintenance of the data bases for type-specific or design-specific modes of inspection, information on the integration of devices and other safety-relevant information (operational performance, accidents, technical modifications)

Following periodical technical inspections, experts by arge tp 21 make the decision, whether a specific vehicle meets the criteria established by the regulation in force as well as the requirements of road safety. This decision can only be made by the help of database systems, which give detailed information about the devices incorporated in a specific vehicle. In order to provide the conditions for the inspection of safety-relevant electronically controlled systems in vehicles, arge tp 21 has created a database system for system data. In Germany this database system provides the following information:

1. Information on the integration of devices

Total amount of information about devices and systems integrated in a specific vehicle and about its safety-relevant electronic components

2. Features of identification

Features, which – on its own or in combination – facilitate the unequivocal identification of a specific system or device),

3. Modes of inspection of safety-relevant electronic systems

Testing of the operability and the effect, as well conditions that have to be applied or provided for in testing; conditions that are reliable and avoid damages.

In future, information on other relevant components, such as mileage, accident register, or technical modifications might also be included. So experts can provide the keeper of a vehicle with detailed safety-relevant information about his vehicle.

Maintenance of individual safety level of a vehicle covering the entire service cycle of a vehicle

The operability of the components of advanced drivers assistant systems has to be ensured over the entire service cycle of a vehicle. In order to achieve the aim of optimising road safety and minimising the fatalities and injuries on the road, it is necessary to maintain the safety standards of a vehicle covering its entire service cycle. It can not only be ensured, that safety systems in which the second or third keeper of a car has confidence remains intact years after manufacturing date, but also that the high safety standards of a specific vehicle are maintained, and the original safety level is not affected by failures in the system, deterioration, demounting or manipulation. Nevertheless, to develop technical inspections it has to be assured, that the high safety and environment standards guaranteed by manufacturers - as the holder of type-approval – can be maintained over the entire service cycle of a vehicle. On the responsibility of the keeper of the car, these high standards on road safety and environment have to be guaranteed also in case of repairs and technical modifications. Indirectly, these measures do not only serve to optimise road safety, but from the view of the driver also form the basis of confidence in these advanced driver assistant systems.

Optimised driver's examination and the problem of the integration of driver assistance Systems

In Germany as in any other European member states, beginners are more likely to die or to be injured in accidents than advanced drivers. Amongs youth beginners the accidents risk is particularly high. Optimising the driver's examination forms part of a campaign that focusses on the reduction of accidents risks. The implementation of these aims and objectives is realised in particular projects by arge tp 21. Samples of relevant aspects of these projects are given below:

1. Design of an optimised driver's examination by the formulation of new methods of exercise-generation, that is to say, fast and easy formulation of new types of exercises in particular in regard to accident risks among beginners.

2. Integration of questions into the theoretical driver's examination concerning the benefits and the use of advanced driver assistance systems.

Abstract:

The activities of arge tp 21 in the field of public relations and innovation have an immediate impact on the improvement of road safety in Germany and Europe, as by the generation of single standards and new methods of approval common quality standards for technical inspections are established. Additional activities in cooperation with legislative, automobile industry, and trade make the technical experts not only a recognised expert for periodical technical inspections, but by his commitment in the field of driver's examination and public relations he is also acknowledged in consumer protection, that is to say, as a promoter of road safety and environment protection.

B- Experience in related studies

AUTOFORE:
Soon after 2000, both DGTren and CITA separately concluded that the time had come for a far-reaching review of the current roadworthiness enforcement and inspection situation in Europe. This coincidence of views provided the foundation for the AUTOFORE study.

Arge tp 21 was a leading partner organization of the DG TREN – Project AUTOFORE. Following main - items in the project were prepared or supported by arge tp 21, e.g.:

- Literature Research (Current situation of roadworthiness enforcement in Europe and exemplary worldwide)
- Questioning of PTI – organizaitions, Governmental Bodies and other stakeholders to relevant items
- Attitudes of other stakeholders regarding to roadworthiness enforcement
- Actual trends in vehicle and diagnostic technology
- Researches to an EU Technical Vehicle Inspection Database
- Different special evaluations regarding to roadworthiness enforcement
- Support in preparation of the final report

Other tasks of arge tp 21 in past and today:

- Supporting the issue of amending directive 99/37/EC to allow the use of smart cards instead of paper documents for vehicle registration purposes.
- Supporting of debureaucratisation in process by vehicle registration with national registration authorities
- Supporting of introduction of modified national legislation regarding to roadworthiness items
- Supporting of new vehicle concepts (e.g. Gigaliner)
- Supporting of items concerning to environmental protection (CO2-discussion).
- Supporting of national quality management systems for PTI
- Works for dynamic sampling of Directive 96/96/EC and consolidation of UNECE and EC

BILPROVNINGEN FROM SWEDEN

A- Company profile

Bilprovningen (the Swedish Motor Vehicle Inspection Company) is by appointment of the Swedish government solely responsible for inspecting all vehicles registered in Sweden.

Operations

Since the compulsory periodic inspection was introduced in 1965 Bilprovningen has contributed to an increased road safety, a decreased environmental influence of traffic and an improved vehicle economy for private motorists and companies.

Bilprovningen inspects approximately 4 million vehicles each year.

Bilprovningen also offers non-compulsory services, for instance Bildiagnos (car diagnosis) whereby a used car is tested to check what shape it is in before a customer decide on buying or selling it.

Organisation

Bilprovningen has 175 stations and two mobile units throughout Sweden.

Bilprovningen is co-owned by the Swedish government, organisations of the Swedish motor industry, motor associations and motor insurance companies.

Bilprovningen's competence, technical equipment and inspection methods are in many areas among the best in the world.

Bilprovningen has approximately 2 000 employees.

B- Experience in related studies

Bilprovningen had the role as Project Manager in the AUTOFORE project. Bilprovningen was also represented in the Project Steering and Strategy Group.

Bilprovningen has participated in the amendments of the brake systems regulation R13-EC regarding PTI issues. Bilprovningen has participated in the development of international standards regarding the roller brake tester for PTI, compatibility and reference brake forces for heavy vehicles at PTI. Bilprovningen has developed the latest amendments in the Swedish PTI regulations regarding brake testing for heavy vehicles.

Bilprovningen have together with Swedish Road Administration developed the PTI Regulations in Sweden. Bilprovningen is in charge of developing the regulations including method developments, feasibility studies and implementation.

TRL LIMITED

A- Company profile

TRL was originally founded in 1933 as a government research department. The Road Research Laboratory (RRL as it was then called) moved to the Crowthorne site in 1966 where major facilities included a large research track and various test laboratories to carry out research for the UK government. TRL was successfully transferred to the private sector in 1996 and has operated independently since that time. As a result, we are able to offer a completely unbiased assessment of the key issues affecting transport in all modes. Amongst our major customers are the European Commission, UK government (various departments such as the Department for Transport, Highways Agency and Health and Safety Executive), the World Bank and numerous manufacturers.

Many of TRLs researchers are recognised as world experts in their fields and we work in many countries worldwide. The quality of our work has a reputation for being second to none. Our familiarity with government work has enabled us to build up expertise in areas that affect government policy decisions both nationally and internationally. We have built up similar relationships with the European Commission, having worked on EC funded projects for over 15 years, and are currently involved in many Framework projects. Furthermore, we are the prime contractor for ENTR 05 17 on automotive safety and second contractor for TRAN/FWC/2006-156 for policy on transport.

TRL's research programmes cover a wide range of transport modes featuring road, rail, air and waterborne transport modes. TRL holds one of the largest accident databases in the world. We offer expertise in all of the technical areas involved in this tender including safety, environment and operational issues as well as human factors, political, social and economic factors. Hence we are able to offer a wide range of expertise under one roof.

B- Experience in related studies

TRL is the prime contractor on a framework contract with the EC (DG Enterprise and industry) and, as a result, has recently carried out a range of research projects on a variety of subjects with the aim of impartially assessing different proposed regulatory measures and amendments and carrying out cost benefit analyses that the EC can use to write their Impact Assessments. These projects have included:

- Assessing the costs and benefits of different options for implementation of the second phase of the pedestrian protection Directive
- Development of regulatory proposals for Brake Assist Systems
- Assessing the costs and benefits of regulations to control the construction of vehicles powered by Hydrogen fuel.
- Technical requirements, costs and benefits for automated emergency brake systems
- Defining test methods, limit values, costs and benefits for an improved agricultural vehicle braking Directive.
- Defining tests, limit values, costs and benefits for an improved rear underrun Directive

- Assessing the costs and benefits of extending the scope of UNECE Regulations on door locks and hinges.

TRL has also carried out many comprehensive cost benefit analyses on a huge range of other projects for other clients in the field of vehicle safety, emissions and air quality and noise. An example of a suitable methodology for the assessment and valuation of noise impacts can be seen in a report TRL and other partners wrote for an EC project assessing tyre noise from vehicles.
(http://ec.europa.eu/enterprise/automotive/projects/report_tyre_road_noise1.pdf).

TRL's air quality team has extensive experience of the emissions from light-duty and heavy-duty vehicles and of worldwide inspection and maintenance programmes. They have previously designed and monitored the in-service emissions test used in the UK's annual inspection programme and were involved in the Joint Commission Study to evaluate alternative in-service emission tests. They are knowledgeable in the data available from EOBD systems fitted to Euro III cars onwards and are currently involved in updating national emission factors for road vehicles. TRL also hold data on traffic activity in Europe (from models such as TREMOVE). Together, these could be used to estimate the total change in emissions from the European fleet following a change in the emissions test programme. With extensive knowledge of air quality, the relationship between emissions and air quality can also be addressed. TRL has have been involved in a range of projects in this area including:

- OSCAR (Optimised expert System for Conducting environmental Assessment of urban Road traffic)
- PARTICULATES
- ARTEMIS (Assessment and Reliability of Transport Emission Models and Inventory Systems)
- MEET (Methodologies for estimating emissions from transport)
- UK project to develop an in-service emissions test for catalyst equipped cars – now included within the annual in-service test n the UK.
- UK project to evaluate the effectiveness of the in-service emissions test.
- An assessment of the Local Authority Roadside Vehicle Emissions Enforcement pilot scheme, prior to it going national.

- An assessment of the Local Authority Roadside Vehicle Emissions Enforcement scheme, after national implementation.
- Carry out roadside emission tests on behalf of various local authorities.
- Feasibility study into the usefulness of remote sensing for detecting high emitting vehicles – for UK and EC.

TRL has worked on a range of projects related to electronically controlled systems. This includes research on systems already widely fitted to vehicles such as ABS, airbags, brake assist systems and ESC but also includes emerging and future technologies such as Automated Emergency Brake Systems, advanced vulnerable road user sensors and protection systems and adaptive restraint systems.

TRL was a subcontractor on the EC funded project, managed by CITA, assessing the reliability of electronically controlled systems on vehicles. TRL's role was to generate detailed information on the failure rates of components in such systems and to assess the costs and benefits of inspecting such systems to reduce the incidence of failure. TRL carried out research to develop a sensing system capable of use in as an electronic stability control systems to prevent truck rollover and developed sensing systems for use in an advanced protection system for vulnerable road users.

TRL has extensive experience of the collection and analysis of accident data and manages the following accident databases on behalf of the UK Department for Transport:

- Co-operative Crash Injury Study (CCIS)
- Heavy vehicle Crash Injury Study (HVCIS)
- On the spot accident study (OTS)
- The VOSA collision defects database.

The last three of these projects contain varying degrees of data assessing the presence of vehicle defects and their contribution to accidents in the UK, which will form an important part of the assessments carried out for this project. In addition to this TRL is a partner in the European Road Safety Observatory project and have access to the CARE database, which will be very useful for extending the findings of the research across Europe.

Fresenius-University Institute for Economic Research and Consulting

A- Company profile

The Institute's research focuses on transport planning and transport economics. The research covers traffic safety analyses, inter alia market analyses, competition and integration of transport systems, evaluation tools of assessment, methods of forecasting and evaluation of transport developments, telematics, passenger and freight transport, demand analysis (elasticities, conjoint analysis, stated preference methods, and new econometric approaches), cost-benefit-analysis for organizational and infrastructure measures, road pricing and fiscal matters of transport. The overall economic analyses are extended by economical analyses and the estimations for the private rentability (e.g. break-even analyses, acceptance analyses). Thereby the research work reaches from the European level over studies with national and regional focus up to the local level. A strong research objective is the efficiency assessment of new Intelligent Transport Systems. Prof. Dr. Wolfgang H. Schulz is the Director of the Institute. He is Professor for Economics at Fresenius-University and Assistant-Professor at the Faculty of Economics, Business Economics and Social Sciences of the University at Cologne. Further Prof. Schulz is member of the American Economic Association and the German Transport Society. Prof. Wolfgang H. Schulz worked for the following projects.

B- Experience in related studies

Research Projects	Client/Financing	Date
Road safety in dangerous good transport on a deregulated transport market	Federal Institute for Occupational Safety and Health	1990
Effects of regulatory measures on the needs for transport infrastructure	Ministry of Transport (FRG) and Commission of EC	1996
TENASSES (Policy Assessment of TransEuropean Networks and Common Transport Policy)	European Commission DG VII	1996-1997
Decoupling of transport demand from economic growth	Ministry of Science and Technology of the FRG	1996-1998
MINIMISE (Managing Interoperability by Improvements in Transport System Organisation in Europe)	European Commission DG VII	1996-1999
EUROTOLL (European Project for Toll Effects and Pricing Strategies)	European Commission DG VII	1996-1999
Transport Choice Models	German Railways AG	1997
Political measures for improving the economic performance of airports in Europe	Ministry of economic and transport affairs of the state of Northrhine-Westfalia	1997/98
The economics of privatization of airports – The Case of Cologne/Bonn airport	Ministry of economic and transport affairs of the state of Northrhine-Westfalia	1997/98
Cost and benefits of transport	Society of Transport and Road, FRG	1997/98

Evaluation of accident costs in road traffic	Federal Authority for Highways	1997/98
Liberalization and harmonization of railway freight transport in Europe	Ministry of Science and Transport, Republic of Austria	1998
Employment effects of transport and of modal shifts in passenger and freight transport	Deutsches Verkehrsforum	1998/99
Efficiency analysis of measures in transport and environment	Parliament of the state of Northrhine-Westfalia	1998/99
Employment effects of transport	Deutsches Verkehrsforum	1998/99
Demand Analysis of transport demand. New cost based methods	German Scientific Society	1998/99
EUROSIL (European Strategic Intermodal Links)	European Commission DG VII	1998-1999
CANTIQUE (Concerted Action on Non-Technical Measures and their Impact on Air Quality and Emissions)	European Commission DG VII	1998-1999
Cost-benefit-analysis of CHAUFFEUR Assistant Systems	European Commission	2003
Road Safety and Environmental Benefit-Cost and Cost-Effectiveness Analysis for Use in Decision-Making (ROSEBUD)	European Commission	2003
Cost benefit assessment for AUTOFORE project	Europen Comission DGTREN	2005/2007
Transport Growth and Welfare – Empirical Study for Germany 2000-2006	Institut für Mobilitätsforschung	2006
System Dynamic Approach for forecasting transport development	Institut für Mobilitätsforschung	2006
Performance of inland waterways and their future potentials	Port Minden	2007
Transport Effects of the Capacity Enlargement of Cologne Harbour	City of Cologne, Port Cologne	2007

4.3 THE OBJECTIVES OF THE RESEARCH

The principle objective of this project is to:

- Improve motor vehicle roadworthiness testing in the European Union in a cost effective way

This will involve assessing the possibilities for amending Directive 96/96/EC, taking into account the obligations under the 1997 UNECE vehicle inspection agreement and any effects that the proposals will have on this agreement as well as the findings of previous research into the subject. Specifically, the project will consider improvements to the following aspects of roadworthiness testing:

- Raising or harmonising standards in Europe
- The feasibility of mutual recognition of roadworthiness certification
- Extending the scope of inspections to include electronically controlled systems
- The possibility of improving time and cost efficiency of inspections
- The compatibility of PTI with the requirements for the Certificate of Conformity issued after type approval
- The organisation of the stakeholders involved in PTI and the possibility of self certification
- Extending the scope of PTI to include types of vehicle not currently included such as powered two-wheelers
- The creation of a European Technical inspection database
- The addition of odometer readings during PTI.

The project should develop policy options considering all of the above and evaluate each of the developed options in terms of costs and benefits in a manner capable of forming the basis of an EC Impact Assessment in accordance with the Impact Assessment Guidelines SEC(2005)791 and its annexes.

4.4 THE METHODOLOGY PROPOSED FOR THE RESEARCH

This project will consist of three phases. The first phase is the definition of proposed options to amend Directive 96/96/EC. This phase will be carried out by the companies arg tp 21, Applus Iteuve Technologies and Bilprovningen with extensive experience on periodical vehicle inspections under general CITA direction. This phase will also including assessment of the feasibility of mutual recognition of roadworthiness certification, improving time and cost efficiency, and the extension of PTI to include other categories of vehicles.

The second phase will be carried out by TRL to independently evaluate the proposed options to amend Directive 96/96/EC and, where necessary include additional data and analysis in order to carry out a cost benefit analysis of the considered options.

The third phase will involve collation of the information generated in this project and the preparation of a final project report.

Phase 1: Definition

Based predominantly on the results of the AUTOFORE and IDELSY projects, CITA will propose and define policy options for amending Directive 96/96/EC on periodic technical inspection (PTI). These options will include raising and/or harmonising roadworthiness standards throughout Europe and will also consider whether closer harmonisation could be achieved by focusing on “equivalence of outcome” of the vehicle inspection so as to avoid the need for total harmonisation of all aspects of the testing regimes.

The options presented by CITA will take into account the introduction of an increasing number of electronic safety systems in motor vehicles. The options will also take into account the availability of new technologies such as on-board control systems and telemetry.

The proposed options will explore the possibility of an extension of PTI to other categories of vehicles not yet covered by current legislation (e.g. two-wheeled vehicles) and will present data on the present contribution of malfunctioning vehicles to accidents and the rate of avoidable technical defect related accidents, if inspection were introduced.

Using the results of the AUTOFORE and IDELSY projects, CITA will present data comparing the roadworthiness standards for Member States and provide data comparing the pass/fail rates of inspections.

In addition to the proposed options for amendment to Directive 96/96/EC, this project will also consider the feasibility of further enhancements to periodic technical inspections. Firstly,

CITA will review the systems and procedures for submitting a vehicle to a roadworthiness test for at least three Member States to assess the feasibility of a harmonised and uniform inspection certificate. The review will consider the need to maintain the quality of inspection to ensure that an excess of competition without authority control does not lead to a degradation of the inspection quality, and will propose steps towards mutual recognition.

Different types of organisations have different responsibilities for ensuring the roadworthiness of vehicles, e.g. PTI organisations, Roadside enforcement authorities and operator rating schemes. This project will draw on the results and conclusions of the AUTOFORE project to consider any new possible types of vehicle inspection organisation that may improve PTI cost and efficiency.

Using the work of the Working Group 2 of CITA, the feasibility of a European technical vehicle inspection database will be presented with a view to enhance the inspection effectiveness and efficiency. CITA will define the framework and content of such a database but is likely to contain data about the vehicles standard equipment and specific inspection instructions.

CITA will also evaluate the feasibility of the regular collection of data from odometer readings during roadworthiness tests. To find out how common it is to collect data from odometer readings in the EU countries CITA will design and distribute a questionnaire that will be sent to all member states and will seek to obtain the following information:

- If odometer readings are performed or not?
- What method is used to collect the odometer reading
- If the data are stored in a database or not?
- What the data is used for?
- Attitudes towards compulsory odometer readings?
- Attitudes towards sending data to official bodies?
- Present provisions concerning passing information to official bodies?

CITA will complement this questionnaire with a literature search and with other information available to them. Where necessary, there will be follow up contacts and interviews to fill any gaps in the data.

Phase 2: Evaluation

Using the data provided by CITA from Phase 1, TRL will carry out an independent evaluation of the proposed options for the amendment to Directive 96/96/EC and prepare a cost benefit analysis in a format consistent with the ECs Impact Assessment Guidelines. Whilst it is expected that the majority of the information needed for this task will be generated in Phase 1, TRL will seek to supplement the data from Phase 1 with additional data not previously used in the AUTOFORE or IDELSY projects in order to provide independent assessment and validation of the findings.

The assessment will begin with a review of the cost benefit analysis carried out in the AUTOFORE project, in conjunction with the University of Cologne, who carried out the previous analysis. This review will assess to what extent that analysis provides the information necessary to assess the policy options developed in this project as well as assessing whether additional variables or data could be added in order to provide a more comprehensive evaluation.

It is likely that the cost benefit analysis will draw extensively on the data from this previous analysis but will modify the structure of the analysis to reflect more closely the detailed options developed. However, where necessary TRL will also seek to identify and review additional literature and data that estimate the present contribution of malfunctioning lights, brake and tyres to technical defect related accidents. This information will be combined with available accident data to estimate the rate of avoidable technical defect-related accidents if the current minimum standard for the PTI was raised.

It is proposed that additional accident data will be obtained from a number of sources including, but not limited to, the UK's VOSA collision defect reporting system and the UK's Heavy Vehicle Crash Injury Study (HVCIS). It should be noted that use of data from these sources is subject to the approval of the sponsors of the database (The UK Department for Transport). The intention of these conditions is to ensure that the accident data is correctly used and not misinterpreted in any way. Approval should be a formality where TRL is involved in a project for the EC. The main constraint is likely to be that the sponsors of the data retain the right to review any part of a document based on the data prior to publication.

The rate of contributory defects in different countries will be combined with estimates of the effects of introducing amended PTI regulations to assess how many accidents could be avoided or mitigated by each of the policy options. The detailed data will be extended to

cover the whole of Europe using high level data from CARE and DG TRENs statistical pocketbook.

It is important for any future modifications to the roadworthiness testing regime to attempt to incorporate environmental benefits. Whilst the main body of the Directive 96/96/EC concentrates on vehicle safety performance, its evolution should consider the incorporation of wider benefits. In-service emission measurement has formed a part of the routine roadworthiness test for some years. This testing is performed through a range of programmes with the development of centralised testing in some member states, and decentralised testing in others. The in-service emission test cannot be more rigorous than the type approval limits under which vehicles were originally developed, and thus a range of in-service emission limits are currently in place to cover the idle emission of CO, HC, lamda and smoke, for a range of vehicle ages. It is therefore proposed that TRL will investigate the following issues:

- A review of in-service emission tests currently performed by each member state.
- An examination of emissions before and after vehicle servicing.
- An examination of the effects of deterioration and mileage on vehicle emissions.
- The distribution of emissions from various fleets across the member states.
- Consideration of the proportion of vehicles with excess emissions that would have been identified using existing in-service emission measurements.
- The identification of new in-service emission testing techniques, to allow both representative measurements of existing legislated pollutants, oxides of nitrogen and particulate matter mass or number. This may range from new measurement kit, to the use of OBD fault log communication. The latter has a benefit, as it has the possibility of identifying intermittent emission related faults.
- An analysis of the benefits arising from roadworthiness testing through the improved maintenance and its impact on emission reductions.
- An analysis of the impact of roadworthiness testing on fuel consumption.
- The impact of reduced emissions on air quality.
- The impact of air quality improvements to human health.

Each of the policy options will therefore also be assessed for their impact on emissions and air quality and this will be monetised for inclusion in the cost benefit analysis.

Vehicle noise is also controlled in PTIs, in particular by ensuring that the exhaust system remains in good condition. Several of the policy options may have an impact on the noise of vehicles in service (for example, increasing the frequency of inspections may reduce the length of time for which exhausts are defective). Methodologies for the assessment of noise impacts have been developed in previous research and standard methods are available for monetising the effects. These will be used to include any benefits of the policy options in terms of noise reduction in the cost benefit analysis.

Finally, TRL will, in collaboration with the University of Cologne, draw all of these elements together in order to assess the costs and benefits of each of the policy options proposed in Phase 1. The analysis will consider potential savings from a reduction in accidents, casualties, emissions and noise. The analysis will also consider any change in costs of carrying out PTIs that may arise from changes to the scope of the PTI, e.g. additional vehicle categories, additional test parameters, additional requirements for new test equipment and improvements in the efficiency of inspections.

Phase 3: Reporting

In direct response to the invitation to tender two formal reports will be submitted to the Commission.

The interim report will indicate the progress to date and will be submitted two and a half months after the date of signature of the contract. It will contain at least the following information:

- The results obtained and a comparison with the objectives as defined by the service request;
- information on the remaining work to be carried out;
- any particular problems encountered that would have a notable effect on the results of the tasks to be carried out;
- clear references and dates on sources of information used or to be used and the value of their methodologies as appropriate;

- clear indications and detailed planning of the work to be carried out during the period remaining for the completion of the tasks.

The interim report will be deemed to have been accepted by the Commission if it does not expressly inform the contractor in writing of any comments within 45 days of the Commission receiving it.

A draft version of the Final Project Report shall be submitted to the Commission four and a half months after the date of the signature of the contract. The report shall contain:

- an executive summary setting out the conclusions on each aspect of the report;
- the results obtained and a comparison with the objectives set out in the Invitation to Tender;
- information and clear references on sources of information used and the value of their methodologies as appropriate;

The Commission will have 45 days to approve or reject the draft final report and the Contractor shall have 20 calendar days to submit new documents, if required. The final report will be deemed to have been accepted by the Commission if it does not expressly inform the contractor in writing of any comments within 30 days of the Commission receiving it.

4.5 Management of the project

4.5.1 Project risks

An initial risk register has been completed and this can be seen in Table 4, below. The register describes foreseeable risks which, if they materialised, will have consequences for the project. Those consequences are not quantifiable and, therefore, no allowance has been made in our submission for the cost or time implications. In addition to this, there may be risks which are unforeseeable at this time.

Table 4. Initial risk register

Project: Impact Assessment study on the future evolution of roadworthiness tests		**Risk Register Prepared By:** M Dodd		**Issue Number:** v1 **Date:** 10/10/07
Risk ID	**Description**	**Overall P-I Rating**	**Effect**	**Reduction Strategy**
1	This is a complex multi-disciplinary project to be completed in a short timescale – unforeseen technical difficulties could occur	HI	This could cause delay to the completion of the project, increase the cost of completing the project and/or limit the technical quality of the work	The work will be carried out pre-dominantly by senior and experienced researchers. Management procedures are in place (e.g. TR scheme & earned value analysis) to identify problems early for discussion with the EC
2	The project is dependant on the input from a range of non-contracted stakeholders from across the EU. Stakeholders may be unable or unwilling to provide this input	M	A lack of co-operation from stakeholders will result in a reduction in quality of the work and/or a delay to the project which is beyond the consortium's control.	The consortium has extensive experience of managing stakeholder contributions in previous projects. Stakeholders will be initially contacted at an early stage of the project and regular managed contact will be maintained throughout the relevant period.
3	The EC has specified that the contract duration is 5 months and that the draft final report must be submitted after 4.5 months. The specification also states that the EC has 45 days to review the report and that the contractor has 20 days to provide an amended report.	HI	If the draft final report is completed on time and the EC takes the full permitted 45 days to review the report and TRL take the full 20 permitted days to amend it then the work will not be completed within the total contract duration of 5 months.	It is proposed that the EC extends the total duration of the contract or reduces the permitted time for the review/amendment process. It is not considered feasible to submit the draft final report one month early in order to accommodate the full review period.

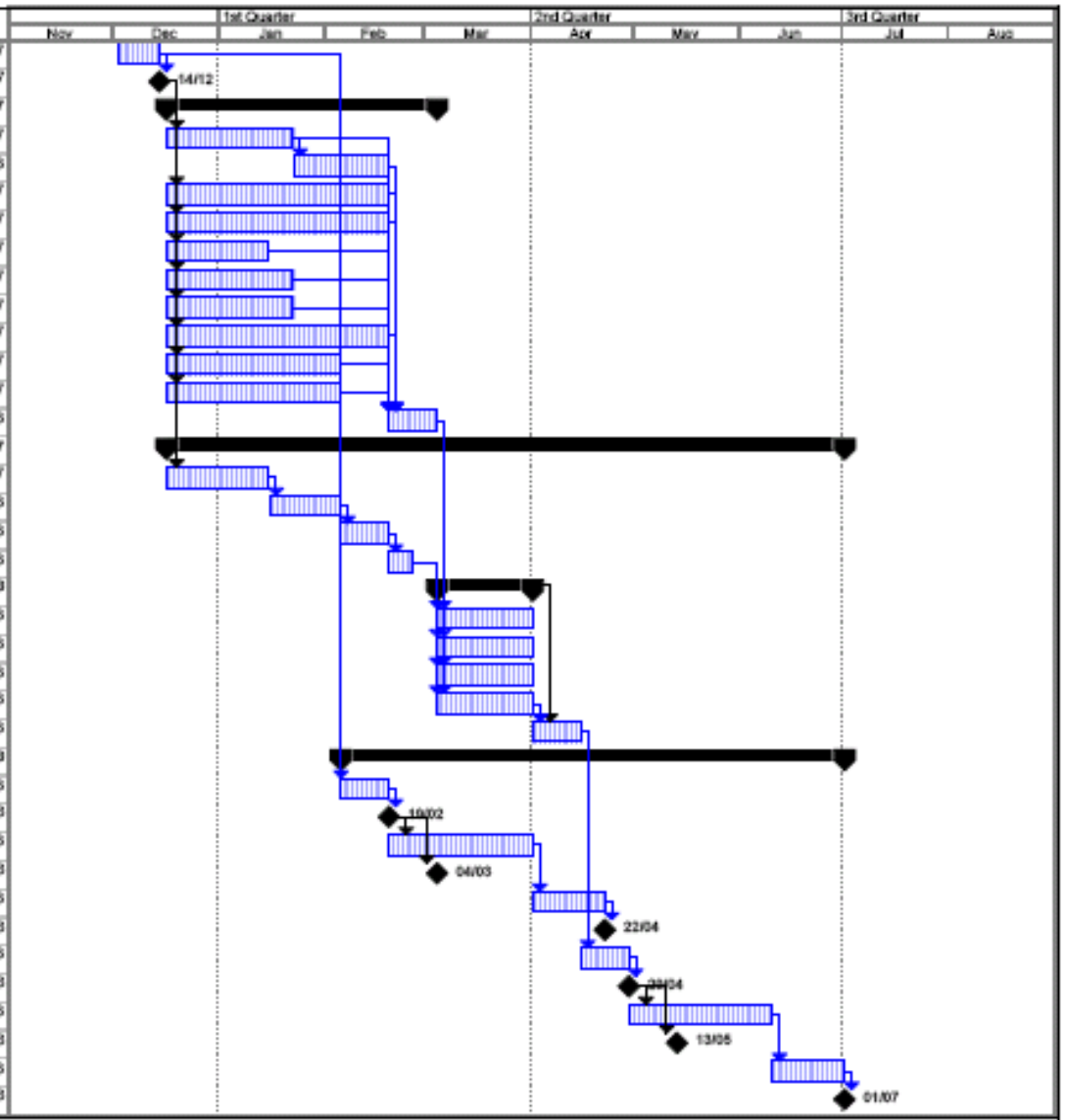
4.5.2 Timing and deliverables

The invitation to tender states that tenders will be opened on the 31st October 2007 It has therefore, been assumed that the project will commence on the 1st December 2007. All the timings stated in this section are in relation to this assumed start date. If the start is brought forward or delayed then the timings will be amended in accordance with that change. It should be noted that the Christmas break is expected to fall within the contract. The timings proposed take this into account but if the start date is moved then interim milestones and reports may move by up to two weeks in relation to the start date.

Milestone/Deliverable	Date
Submit draft interim report	19th February 2008
Submit draft Final Report	29th April 2008

The Gantt chart was developed showing the timing of the work in more detail.

ID		Task Name	Duration	Start
1		Project inception	10 days	Mon 03/12/07
2		Kick-off meeting	0 days	Fri 14/12/07
3		Definition of policy options	50 days	Mon 17/12/07
4		raising/harmonising standards	20 days	Mon 17/12/07
5		Mutual recognition of certificates	20 days	Wed 23/01/08
6		Extend to cover electronically controlled systems	40 days	Mon 17/12/07
7		Improve PTI efficiency	40 days	Mon 17/12/07
8		Comparison of PTI/COC	15 days	Mon 17/12/07
9		analysis of organisational responsibilities	20 days	Mon 17/12/07
10		Assess the potential for self certification	20 days	Mon 17/12/07
11		Extend scope to other vehicle types	40 days	Mon 17/12/07
12		Feasibility of a EU PTI database	30 days	Mon 17/12/07
13		Assess feasibility of odometer readings	30 days	Mon 17/12/07
14		Define combined matrix of options	10 days	Wed 20/02/08
15		Evaluation of policy options	135 days	Mon 17/12/07
16		Review AUTOFORE CBA	15 days	Mon 17/12/07
17		Literature review	15 days	Wed 16/01/08
18		Identify data sources and characteristics	10 days	Wed 06/02/08
19		Define methodology	5 days	Wed 20/02/08
20		Assess benefits	20 days	Wed 05/03/08
21		Accidents	20 days	Wed 05/03/08
22		Emissions and air quality	20 days	Wed 05/03/08
23		Noise	20 days	Wed 05/03/08
24		Assess costs	20 days	Wed 05/03/08
25		Cost benefit analyses	10 days	Wed 02/04/08
26		Reporting	105 days	Wed 06/02/08
27		Write draft interim report	10 days	Wed 06/02/08
28		Submit draft interim report	0 days	Tue 19/02/08
29		EC comments on interim report	30 days	Wed 20/02/08
30		Interim meeting	0 days	Tue 04/03/08
31		Amend draft interim report	15 days	Wed 02/04/08
32		Submit interim report	0 days	Tue 22/04/08
33		Write draft final report	10 days	Wed 16/04/08
34		Submit draft final report	0 days	Tue 29/04/08
35		EC comments on draft final report	30 days	Wed 30/04/08
36		Final meeting	0 days	Tue 13/05/08
37		Amend draft final report	15 days	Wed 11/06/08
38		Submit final report	0 days	Tue 01/07/08



Project: 98_98 review timing plan.mpp
Date: Mon 08/10/07

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

4.5.3 Meetings

A kick-off meeting will be held with the EC in Brussels within 15 days of the start of the project in order to set up the details of the work to be undertaken.

A further two meetings with the EC and potentially other stakeholders, one in the middle of the project to discuss the interim report, and one at the end to discuss the final report. It has been assumed that all meetings with the EC will take place in Brussels and that one person from each of the consortium partners will attend each of the three meetings. The travel costs associated with these meetings are included in the financial proposal

4.6 Project team and roles

The consortium that we have assembled offers a multi-skilled approach to this project. The proposed team offers a wealth of experience as summarised below for the key members only. Full CVs for all staff are enclosed in the annex.

CITA

Ron Oliver – Mr Oliver will be part of the project management team and acting as Project Director. R Oliver has 27 year experience with periodical technical vehicle and roadside inspections in the UK and with CITA. Over that period he was active at top management positions and as such involved in the strategic developments over that period giving him an solid background required to act as a project director on this subject. He was also involved in many studies and often gave strategic direction to the project groups. Mr Oliver is currently also holding the position of CITA President.

Wim Labro – Mr Labro will be part of the project management team and acting as Project Administrator. W Labro has 15 year experience in automotive and is holding the position of CITA Executive Director since 2004. Together with his experience as project administrator for the AUTOFORE project it gives him an excellent background to take up this position for the project. He will co-ordinate the administration of the project, inclusive the budget and financial reporting.

TRL

Sal Ahmed – Mr Ahmed will be TRL's Project Manager for this project. S Ahmed joined TRL's Vehicle Safety and Engineering Department in March 2005 as a Project Manager. Sal is currently the project manager for a large EC Frame Work contract worth €4M as well as looking after a number of DfT projects.

Iain Knight – Mr Knight will be TRL's technical lead on this project, responsible for vehicle safety aspects of the work and co-ordinating TRL's technical contributions. Iain has worked at TRL for approximately 12 years and is a TRL Academy Fellow. His core expertise is in vehicle primary safety, the investigation of accidents and the analysis of accident databases. He has presented evidence from his work at international conferences and committees as well as directly to decision makers in Government and industry. His experience includes research into accident cause and effect, the potential of longer, heavier goods vehicles, braking, handling, rollover stability and the performance of safety features such as ESC, CMBS, BAS and under-run protection.

Mike Ainge – Mr Ainge has worked for TRL for the past 12 years, and is currently the Leader of the of the Noise & Vibration Team, alongside his responsibilities as Senior Research Engineer in which he plays a key role in the completion of a variety of projects. Mike has had a broad experience of the engineering industry over the past 30 years, gaining experience in a number of disciplines including: design and manufacturing, defence engineering and research.

Ian McRae – Mr McRae has worked in the pollution & emissions team for 17 years, conducting research linking emissions and air quality. He has been involved in the air quality assessment of road schemes and projects, and has participated in public inquiries. He has acted as an advisor to a number of UK local authorities on air pollution monitoring and modelling. This experience has led to the development of tools, including the air quality impact assessment methodology contained within the DMRB. He has worked on a number of EU projects including KITE (Telematics & the environment), ARTEMIS (Multi-modal transport emission modelling), OSCAR (Expert system for the management of urban congestion) and TREMOVE (Transport emissions & evaluation model).

Ian Simmons – Mr Simmons will carry out the technical referee role on this project with responsibility for ensuring the highest technical quality throughout the project and reviewing and authorising all outputs. Ian has worked at TRL for many years and has a broad range of research experience including the effects of heavy vehicle suspension on structural road

damage and the investigation of on-board axle weighing, rollover monitoring and control devices for heavy vehicles.

Applus+ Iteuve Technology

Eduard Fernández – Mr Fernandez has spent almost all his professional live in legal aspects of the automotive industry, including the approval, conformity of production and vehicle inspection. His main role in the project will be supervising the activities corresponding to Applus and keeping communications with other members of the project. He will participate in phase 1 “Definition” of the project.

Víctor Salvachúa – Mr Salvachúa has started his professional live as passive safety engineer, moving afterwards to the position of responsible of R&D projects in the field of vehicle inspection. He will be responsible for the daily work of the activities corresponding to Applus. He will participate in phase 1 “Definition” of the project.

Both are mechanical engineers and have experience on European projects, like Autofore, Idelsy, CHILD, Rollover, etc.

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Mathias Rüdel – Mr Rüdel will take part to phase 1 “Definition” of the project. His experience with periodical vehicle inspections and national and European projects provides him with and excellent know how to participate in the definition phase of the project.

Bilprovningen

Jorge Soria Galvarro – Mr Soria Galvarro started his carrier at The Swedish Vehicle Inspection Company working with Technical Support for PTI and First inspection. Currently Mr Soria Galvarro is responsible for Bilprovningen PTI research activities and methods development. Mr Soria Galvarro is also the current chairman for The Swedish and the international ISO group of brake experts developing international standards and regulations. In the project he will work in the definition phase.

Göran Dahl – Mr Dahl started his professional carrier at the Department for Traffic Planning at the Royal Institute of Technology as a researcher. He then worked for 10 years at the Swedish State Railway. Since 2000 he has been employed at The Swedish Vehicle Inspection Company. First as Quality Manager and at present as Manager for a Project Office. In the project he will be part of the project management team acting as Project Manager.

Both have a Master of Science degree from the Royal Institute of Techonology in Stochholm, Sweden. The both have experience from similar work in projects like AUTOFORE, CITA working groups, etc.

Fresenius-University Institute for Economic Research and Consulting

Wolfgang H. Schulz – Prof. Dr. Schulz will take care of the cost benefit analysis in close collaboration with TRL under phase 2 “Evaluation” for this project. W Schulz holds a doctorate in economic and a long term experience with projects, especially with regard to the economic evaluation and assessment programs. He already participated in this capacity for other projects with CITA.

FINANCIAL PROPOSAL

5.1 Introduction

This section defines the fees for the proposed services and also the fees for the optional services described in the technical proposal, if these options are selected by the EC. All prices are quoted in Euros and are exclusive of VAT. As specified in the tender, the fixed prices for the supply of services and travel and subsistence are shown separately.

5.1.1 Staff charge rates and contribution

The daily staff rates for the project personnel identified in the case study are shown, divided by task, in the tables below.

Price component	*Unit price €*	*Man Day Allocation*	*Totals*	
Project Management				
Human resources				
Project Director (CITA)	**€ 1,000.00**	**20**	**€ 20,000.00**	
Project Manager (Bilprovningen)	**€ 850.00**	**5**	**€ 4,250.00**	
Project Administrator (CITA)	**€ 750.00**	**5**	**€ 3,750.00**	
Subtotal Task 1 (a)				**€ 28,000.00**
Other Costs				
Travel/Subsist.				
Other Costs (translation of reports)				
Subtotal Task 1 (b)				
Reimbursable expenses Task 1 (c)				
Overall total Task 1 a) + b) +c)				**€ 28,000.00**

Price component	*Unit price €*	*Man Day Allocation*	*Totals*	
Phase 1: Definition				
Human resources				
Bilprovningen staff cost	**€ 850.00**	**35**	**€ 29,750.00**	
arge tp 21 staff cost	**€ 850.00**	**28**	**€ 23,800.00**	
Applus Iteuve staff cost	**€ 850.00**	**59**	**€ 50,150.00**	
Subtotal Task 1 (a)				**€ 103,700.0**
Other Costs				
Travel/Subsist.				
Other Costs (translation of reports)				
Subtotal Task 1 (b)				
Reimbursable expenses Task 1 (c)				
Overall total Task 1 a) + b) +c)				**€ 103,700.00**

Price component	*Unit price €*	*Man Day Allocation*	*Totals*	
Phase 2: Evaluation				
Human resources				
TRL staff cost	**€ 850.00**	**110**	**€ 93,500.00**	
IERC-Fres.-Univ staff cost	**€ 750.00**	**10**	**€ 7,500.00**	
Subtotal Task 1 (a)				**€ 101,000.00**
Other Costs				
Travel/Subsist.				
Other Costs (translation of reports)				
Subtotal Task 1 (b)				
Reimbursable expenses Task 1 (c)				
Overall total Task 1 a) + b) +c)				**€ 101,000.00**

Price component	*Unit price €*	*Man Day Allocation*	*Totals*	
Phase 3: Reporting				
Human resources				
TRL staff cost	**€ 850.00**	**50**	**€ 42,500.00**	
Subtotal Task 1 (a)				**€ 42,500.00**
Other Costs				
Travel/Subsist.				
Other Costs (translation of reports)				
Subtotal Task 1 (b)				
Reimbursable expenses Task 1 (c)				
Overall total Task 1 a) + b) +c)				**€ 42,500.00**

Price component	*Unit price €*	*Man Day Allocation*	*Totals*	
Project Meetings (KO Meeting, Interim Meeting, Final Meeting)				
Human resources				
CITA staff cost	**€ 750.00**	**3**	**€ 2,250.00**	
Bilprovningen staff cost	**€ 850.00**	**3**	**€ 2,550.00**	
arge tp 21 staff cost	**€ 850.00**	**3**	**€ 2,550.00**	
Applus Iteuve staff cost	**€ 850.00**	**3**	**€ 2,550.00**	
TRL staff cost	**€ 850.00**	**3**	**€ 2,550.00**	
IERC-Fres.-Univ staff cost	**€ 750.00**	**3**	**€ 2,250.00**	
Subtotal Task 1 (a)				**€ 14,700.00**
Other Costs				
CITA travel/subsist	**€ 50.00**	**3**	**€ 150.00**	
Bilprovningen travel/subsist	**€ 590.00**	**3**	**€ 1,770.00**	
arge tp 21 travel/subsist	**€ 590.00**	**3**	**€ 1,770.00**	
Applus Iteuve travel/subsist	**€ 590.00**	**3**	**€ 1,770.00**	
TRL travel/subsist	**€ 590.00**	**3**	**€ 1,770.00**	
IERC-Fres.-Univ travel/subsist	**€ 590.00**	**3**	**€ 1,770.00**	
Other Costs (translation of reports)				
Subtotal Task 1 (b)				**€ 9,000.00**
Reimbursable expenses Task 1 (c)				
Overall total Task 1 a) + b) +c)				**€ 23,700.00**

The allocation of staff resources associated with each separate element of the project are detailed below.

Company	Man Days (excluding meetings)	Total Price
CITA	25	€23,750
Bilprovningen	40	€34,000
arge tp 21	28	€23,800
Applus Iteuve	59	€50,150
TRL	160	€136,000
IERC-Fres.-Univ	10	€7,500
Total	**323**	**€275,200**

5.1.2 Service supply charges

Based on this allocation of staff resources and the associated daily charges, the total service supply fees, excluding meetings with the EC, are:

Description	Charges (Euro)
Staff	**€275,200**
Other costs	**€1000***
Total	**€276,200**

*: €1000 “other cost” represents the bank guarantee

5.1.3 Travel and subsistence expenses (for meetings with the EC)

This includes three meetings in Brussels for 1 person from each consortium partner.

Company	Man Days (for meetings)	Staff cost for meetings	Travel & Subsistence	Total Price for meetings
CITA	3	€2,250	€150	€2,400
Bilprovningen	3	€2,550	€1,770	€4,320
arge tp 21	3	€2,550	€1,770	€4,320
Applus Iteuve	3	€2,550	€1,770	€4,320
TRL	3	€2,550	€1,770	€4,320
IERC-Fres.-Univ	3	€2,250	€1,770	€4,020
Total	18	€14,700	€9,000	€23,700

5.1.4 Overall costs

PRICE OF STUDY	€ 299,900.00

ANNEX

THIS ANNEX COMPRISES OF THE FOLLOWING DOCUMENTS THAT ARE REFERRED TO IN THE BODY OF THE DOCUMENT.

A) Leading organisation - CITA

- A Legal Entity Form.
- A Financial Identification Form.
- Exclusion and selection declaration by the tenderer
- Copies of the Articles of Incorporation identifying authorised representatives of the organisation and the registration number.
- A copy of the signatory power delegated to the CITA Executive Director
- A copy of the CITA president authorizing Mr Wim Labro to sign necessary documents for this tender
- Certificate of Registration for Value Added Tax.
- A copy of CITA's audited annual accounts for 2004, 2005 & 2006.

B) Organisations participating for at least 20% - TRL

- A copy of the Legal Entity Form.
- A Bank Identification Form.
- Exclusion and selection declaration by the tenderer
- Information about TRL (Customer Care Policy, Environmental Policy, Equal Opportunity and Diversity Policy, Health & Safety and Quality Policy)
- A certified copy of the Instrument of Incorporation, which includes the Certification of Incorporation of a Private Limited Company and Certificate of Incorporation on Change of Name.
- Certificate of Registration for Value Added Tax.
- A copy of the confirmation of Professional-risk Indemnity Insurance
- The Investors in People certificate for TRL Limited
- The Certificate of approval relevant to the BS EN ISO 9001: 2000 standards
- UKAS Accreditation Certificate
- Five Star Health and safety Management System Audit Certificate
- A copy of the UK Highways Agency Contractor Approval Scheme certificate that was introduced in 2005.

- Environment Agency Schedule
- A list of the Board of Directors of TRL Limited, are published in TRL's Report and Accounts.
- A complete copy of TRL's audited annual accounts for 2007, 2006 & 2005.
- A list of customers and services provide by the Vehicle Engineering Department

C- Organisations participating for less then 20%

Applus Iteuve technology

- A Legal Entity Form – a copy is included and the original can be made available within one week
- A Financial Identification Form – a copy is included and the original can be made available within one week
- Exclusion and selection declaration by the tenderer – a copy is included and the original can be made available within one week

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- A Legal Entity Form – a copy is included and the original can be made available within one week
- A Financial Identification Form – a copy is included and the original can be made available within one week
- Exclusion and selection declaration by the tenderer – a copy is included and the original can be made available within one week

Bilprovningen

- A Legal Entity Form – a copy is included and the original can be made available within one week
- A Financial Identification Form – a copy is included and the original can be made available within one week
- Exclusion and selection declaration by the tenderer – a copy is included and the original can be made available within one week

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- A Legal Entity Form – a copy is included and the original can be made available within one week
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- Exclusion and selection declaration by the tenderer – a copy is included and the original can be made available within one week