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2

ROADWORTHINESS PACKAGE

COMMISSION STAFF WORKING DOCUMENT
Accompanying the document

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on periodic roadworthiness tests for motor vehicles and their trailers and repealing Directive 2009/40/EC
and
REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the technical roadside inspections of the roadworthiness of commercial vehicles circulating in the Union and repealing Directive 2000/30/EC
and
DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Council Directive 1999/37/EC on the registration documents for vehicles

IMPACT ASSESSMENT

{COM(2012) 380 final}_{SWD(2012) 207 final}

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IMPACT ASSESSMENT

Final Report of Contributions to Impact Assessment of Policy Options to Improve the EU Systems of PTI and of Roadside Vehicle Testing

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02 February 2011

IMPACT ASSESSMENT

EXECUTIVE SUMMARY

1 This report presents the conclusions of a project carried out by Europe Economics, advised on certain issues by DEKRA and CENTIQ, to assist DG MOVE in preparing an impact assessment of policy options to improve the EU systems of periodic technical inspection of vehicles (PTI) and of roadside testing. The conclusions drawn are the sole responsibility of Europe Economics.

1.1.1. Context

2 The EU is committed to improving the level of safety of road transport, and sees the system of vehicle testing as playing an important part in achieving this.

3 EU legislation in this field has recently been revised, and reflects a policy of increasingly detailed regulation. The legislation takes the form of Directives, binding on Member States, rather than Regulations, directly binding on individuals and businesses.

4 The economic context is such that it is even more important than in more prosperous times that no new regulations should be imposed unless there is a clear benefit to the consumer.

1.1.2. Consultations

5 An experts' workshop and a stakeholders' meeting were held in Brussels in August and September, respectively; and a public on-line consultation was conducted between 30 July and 24 September, attracting almost 10,000 replies. Half of the respondents felt that PTIs were excellent value for money, and only 5 per cent found them insufficient.

6 A number of written contributions were also received from stakeholders. These consultations provided information which is taken into account in this impact assessment.

1.1.3. Problem definition

7 Two related issues are under consideration, linked by the fact that improvements to the system of vehicle inspections might contribute to their solutions.

8 These issues are:

(a) Significant numbers of accidents still occur on the roads of EU Member States, costing lives and injury, and causing other social, economic and environmental damage.

(b) The full potential of the EU single market is not being achieved, since different Member States require different systems of testing and there is no mutual recognition of the validity of tests.

9 It is recognised that there may be trade-offs between these objectives, and that they may be seen as opportunities for improvement rather than as problems demanding immediate solution.

1.1.4. Causes of the problems

10 The causes of road accidents are primarily mistakes by drivers, but vehicle faults also contribute. A significant proportion of vehicles subjected to roadside tests in several Member States were found to have some faults.

11 The reasons why there are different system of testing in use is partly that circumstances differ and partly that expert opinions on what is the most efficient method also differ.

12 There is no underlying reason why Member States should seek different outcomes than those that would be optimal for the EU as a whole.

1.1.5. Who is affected?

13 A wide constituency of road users; businesses making vehicles, testing equipment and carrying out tests; and regulatory authorities are affected by road safety issues and may be affected by differences between Member States.

1.1.6. How would the problem be likely to evolve on unchanged policies?

14 There has been good progress in reducing the number of road accidents, and this would continue. Initiatives taken by some Member States toward bilateral mutual recognition, and recent European Court of Justice (ECJ) decisions, would help to alleviate some of the disadvantages of differences in testing systems.

15 It is not possible to forecast with confidence whether or not the EU political objective of halving the numbers of fatalities by 2020 will be achieved on present policies.

1.1.7. Does the EU have the right to act and is there evidence of EU added value?

16 The EU has recently passed legislation controlling both PTI and roadside testing, so the legal precedent for action in this area has been established.

17 PTI is not an area in which it is immediately obvious that the EU is a more efficient level of government than Member States, and we assume that consensus would be needed before significant changes are brought into effect, particularly if changes were to require any major additional costs. This is taken into account in analysis of policy options.

18 With regard to roadside testing, it is hard to see any requirement for action at EU level. The damage done by inadequate roadside tests falls on the road users in the Member

State concerned; there is hardly any implication for other parts of the EU.[1] Nor is it necessary for similar approaches to be taken in different Member States; apart from facilitating statistical comparisons, harmonisation in itself would not deliver concrete advantages.

1.1.8. Policy objectives

19 The general policy objectives are to:

(a) improve the systems of PTI and roadside testing in order to reduce the number and severity of road accidents;

(b) reduce the costs and administrative burden for people and businesses wishing to have their vehicles tested in different countries, and facilitate other improvements in the operation of the EU single market.

20 More specific objectives are to:

(a) reduce the proportion of vehicles which are not compliant;

(b) make it easier for vehicles to be tested wherever is most convenient;

(c) increase recognition of tests undertaken in other Member States;

(d) increase the scope for vehicle-testing stations to offer services to vehicles registered in other Member States;

(e) make it easier for those carrying out PTIs and roadside tests to have reliable information on the vehicle; and to

(f) support consumer protection in the second-hand vehicle market including milometer readings.

1.1.9. Policy Options

1.1.9.1. Option 1: Continuation of present policies

21 Option 1 provides the counterfactual case against which the effects of other policy options are to be compared. The case for a new policy intervention needs to be established.

[1] An exception to this would be if a Member State were to use roadside testing as a way of deterring commercial vehicles registered in another country. As far as we know, this has not been suggested. In addition, EC Directive 2000/30/EC specifically states that technical roadside inspections must be carried out without discrimination on grounds of the nationality of the driver or the country of registration or entry into service of the commercial vehicle.

1.1.9.2. Option 1a: No new legislation, but enhanced implementation and enforcement

22 There would be increased effort by the Commission to improve the standards of testing and to increase the advantages for citizens and EU businesses of the single market. This would involve increased use of some or all of the following:

(a) peer reviews and screening (European Commission (EC));

(b) exploration of optimal levels of investment in PTI and roadside testing (EC, Member States (MS));

(c) exploration of the scope for risk-based testing regimes (EC, MS);

(d) PR campaigns focusing on the actions that vehicle owners should be taking (EC, MS);

(e) enhancement of roadside inspections and testing supervision (MS);

(f) voluntary action by vehicle manufacturers (manufacturers);

(g) the Commission services could prepare to institute infractions proceedings if required (EC).

1.1.9.3. Option 2: Encourage bilateral agreements and better implementation

23 Under this option, in addition to better implementation of the present law as in Option 1a, Member States would be encouraged to seek bilateral or multilateral agreements for the mutual recognition of tests done in either country.

24 As with Option 1a, no new legislation would be needed to pursue Option 2.

1.1.9.4. Option 3: Mandatory mutual recognition throughout the EU

25 This option would introduce new legislation to require each Member State to recognise the validity of vehicle testing carried out in any other Member State. This would mean that:

(a) any vehicle could be inspected in any Member State;

(b) Member States would be obliged to recognise the certificates issued by other Member States as equivalent to theirs (with no additional requirements or conditions).

26 However, the frequency of the PTI in the Member State of registration would have to be respected.

27 There would be a need to define the information exchange standards required for mandatory mutual recognition and minimum data visibility, and perhaps to provide infrastructure to facilitate data exchange.

1.1.9.5. Option 4: Impose a mandatory standard EU-wide system for PTI and roadside testing

28 Under Option 4, in addition to requiring mutual recognition new legislation would prescribe the minimum standard of testing to be required. Thus PTI and roadside testing requirements would include details of:

(a) items to be inspected and inspection method;

(b) definition of defects and assessment of result of test;

(c) equipment to be used;

(d) skills or training of staff;

(e) vehicle classes to be inspected;

(f) frequencies of PTI;[2]

(g) the system for supervision and enforcement; and

(h) the system for information exchange.

29 Member States would be permitted to apply tests that were above the minimum standards, but could not require the same from other Member States whose certificates they would be obliged to recognise. Thus Option 4 would include mutual recognition as in Option 3, but also require more standardisation of testing methods.

30 Three different possible levels of PTI testing were outlined by DEKRA for the purposes of this impact assessment:

- Option 4a: Least rigorous
- Option 4b: Medium level
- Option 4c: High level.

1.1.10. Analysis and comparison of impacts

1.1.10.1. PTI

31 Under Option 1 the system would continue to improve, and more Member States may decide to implement bilateral agreements for mutual recognition. However, the full potential single market benefits could not be achieved, and scope for faster progress in reducing road accidents might be missed. By definition, costs and benefits of Option 1 are zero.

[2] For roadside testing, this would relate to the number of vehicles targeted for roadside tests each year.

32 Option 1a offers potentially very cost-effective improvements. Improving road safety in a cost-effective manner is supported by all concerned, and the scope for system improvements facilitated by the Commission seems substantial; at little cost. However, there is no guarantee that single market issues would be solved in this way.

33 Option 2 addresses the single market issues directly, but on a partial basis. It is likely to be inexpensive; and to reduce the scale of the single market issues while not offering a complete solution. We see no reason not to pursue Option 2 as an increment to Option 1.

34 Option 3 is more problematic at this stage, since although it would solve all single market issues it carries some risk of lower road safety standards. However, the assessment of this option suggests that it may be beneficial.

35 Option 4 would take the EU into new regulatory territory, as the present legislation does not address all of the eight "pillars" by which an ideal PTI system might be defined. Research suggests that there is a case for increasing some of these standards, but in current economic circumstances it would be important to be quite sure that the additional costs would be justified for lower-income Member States in particular. We have found no adequate research into the costs and benefits of most of the "pillars" of an ideal testing system.

36 The options form a natural progression, in the sense that by pursuing Options 1a and 2 more information would become available, that might inform a decision on Options 3 (mutual recognition) and possibly ultimately of 4 (imposition of more detailed technical standards at EU level).

1.1.10.2. Roadside testing

37 It is not necessary for the EU to specify details of roadside testing systems, since these can safely be left for decision by Member States.

1.1.10.3. Data

38 Under any option, it would be advantageous to facilitate exchange of data between Member States (although not all of those replying to the on-line consultation thought that this should be done).

1.1.11. Annex: Data exchange system

39 The study specifically requested that the current and potential use of data be reviewed, whilst the impact of setting up both national and international databases and the interchange and sharing potential of the data stored be investigated. The highlighted areas of interest were: registration and roadworthiness testing-systems and type-approval and chain of custody (COC) documentation systems. Most focus was placed on the roadworthiness testing-systems as these were seen as more relevant to the overall study.

40 Responses from the Member States were limited, yet the evidence from the responses received was that roadworthiness testing results are being stored within national databases - yet the type, method and level of information held varies from state to state.

41 Many Member States are also introducing COC document stores at the national level and are considering type-approval registration systems. The best design for such a system is open to debate. The value of moving to an international system (as opposed to a national system of data-exchange) needs to be challenged as the majority of vehicles - and therefore use for type approval and COC documentation - remain in the country of first registration. There is also the variance of vehicle models across Member States to consider. For those limited occasions where access to out-of-country COC and type-approval information is required the use of a data-exchange system is expected to be more effective (the costs of setting up such a system and also data-exchange system costs are covered from Appendix A4.62 onwards).

42 The study looked at the usage of data by various stakeholders to confirm the most effective manner of data exchange, and whether the focus on COC and type-approval systems is correct. However, input from stakeholders and Member States was limited and showed that whilst the idea of data sharing is sound there is little quantitative evidence supporting its use, neither are there expectations for data volumes or timeframes for data availability to meet user demand.

43 Finally this study shows that a differentiation between strategic planning and operational support systems needs to be made in order to provide a cost-effective design. A full explanation of these systems is in Appendix 4: .

1 INTRODUCTION

1.2 This is the final report of Europe Economics' input to the impact assessment which DG MOVE is to prepare, to consider policy options to improve the working of systems of periodic testing of vehicles and of roadside tests in the EU.

1.3 An impact assessment does not pre-judge the final decision to be taken by the European Commission.

1.2. Political context

1.2.1.1. Road safety

1.4 The Commission has recently adopted a major policy orientation towards transport policy and road safety in particular.[3] This states:

> In view of achieving the objective of creating a common road safety area, the Commission proposes to continue with the target of **halving the overall number of road deaths in the European Union by 2020** starting from 2010. Such a common target represents a significant increase of the level of ambition compared to the unmet target of the current RSAP [Road Safety Action Programme], considering the progress already achieved by several Member States during the past decade, which will give a clear signal of Europe's commitment towards road safety.

1.5 The Commission has adopted a Communication on better use of communications technology. A key action to promote interoperability between public administrations will be the Commission's adoption of an ambitious European Interoperability Strategy and the European Interoperability Framework to be drawn up under the ISA programme (Interoperability Solutions for European Public Administrations).

1.2.1.2. Single Market

1.6 At the end of 2009, Former Commissioner Monti was invited to write a report encouraging a renewed political determination around the concepts of the EU's single market and providing a fresh impetus for policies to achieve it. It is hoped that his report will help to re-launch the Single Market as a key strategic objective of Europe.

1.7 Continued development of the EU single market has indeed always been one of the Commission's most important long-term goals.

[3] Communication from the Commission (2010) "Towards a European road safety area: policy orientations on road safety 2011-2020" COM(2010) 389

1.3. Economic context

1.8 The economic context in which DG MOVE is formulating its policies is one in which many or even all of the EU Member State Governments are seeking substantial reductions in public expenditure, while also seeking to avoid any unnecessary burdens of cost on businesses and on the personal sector. This situation is likely to continue for a long time, and to require a significant reduction in the role of the state in many parts of the economy. It is even more important than in more prosperous times that any new regulations should bring benefits that clearly outweigh any additional costs they would impose.

1.4. Legal framework

1.9 Before outlining the policy options to be considered, we first summarise the present legal framework and describe the aspects of Periodic Technical Inspections (PTI) and roadside testing to which the policy options will relate.

1.10 The current legislation on roadworthiness and on roadside testing is laid out in the following Directives:

(a) Directive 2000/30/EC – Roadside technical checks;

(b) Directive 2009/40/EC – Roadworthiness directive;

(c) Directive 2010/47/EU – amending Directive 2000/30/EC;

(d) Directive 2010/48/EU – amending Directive 2009/40/EC.

1.11 In addition, the Commission has issued two recommendations:

(a) Recommendation 2010/378/EU – Assessment of defects during roadworthiness testing;

(b) Recommendation 2010/379/EU – Risk assessment of deficiencies detected during technical roadside inspections (of commercial vehicles).

1.1.12. Directive 2000/30/EC (Roadside checks)

1.12 Directive 2000/30/EC was adopted in June 2000. It required all Member States to introduce technical roadside inspections[4] designed to improve road safety and the environment by ensuring that vehicles comply with certain technical conditions.

[4] Defined as: an inspection of a technical nature, not announced by the authorities and therefore unexpected, of a commercial vehicle circulating within the territory of a Member State carried out on the public highway by the authorities, or under their supervision.

1.13 These roadside inspections were required to comprise at least a visual assessment of the maintenance condition of the commercial vehicle (whilst stationary) or else a check on a recent document attesting to the vehicle's technical roadworthiness. The inspection may also include a check for irregularities in one or more of the vehicle parts.

1.14 In addition to this, it was recommended that the inspection should include an examination of the braking systems and exhaust emissions of the vehicles. Specific conditions concerning the required testing process for brakes and exhaust emissions are laid out in the Directive.

1.15 The Directive also includes a provision requiring each Member State to collect data, communicated to the Commission every two years, on the number of commercial vehicles checked, classified by category and country of registration, and the items checked and defects noted.

1.1.13. Directive 2009/40/EC (Periodic inspections of vehicles)

1.16 Directive 2009/40/EC was adopted in May 2009, recasting previous legislation (96/96/EC). It:

(a) requires that vehicles registered in each Member State undergo periodic roadworthiness tests;

(b) defines in detailed Annexes the minimum categories of vehicles to be tested, how frequently the tests must take place (e.g. annually for lorries; once every two years for cars after four years in service) and the items to be tested;

(c) requires that proof of having passed a test be available;

(d) allows some exemptions (e.g. classic cars; military vehicles);

(e) permits Member States the freedom to implement a more stringent roadworthiness periodic testing regime than detailed in the Directive;

(f) requires or allows the Commission to adopt further Directives to lay down more specific rules regarding the minimum standards to be used in tests.

1.1.14. Directive 2010/47/EU (Roadside checks)

1.17 This new Directive amends the technical annexes of Directive 2000/30/EC, aiming to improve technical roadside inspections in the EU by adapting standards and methods in accordance with technological progress. It re-affirms the importance of commercial vehicle maintenance and inspection to ensure road safety, environmental protection and fair competition when circulating within the EU.

1.18 The requirements for roadside inspections are focused primarily on brakes and emissions. No selection criteria are given for vehicles or targets for numbers of vehicles to be tested.

1.19 To enable correlations to be drawn between test results, defects and the specific characteristics of each vehicle inspected, a more detailed standardised inspection report is required by this new legislation.

1.20 The inspection must also cover identification of the vehicle in order to ensure that the correct inspections and standards are applied, to enable the results of the inspection to be recorded and to assist in the enforcement of other legal requirements.

1.1.15. Directive 2010/48/EU (Periodic inspections of vehicles)

1.21 Directive 2010/48/EU amends Directive 2009/40/EC and seeks to achieve further harmonisation of road-worthiness testing by introducing specified testing methods for each of the test items.

1.22 To facilitate further harmonisation and to help to achieve greater consistency of standards, a non-exhaustive list of the main reasons for failure (as already included for braking systems) was added for all test items.

1.23 Specific requirements for particular vehicle categories were added to move towards having roadworthiness tests cover all items relevant to the specific design, construction and equipment of the tested vehicle.

1.24 Member States have extended the periodic test requirement pursuant to Article 5(e) of Directive 2009/40/EC to other categories of vehicles. For the purpose of further harmonised testing, this amendment also outlined testing methods and standards for these categories of vehicles.

1.25 In addition to the items related to safety, security and environmental protection, the requirements for the test cover identification of the vehicle in order to ensure that the correct tests and standards are applied, to enable the results of the test to be recorded and to enable enforcement of other legal requirements.

1.26 The Directive requires that in order to facilitate the functioning of the internal market, and to improve methods of roadworthiness testing, the results of a test should be set out in a roadworthiness certificate covering certain core elements.

1.1.16. Recommendation 2010/379/EU (Roadside checks)

1.27 Commission Recommendation of 5 July 2010 deals with certain issues, regarding the risk assessment of deficiencies detected during technical roadside inspections (of commercial vehicles) in accordance with Directive 2000/30/EC.

1.28 The Recommendation provides a guideline on standards and testing methods for the assessment of deficiencies listed in Annex II of Directive 2000/30/EC for inspectors conducting technical roadside inspections, in order to achieve a more harmonised roadside testing system and to avoid unequal treatment at technical roadside inspections.

1.1.17. Recommendation 2010/378/EU (Periodic inspections of vehicles)

1.29 Commission Recommendation of 5 July 2010 addresses certain issues regarding the assessment of defects during roadworthiness testing in accordance with Directive 2009/40/EC.

1.30 The Recommendation provides a guideline on standards and testing methods referred to in 2009/40/EC for inspectors conducting vehicle tests in order to ensure a harmonised assessment of the failures listed in Annex II of the Directive. The Recommendation is seen as a step towards a uniform assessment of the deficiencies identified during roadworthiness testing within the EU.

1.31 Three categories of failure are introduced, to reflect the seriousness of the defect, with the consequences for the use of the vehicle in that condition given as shown in the following table.

Table Error! No text of specified style in document.**.1: Categorisation of failures found during periodic testing of vehicles**

Type of defect	Definition	Action
Minor	Technical defects that have no significant effect on the safety of the vehicle and other minor non-compliances.	The vehicle does not necessarily have to be re-examined as it can reasonably be expected that the detected defects will be rectified without delay.
Major	Defects that may prejudice the safety of the vehicle or put other road users at risk and other more significant non-compliances.	Further use of the vehicle on the road without repair of the detected defects is subject to conditions. The competent authorities in the Member States must adopt a procedure for setting the conditions under which the vehicle may be used before passing another roadworthiness test.
Dangerous	Defects that constitute a direct and immediate risk to road safety.	The vehicle should not be used on the road under any circumstances.

Note: A vehicle having defects falling into more than one defect group is classified according to the most serious defect. A vehicle showing several defects of the same group can be classified in the next more serious group if their combined effect makes the vehicle more dangerous.

1.5. General comment on legal framework

1.32 The EU legislation governing both roadside tests and periodic testing of vehicles is very recent, and represents increasingly detailed regulation. The legislation takes the form of Directives, binding on Member States, rather than Regulations, directly binding on individuals and businesses.

1.33 In some Member States, further law makes it an offence for an individual or business to put a vehicle onto the roads in an unsafe condition; and an offender would be liable both to punishment and to find that his vehicle's insurance policy was invalid.

1.34 Regarding commercial vehicle operations, in order to be engaged in the occupation of road transport operator Regulation EC No 1071/2009[5] requires that the operator be standing in good repute. A condition of maintaining good repute is that (Chapter II, Article 6:1):

> (b) the transport manager or the transport undertaking have not in one or more Member States been convicted of a serious criminal offence or incurred a penalty for a serious infringement of Community rules related in particular to:
>
> […]

[5] Regulation (EC) No 1071/2009 of the European Parliament and of the Council of 21 October 2009; establishing common rules concerning the conditions to be complied with to pursue the occupation of road transport operator and repealing Council Directive 96/26/EC

(iv) the roadworthiness of commercial vehicles, including the compulsory technical inspection of motor vehicles;

1.35 If a transport manager comes to lose their good repute, their authorisation to engage in the occupation of road transport operator is suspended or withdrawn.

2 PROCEDURE

1.36 Research to formulate this impact assessment was carried out by Europe Economics with the support of DEKRA and CENTIQ. Europe Economics is responsible for the main analysis and conclusions drawn, which do not commit either DEKRA or CENTIQ. Where evidence or judgements are provided by the sub-contractors this is made clear in the text.

1.37 An experts' workshop was held in Brussels on 31 August 2010, attended by 32 experts. Participants are listed in Appendix 1: , with a note of the discussion.

1.38 A stakeholders' meeting was held in Brussels on 8 September 2010, attended by 30 stakeholders. Participants are listed in Appendix 2: , again with a note of the discussion.

1.39 A public on-line consultation was conducted between 30 July and 24 September 2010, attracting 9,653 replies. A copy of the questionnaire and of the tabulated main results is in Appendix 3.

1.40 In addition to the questionnaire responses, a number of written contributions were also received from stakeholders. These were submitted as attachments to on-line questionnaire responses or sent by email to DG MOVE.

1.41 These consultations provided useful information which is taken into account in this IA. The consultation processes are in line with EC recommended practice (e.g. for the period during which the on-line questionnaire was open).

3 PROBLEM DEFINITION

1.6. What is the problem that may require action?

1.42 It is normally regarded as good practice in policy formation to clearly define a single problem, and then to analyse which options might be best to help to solve it. However, in this case two related issues are under consideration, linked by the fact that improvements to the system of vehicle inspections might contribute to their solutions.

1.43 These issues are:

(a) Large numbers of accidents still occur on roads of EU Member States, costing lives and injury, and causing other social, economic and environmental damage. This remains the case despite significant improvements in the design and standards of vehicles and vehicle testing and in road management that have contributed to improvements in road safety.

(b) The full potential of the EU single market is not being achieved, since:

- individuals wishing to use the right to move and reside freely within the EU[6] may face inconvenience and costs arising from differences in the systems of vehicle registration and PTI testing;
- transport firms wishing to use the right to freedom of trade within the EU may face inconvenience and costs arising from differences in the systems of vehicle registration and PTI testing; and
- testing services are limited in the extent to which they can compete for business from other Member States.

This second issue might be regarded as an opportunity for improvement rather than as a problem demanding a solution.

1.44 It is useful to note at this point that there may be trade-offs between these objectives, so that under some scenarios progress towards mutual recognition might imply some reduction in safety. Other issues such as the desirability of reducing environmental pollution and the administrative burden on businesses and individuals are also relevant.

1.7. What are the underlying causes of the problem?

1.7.1.1. Road safety

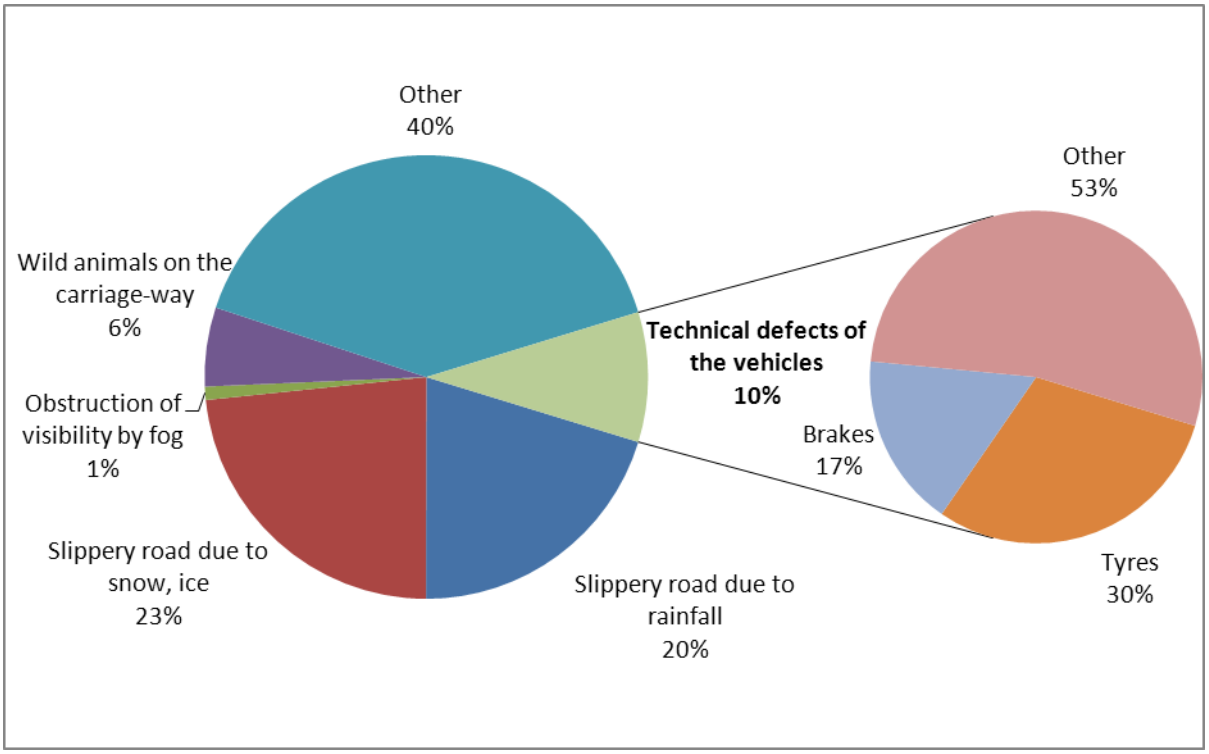
1.45 The causes of road accidents are primarily mistakes by drivers, the consequences of which are exacerbated by road conditions, bad weather and the like, but vehicle faults also contribute. For example, 1.7 per cent of accidents in Germany in 2009 were attributed to faulty brakes, and a significant proportion of vehicles subjected to roadside tests in several Member States were found to have some faults.

1.46 Studies of crashed vehicles have shown that defects contribute directly or substantially from around 3 per cent to 19 per cent of accidents, with the more robust

[6] As stipulated by Art. 4 and 5 of Directive 2004/38/EC

studies indicating at least 6 per cent.[7] Recent empirical evidence from Germany has shown that technical defects are a contributory factor for around 10 per cent of accidents as seen in the following figure.

Figure Error! No text of specified style in document..**1: General causes of accidents involving personal injury in Germany, 2009**



Source: Federal Statistics Office, Germany

1.47 Commercial vehicles cause disproportionately high levels of accident deaths and injuries whilst breakdowns of commercial vehicles are also a significant cause of traffic congestion.[8]

1.48 The age of a vehicle is a significant factor. Twice as many vehicles which are eight years or older are involved in accidents attributable to technical defects than newer vehicles. Currently the average age of the vehicle fleet in the EU is 8.5 years.[9] Analysis of results by the DEKRA Inspection Department showed that, across all car age ranges, 24.9 per cent of cars involved in a road accident were found to have

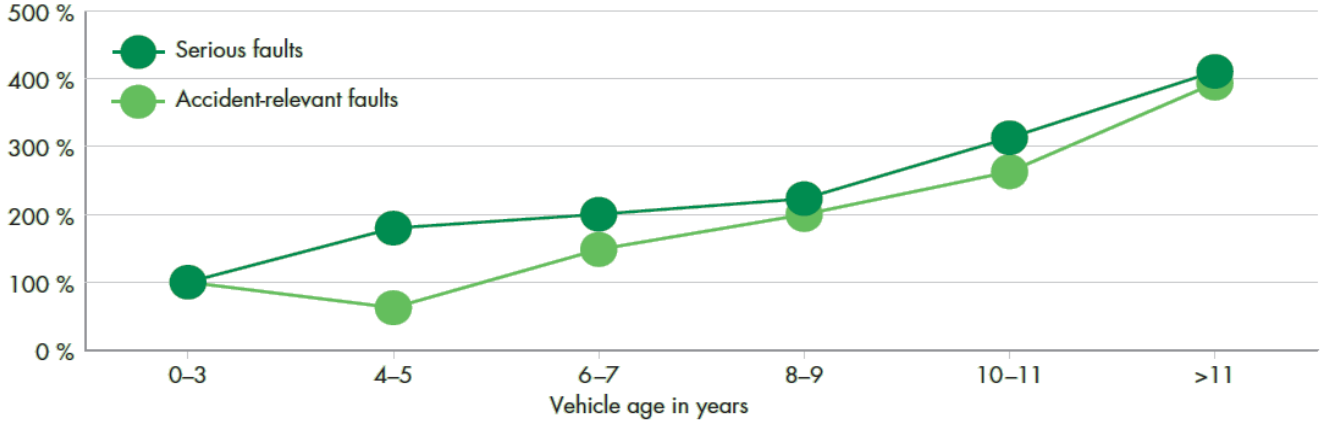
7 Rechnitzer, George, Haworth, Narelle and Kowadio, Naomi (2000) "The effect of vehicle roadworthiness on crash incidence and severity" Monash University Accident Research Centre, Report No. 164

8 CITA (2007) "AUTOFORE Study on the Future Options for Roadworthiness Enforcement in the European Union: WP700 – Roadworthiness testing evaluation"

9 Source: DG MOVE, based on "EU energy and transport in figure: Statistical Pocketbook 2010"

serious faults, whereas only 11.3 per cent of accident cars under three years old had any such faults.[10]

Figure Error! No text of specified style in document.**.2: Cars with faults discovered after road accidents, relative incidence by vehicle age in years**



Source: DEKRA, Road Safety Report 2008: Strategies for preventing accidents on Europe's roads

1.49 This chart takes the number of accidents involving vehicles aged 0-3 years as 100, and shows accident rates for older vehicles in relation to this.

1.50 Comparison of accident figures on the basis of the distances travelled shows that older vehicles are involved in accidents twice as often as newer vehicles. Older vehicles are responsible for more fatal accidents than newer vehicles.[11]

1.51 In addition, although the technical condition of a vehicle deteriorates with vehicle age in some cases less money is spent on maintenance and repairs for older vehicles, and the older the vehicle, the more often repairs are performed on a "do-it-yourself" basis or with the assistance of private acquaintances; this applies equally to accident repairs.

1.52 A comprehensive study by the Monash University Accident Research Centre (Australia) under the title "The effect of vehicle roadworthiness on crash incidence and severity" compares the results of important studies.[12] There was significant variation in the study findings regarding the role of vehicle defects in accident causation, and the effectiveness of PTI programmes in reducing defects and accidents related to vehicle age. Overall, the study concludes that it would appear that vehicle defects are a contributing factor in over six per cent of accidents. As evidence of the

10 DEKRA (2009) "Road Safety Report 2008"

11 Source: DEKRA

12 Rechnitzer, George, Haworth, Narelle and Kowadio, Naomi (2000) "The effect of vehicle roadworthiness on crash incidence and severity" Monash University Accident Research Centre, Report No. 164

effects of PTI programmes on vehicle defects and accidents in general, the prevalence of defects in the vehicle fleet was found to be lower in jurisdictions with PTIs (by up to 16 per cent). Comparisons of inspected cars and non-inspected cars in the same jurisdictions suggested lower accident rates for the former.

1.53 Studies that have compared accident rates before and after the introduction of PTIs have generally shown decreases in injury accident rates. Rompe and Seul (1985)[13] noted that inspection programmes may also influence and reduce accidents by increasing drivers' understanding of the need for regular maintenance, of safety issues and of the condition of their own car.

1.54 Moreover, failure rates in PTI tests are high. A study by the UK Government published in 2008 found that in the UK PTI test, the 'MOT', about one third of vehicles tested failed, and that this proportion had remained at about this level for some years.

1.55 The UK study mentioned above estimated that about 10 per cent of cars on roads in Great Britain at any point in time have a defect that would cause them to fail the MOT test.[14] It was concluded that if the UK were to reduce the frequency with which vehicles are tested to the EU legal requirement, the likely costs to the economy from additional accidents would exceed the benefits to vehicle owners from not needing to have the tests done. (The benefit to owners from not having to take the tests was measured as the saving of the money spent on the tests and the value of time taken.)

1.56 Other countries also report high failure rates in PTI tests.

1.57 Further evidence, if it is needed, that significant numbers of unsafe vehicles are using roads in the EU comes from roadside tests on commercial vehicles. These tests are carried out using different techniques in different countries, so that one cannot draw comparisons as to the absolute numbers of unsafe vehicles on a like-for-like basis, but for our immediate purposes this is immaterial. Almost all of the tests reported a significant number of vehicles failing the roadside tests.

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13 Rompe, K and Seul, E (1985) "Final Report Commissioned by the Directorate General for Transport, 7/G2 of the Commission for the European Communities" TÜV Rheinland, rheinland Technical Inspection Authority

14 'MOT Scheme Evidence-base' Department for Transport, UK, 2008, p25. The study explains the difficulties of estimation and the assumptions used.

Table Error! No text of specified style in document.**.2: Failure rates in roadside tests, 2007-2008**

Reporting Member State	Vehicles checked	% Non-compliant vehicles^
Austria	12,658	41.4%
Belgium	18,732	13.3%
Bulgaria	472,324	0.3%
Cyprus	919	197.3%^^
Czech Republic	52,842	n/a
Germany	2,679,907	2.3%
Denmark	265	63.0%
Estonia	2,236	19.2%
Finland	9,267	n/a
France	1,669,391	3.3%
Greece	22,360	14.2%
Hungary	351,690	6.5%
Ireland	5,204	n/a
Italy	13,577	n/a
Lithuania	n/a	n/a
Luxembourg	896	33.0%
Latvia	9,294	0.5%
Malta	3,579	55.2%
Netherlands	4,147	2.8%
Poland	1,254,706	0.6%
Portugal	558	5.0%
Romania	43,700	36.8%
Sweden	165,263	20.0%
Slovenia	3,179	3.8%
Slovakia	4,631	n/a
United Kingdom	165,927	48.9%
TOTAL	**6,967,252**	

Source: EC, Report on the technical roadside inspection of the roadworthiness of commercial vehicles

^ The percentage of non-compliant vehicles can be more than 100 per cent due to the counting of vehicle combinations "road train" and "articulated vehicles" as single vehicles where both vehicles or the combination or only one of them could be counted as a non-compliant vehicle.

^^ The figure of 197.3 per cent in Cyprus is probably based on a different method of counting checks and non-compliant vehicles.

1.58 Clearly, different countries took different approaches in deciding how many vehicles to test. The lowest number of inspected vehicles in a Member State was 265 in Denmark, followed by Portugal (558 vehicles) and (less surprisingly) Luxembourg (896 vehicles). In Germany, France and Poland large numbers of vehicles were stopped (2,679,907, 1,669,391 and 1,254,706, respectively) but a relatively small

percentage were found defective. In the UK, Sweden, Luxembourg and Austria, smaller numbers were stopped, presumably due to more stringently selecting those vehicles which looked likely to have problems and a higher percentage was therefore found defective.

1.59 Recital 10 of Directive 2000/30/EC requires that roadside inspections in each Member State utilise a targeted approach in their selection of vehicles. This is because the direct benefit to road safety of undertaking roadside inspections is related to the number of vehicles inspected which are detected as non-compliant, rather than the total volume of vehicles inspected. Targeting helps to maximise the number of non-compliant vehicles detected for a given budget, but also means that the statistics derived from results of roadside tests are not representative of the vehicle fleet in each Member State as a whole. It thereby reduces the comparability of roadside testing results between Member States, decreasing the value of these data in comparing the quality of PTIs in each country.

1.60 The share of non-compliant vehicles out of the inspected vehicles in a Member State ranged from 0.3 per cent in Bulgaria to 63 per cent in Denmark. For 8 out of the 20 Member States where compliance rates were reported, the rate of non-compliant commercial vehicles was less than 5 per cent, whereas for 7 countries the rate reported was higher than 30 per cent.

1.61 In 11 Member States more than 90 per cent of all inspected vehicles were registered in the Member State.[15] It is clear that in Cyprus or Malta very few foreign commercial vehicles can be found, but this result is perhaps surprising for countries like Poland or Denmark, where a significant number of foreign commercial vehicles are expected to be using the roads.

1.62 Differences are found in the inspection results of vehicles registered in the reporting Member State and the results of vehicles from other EU Member States. For example, in the UK, 38 per cent of locally registered vehicles were found non-compliant at roadside checks, whereas 80 per cent of vehicles registered in another Member State were found non-compliant. In contrast, Belgium found 19 per cent of vehicles locally registered to be non-compliant and a lower percentage of only 10 percent of vehicles registered elsewhere in the EU were found non-compliant.

1.63 The picture of the 2007-2008 roadside inspection (RSI) results is very similar to that of the previous results from 2003-2004. In most cases the failure rates fell between 2003 and 2007 (Denmark -9.1 per cent, Sweden -26.9 per cent, Hungary -3.9 per cent

[15] Bulgaria, Cyprus, Denmark, Ireland, Lithuania, Latvia, Malta, Poland, Portugal, Romania and Sweden.

etc.) but in some Member States the rate increased in the newer results (UK +12 per cent, Luxembourg +23 per cent).

1.64 Bearing in mind the different approaches to technical roadside inspections, the most commonly detected deficiencies in roadside tests were lamps, lighting or signalling devices (30 per cent) followed by braking system and components (21 per cent) and wheels / tyres (20 per cent). Deficiencies in other areas[16] were discovered at a much smaller rate.[17]

1.65 We can take it as a firm finding that, despite present EU and national legislation, and despite the natural wish of motorists to be safe, significant numbers of vehicles on EU roads are defective by the standards of the tests.

1.66 It is in theory possible that the standards of the tests are too high and that a 'failure' might not be an important matter (for example, hypothetically a Member State could increase the tread required on tyres to a higher level than is really needed, so that a failure to meet the standard would not be an immediately urgent matter; or there may be other minor reasons for failing the test that could reasonably have been left to the vehicle owner to deal with without a regulatory requirement to do so). However, the consensus among those we have been able to consult (admittedly, apart from the large number of individuals responding to the on-line questionnaire, these have mainly been people and organisations professionally involved in testing or in road haulage as a business) is that the tests are not too rigorous, but if anything too undemanding.

1.67 What then are the underlying reasons why so many vehicles are apparently unsafe to drive, and yet are on the roads? A fundamental point is that part of the cost of accidents falls on people other than the driver or owner, so that in the absence of regulation one would expect a sub-optimal level of safety. For this reason, regulation to require satisfactory safety standards is justified. This also explains why it is appropriate that buses and taxis should be tested more frequently than passenger cars; and why a lower rate of testing is used for motor cycles; and none for pushbikes.

1.68 Vehicles are sometimes defective as a result of faulty design or mistakes in the manufacturing process. Such errors occur occasionally, and lead to vehicle recall programmes, but this cannot fully explain the general phenomenon of unsafe vehicles. Defects can sometimes be explained instead by vehicle owners not maintaining their

[16] Exhaust system, smoke opacity, gaseous emissions, steering linkages, suspension, chassis, tachograph, speed-limiting device, evidence of fuel and/or oil spill. The low frequency of data given for detection of these deficiencies in some cases are due to not all Member States testing for faults in these systems.

[17] EC (2010) "Report from the Commission to the Council and the European Parliament on the application by the Member States of Directive 2000/30/EC of the European Parliament and of the Council of 6 June 2000 on the technical roadside inspection of the roadworthiness of commercial vehicles circulating in the community: Reporting periods 2005-2006 and 2007-2008"

vehicle properly. This is due to the usual human failings of laziness, ignorance and so on, as well as a wish or need to avoid expense where possible.

1.69 The PTI regulations and roadside inspections are intended to improve standards compared with those that motorist and fleet owners would maintain without regulation. This implies that another possible cause of avoidable road accidents is inefficient PTI or roadside inspection.

1.70 PTI is a government requirement, rather than a voluntary choice for individuals, and therefore some consumers of PTIs are likely to aim just to pass the test, as inexpensively as possible. In addition, repair shops can ignore mechanical defects in order to minimise customer hassle or to pocket more inspection fees by increasing the number of inspections performed. On the other hand, repair shops in Member States where both PTIs and subsequent repairs can be performed at the same garage might like to find more faults than there really are, to increase the amount of repair work needed. Hemenway (1989)[18] found evidence that some drivers actively seek out repair shops that perform fraudulent inspections. This has implications for the design of policy, e.g. towards methods of enforcement.

1.71 Governments will have attempted to take into account this possible misalignment of incentives (between themselves, vehicle owners and garages / workshops) in the design of their PTI systems and of their enforcement. The design of an optimal system of testing is not an easy or straightforward matter, but something on which experts may reasonably disagree; however, there appears to be no reason why the public authorities - national governments or regional administrations[19] - responsible for the design, supervision and enforcement of such regulations should not wish to do so effectively.[20]

1.72 As an example, the optimal level of technical inspections is likely to depend on the income per head in the individual Member State, as this will impact on the costs involved if an accident occurs. We see that there is currently a clear correlation between the quality of PTIs in EU Member States and the income per head, as one would expect.

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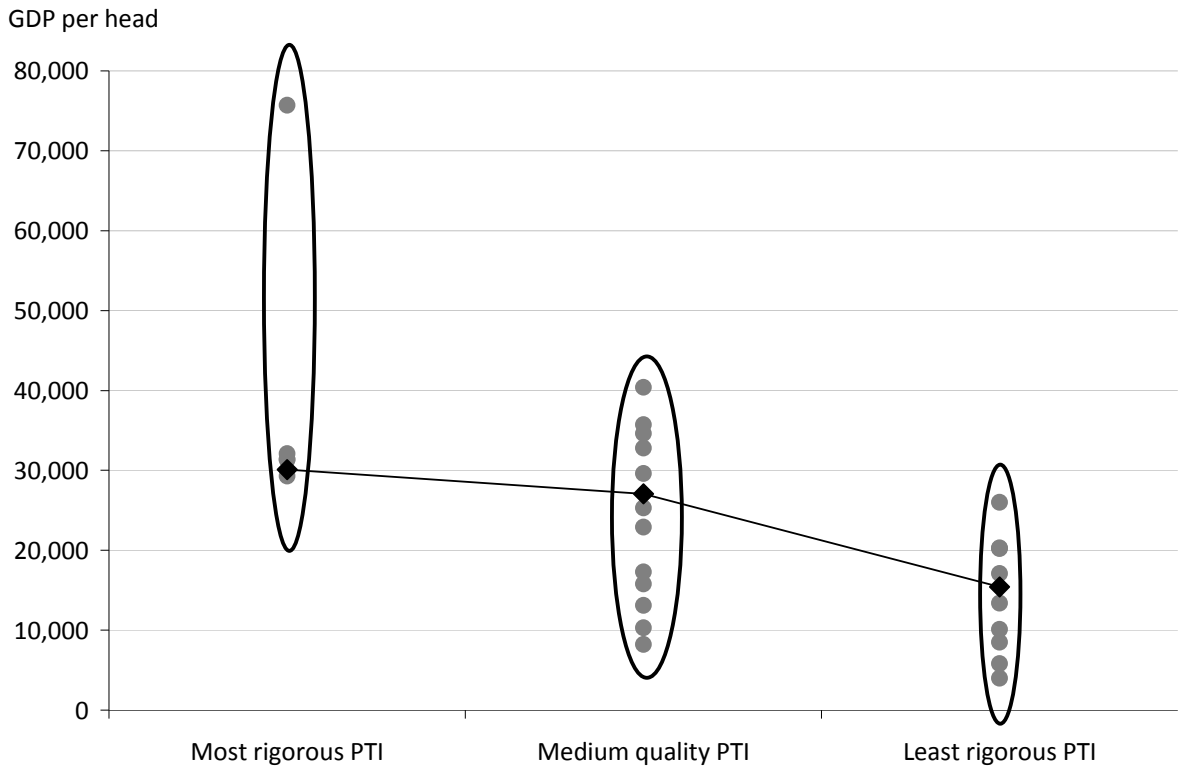
18 Hemenway, David (1989) "A failing grade for auto inspections – And motorists like it that way" *Journal of Policy Analysis and Management* 8:321-325

19 In Spain, there are differences in the systems used in different Autonomia; and in the UK, Northern Ireland designs its own system; there are probably similar examples in other countries.

20 It is in theory possible that officials employed in a government or other regulatory authority may have been bribed or "captured" by stakeholders, so that their objectives depart from those of the people under their jurisdiction. The term "captured" is used here in the sense in which it is defined in the economic / regulatory literature, of having become over-influenced by some stakeholders.

Figure Error! No text of specified style in document.**.3: Differences in income per head in Member States with differing PTI standards**



Source: Eurostat – Euro per inhabitant and population, Europe Economics categorisation of countries into PTI quality groups

Trend line shows weighted average Euro per inhabitant for each PTI quality group.

All values are for 2009 except for Bulgaria, Belgium, and the UK where 2008 values were used and Romania where 2007 values were used.

1.73 In general, the reported government expenditure on national road safety strategies varies greatly in Europe. In all cases (since no amount of expenditure could prevent all crashes) the expenditure by Member States is considerably less than the costs incurred from road crashes.

Table Error! No text of specified style in document.**.3: Expenditure on implementing national strategies on road safety versus the costs of road crashes, 2008**

	Expenditure on national strategy per person (€)	Cost of road crashes per person (€)
France	38	194
Poland	17	148
Estonia	12	113
Latvia	3	87

Source: WHO European status report on road safety

Note: These calculations are based on the gross output method. The cost components can be divided into the costs of resources consumed because of a crash (property damage costs, health care costs and administrative costs) and costs resulting from a loss of future output (absence from work, long-term disability or death).

1.7.1.2. Single Market

1.74 Turning from road safety to the Single Market issues, the causes of the costs and inconvenience for EU businesses and citizens resulting from absence of a standardised system throughout the EU are historical. The EU is gradually reducing national differences; the present situation can be described either as an improved access of MS citizens to the services of other MS compared with the previous situation, or as a continuing limitation on citizens' access to the full services of MS other than his or her own (the glass is half full or half empty).

1.75 Currently citizens are still sometimes reluctant to purchase a motor vehicle from another Member State due to the fear that this would require additional paperwork and extra costs. The transfer of motor vehicles is still a source of complaints, in particular due to burdensome type-approval registration procedures.[21]

1.76 The current registration requirements for cars are the natural corollary of the exercise of the powers of taxation by Member States in the area of motor vehicles. People with residence in a Member State need to have any vehicle they are using on the roads in that Member State registered there. When people move residency between two Member States, EU legislation requires that any vehicle must be re-registered in the new Member State after 185 days of residency there.[22] Current national legislation of Member States provides for (a maximum of) three different steps for registering a motor vehicle in the receiving Member State:

[21] EU (2007) "Commission interpretive communication on procedures for the registration of motor vehicles originating in another Member State (2007/C 68/04)" *Official Journal of the European Union*

[22] Since every individual must register his vehicle in the Member State in which he is normally resident. Article 7 of Directive 83/182/EEC (1) and Article 6 of Directive 83/183/EEC (2) set out precise rules for determining normal residence in situations where the persons concerned are respectively temporarily or permanently living and driving in a Member State other than their own (having to live more than 185 days per year in a given place) .

- the approval of the technical characteristics of the motor vehicle;
- roadworthiness testing of used vehicles; and
- the registration of the motor vehicle.

1.77 Recent work by the European Commission has helped to reduce the burden of applying for registration of a vehicle in a new Member State. For instance, EC type approval regulations[23] have established mutually recognised type approvals for most vehicles in the EU, making the approval of the technical characteristics of the motor vehicle straightforward in the majority of cases. In addition, recent ECJ judgments[24] have reduced the scope for Member States to request an additional roadworthiness test for used vehicles from another Member State before registration. However, it is thought that some barriers to the registration of used vehicles in a different Member State persist.

1.78 Temporary use of a vehicle in another Member State is allowed without paying taxes in that country. Temporary use is generally defined as less than 6 months in any 12 months in this case. The group of people most likely to wish to store a vehicle in another Member State and to be using it less than 6 months in any year are long-term tourists – e.g. those with a holiday home in a foreign Member State, who therefore intend to return to the same destination over a period of many years and may leave a car there permanently. These people may choose to keep their vehicle registered in their resident MS rather than the MS in which the vehicle is located if this means they save money in insurance premiums, or to avoid any practical difficulties involved in registering the vehicle in the holiday location.[25] In such cases, a demand is created for the mutual recognition of PTIs or PTI results, as these vehicles would most efficiently undertake their PTI in the location they are kept, rather than the country in which they are registered. Without mutual recognition of PTIs the vehicle owners are either required to drive the vehicle back to their resident country in order to undertake a PTI, or incur the costs of changing the vehicle's registration (which might, however, not be an unreasonable cost in these circumstances).

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23 Directive 2007/46/EC of the European Parliament and of the Council of 5 September 2007; establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles

24 Judgment of the court (First Chamber), 20 September 2007, Case C-297/05 Commission of the European Communities v Kingdom of the Netherlands supported by Republic of Finland; and Judgment of the Court (First Chamber) of 5 June 2008 – Commission of the European Communities v Republic of Poland, Case C-170/07.

25 For instance, in order register a vehicle in Spain an individual may have to contact a number of different authorities - incurring significant costs and potentially requiring the use of professional support.

1.79 Commercial vehicles - and particularly trailers - are more likely to experience costs from the lack of a single EU market for PTIs, due to the higher frequency at which these vehicles will find themselves away from their country of registration due to undertaking long distance haulage.[26] As noted above, there is no obvious reason why Member States should not seek the PTI and roadside-testing systems that they believe are optimal for their circumstances.[27] The current differences may therefore be attributed to different historical developments, differences in the affordability of alternative systems of testing, and different views taken by Member State regulators on the cost-effectiveness of different aspects of the tests. Whatever the reasons for the differences, in the absence of mutual recognition of PTIs some additional journeys may be required.

1.8. Who is affected and in what ways?

1.80 Those affected include:

(a) all road users;

(b) vehicle owners, private and commercial;

(c) vehicle manufacturers, distributors, and repair shops and garage equipment producers;

(d) vehicle testers;

(e) insurers;

(f) regulatory authorities, including the police;

(g) all concerned with environmental issues.

1.81 All are affected by the costs of accidents, and all might benefit to some extent from a more effective EU internal market and better use of modern communications technology.

[26] Trucks are less likely than trailers to be left on site for long periods, and so may more frequently run into the time when a new PTI is required, necessitating a journey that would not otherwise have been planned.

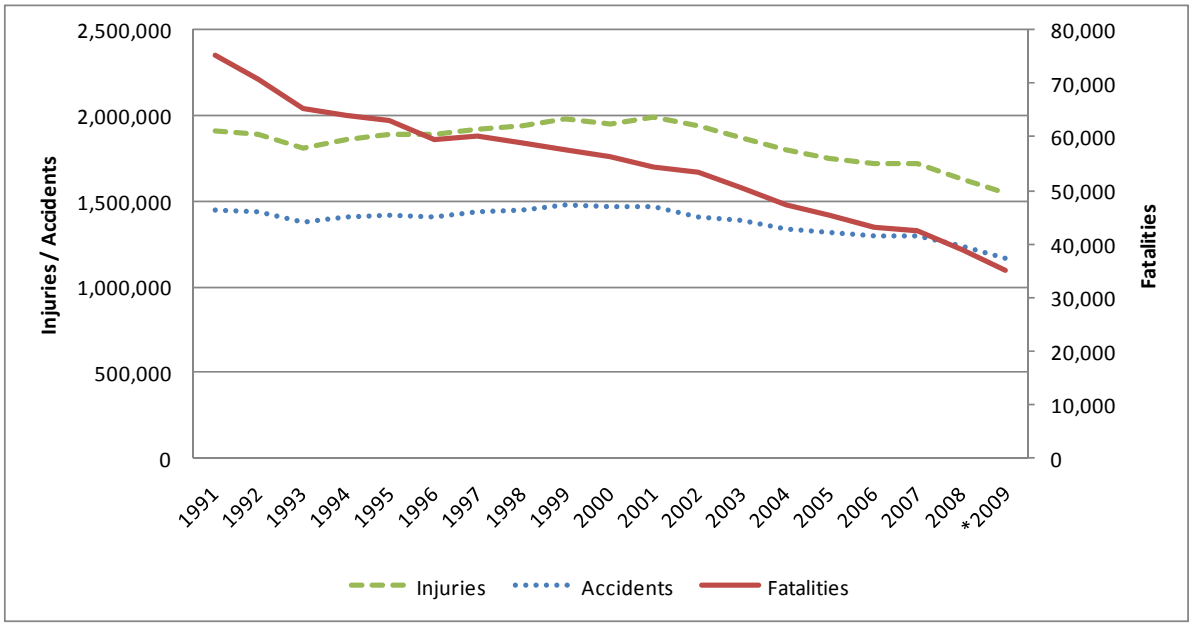
[27] For instance, their road infrastructure and conditions (fast autobahn in Germany - which has a lower fatality rate than rural German roads, winding country roads on Malta etc.), climate, social welfare and education levels of citizens, and the average age of their vehicle fleet.

1.9. How would the problem evolve if present policies are maintained?

1.1.18. Road safety

1.82 There is a significantly improving trend in road safety, due to improvements in vehicle design and other factors,[28] and there is no reason to doubt that a similar trend would continue. There would, however, still be significant numbers of accidents, and the potential for more efficient operation of the EU single market would continue to be under-exploited.

Figure Error! No text of specified style in document.**.4: EU road accident fatalities, 1991-2009**



*Source: CARE (EU road accidents database) and national data. *2009 figure is a provisional estimate.*

1.83 We see no reason to expect a significant divergence from this trend if present policies (which include continued work by the Commission through comitology to improve the system of testing, and other initiatives foreshadowed in the Commission's Policy Orientation) continue. Substantial action has been undertaken in the last ten years under the EU's road safety action programme 2001-2010; and many new measures are currently envisaged in the EC white paper for the period up to 2020, including improving driver education and increasing enforcement of road rules as well as working towards environmental targets. Vehicle designs are being continually improved, and on-board diagnostic equipment is becoming cheaper and more widely used. All of these effects will be part of the forecast on unchanged policies for PTI and roadside testing.

[28] Such as speed limitation systems and enforcement, and road design

1.84 An example of an initiative related to road safety that is already proposed for the period 2010-2020 is the introduction of mandatory fitting of tyre-pressure monitoring systems. The fitting of automatic warning systems for tyre pressure in new cars has been mandatory in the United States since 2008. While the fitment of tyre pressure monitoring systems is currently included as a recommendation in EU legislation, this is expected to change starting from 2012, when new EU Regulation requiring the mandatory fitting of tyre pressure monitoring systems in all new models is planned to be introduced, followed by the mandatory fitting of this equipment in all new vehicles by 2014.[29]

1.85 Keeping tyres at the correct pressure has positive impacts on the environment, fuel consumption and tyre wear, in addition to the safety benefits of reducing road accidents through giving vehicles a better grip on the road. In the US, the introduction of mandatory automatic tyre-pressure warning systems was calculated to be expected to cause a reduction in road deaths of 0.8 per cent. Based on the number of road deaths in 2008 in the EU of 38,875,[30] a 0.8 per cent reduction in deaths would amount to 311 fewer fatalities.

1.86 One estimate of the future evolution of road fatalities and injuries in the period 2011-2010 has been constructed as part of the European Road Safety Action Program (ERSAP).[31] A log linear future trend was chosen (meaning a constant percentage change each year) on the grounds that the higher the level of safety on the roads the more difficult to further decrease the number of injuries and fatalities. Two scenarios were calculated based on different assumptions about current and future road safety measures. The optimistic scenario assumes that both current safety measures, introduced in 1995-2008, and new safety measures, introduced in 2008-2020, will have a positive impact on road safety in the period 2010-2020. The pessimistic scenario assumes that the effect of current measures fades away and so these measures will not have any further impact on road safety in 2010-2020.

Table Error! No text of specified style in document.**.4: Log linear extrapolation of recent trends in road safety**

	ERSAP Pessimistic scenario		ERSAP Optimistic scenario	
	2020	**% reduction from estimated 2010 level**	**2020**	**% reduction from estimated 2010 level**
Fatalities	26,948	-23%	22,048	-37%
Injuries	1,459,205	-9%	1,395,064	-13%

Source: Summary of the ERSAP scenario as provided by DG MOVE

29 Source: http://ec.europa.eu/enterprise/e_i/news/article_7009_en.htm
30 Source: CARE (EU road accidents database)
31 Source: Summary of the ERSAP scenario as provided by DG MOVE

1.87 This suggests that, by 2020, if the log linear trend in fatalities is assumed, total EU road deaths will have dropped by 23 to 37 per cent, down to between 22,000 and 27,000 a year. Injuries will also have seen a decline, although on a smaller scale: down by around 10 per cent.

1.88 However, a log linear trend may not be the most appropriate model in this instance. A number of Member States in the EU still have low levels of road safety and therefore there are potentially significant opportunities for fatalities to still decrease in certain regions. In addition, analysis of the historic data on road fatalities, as available for the years 1991-2008[32] shows that a linear trend fits the data better than a log linear trend.[33]

1.89 Therefore, for robustness, we also estimated the likely evolution of road accidents under the assumption of a linear trend. We used a simple linear regression, without adjustments for the projected increase in mobility or providing for the possibility that the effects of RSAP (2003-2010) are not durable, as taken into account in the ERSAP scenarios. Pessimistic, middle and optimistic estimates of the predicted future accident levels under a linear trend were constructed using the best estimate and the 95 per cent confidence interval for the gradient of the slope.

Table Error! No text of specified style in document.**.5: Linear extrapolation of recent trends in road safety**

	Pessimistic scenario		**Middle scenario**		**Optimistic scenario**	
	2020	**% reduction from estimated 2010 level**	**2020**	**% reduction from estimated 2010 level**	**2020**	**% reduction from estimated 2010 level**
Fatalities	18,641	-47%	16,628	-53%	14,615	-58%
Injuries	1,597,368	-2%	1,501,130	-7%	1,404,891	-12%
Accidents	1,186,843	-3%	1,126,724	-7%	1,066,605	-11%

1.90 If this linear trend in fatalities is assumed we would therefore expect to see road deaths fall by around 1,900 deaths a year, road injuries by 11,000 a year, and road accidents by 9,000 a year. This suggests that, by 2020, total EU road deaths will have dropped by 47 to 58 per cent, down to between 15,000 and 19,000 a year. The decline in injuries and accidents would be on a smaller scale, each down by around 7 per cent.

[32] Source: CARE (EU road accidents database) and national data

[33] The log linear trend is found to have an adjusted R-squared fit value of 0.9652, which is less than the corresponding value for the linear trend of 0.9699.

1.91 The choice of forecast used has a large impact on the conclusion to be made regarding whether or not the Commission will need to enact additional legislation in order to meet their aim of halving the overall number of road deaths in the EU by 2020, starting from 2010. If the log linear model of the trend is to be believed then the conclusion is that the Commission's target will not be easily met, even under the optimistic ERSAP scenario. Conversely, if the linear model is believed to more accurately reflect the likely future trend in fatal accidents then - if this trend rate of decline of fatal accidents is able to be achieved purely through the continuation of present policies - the Commission's aim would be met without the requirement for any additional legislation or other new policy initiatives.

1.92 Taking the two forecasts above into consideration, we can provide a cautious estimate of the likely scale of the reduction in road fatalities between 2010 and 2020 as lying between 23 and 58 per cent.

1.93 Recent incentives by different Member States to encourage citizens to purchase new cars and scrap old cars will have temporarily accelerated the improvement in the average safety of the EU vehicle fleet, so a steep reduction in the number of accidents may be witnessed early on in the period 2010-2020. This expected reduction is not reflected in either of the forecasts as given above.

1.94 The fact that the forecast shows that the target of halving the overall number of road deaths may be met without any new legislation does not of course affect the need for the Commission to consider whether new legislation would be beneficial; it simply affects the size of the problem to be addressed, which is not meeting a particular target but of improving the welfare of citizens. It should be added that the aim of "halving" was probably chosen for political effect rather than as a result of any close calculation of what would be feasible, or optimal. Furthermore, the Commission should also consider that under the extrapolations as presented in Table 3.3 and Table 3.4 above, there would still be between 900 and 1,600 deaths and around 84,000 to 96,000 injuries in 2020 to which a technical fault in the vehicle had contributed.[34]

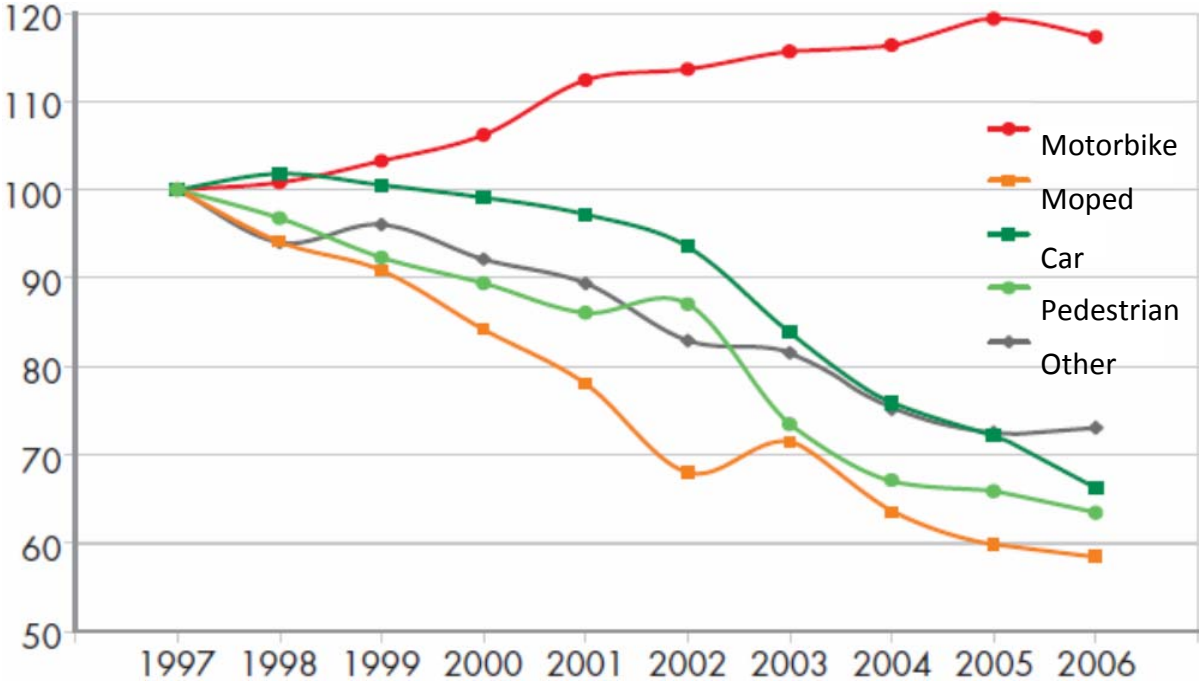
1.95 Also, fatal accidents only consist of a small percentage of the total number of accidents. Based on the estimates above the number of accidents with injuries will only see a very small reduction in the next ten years.[35] In addition, although there has

[34] Estimated using a figure of six per cent for the proportion of accidents where defects are a contributor.

[35] The Commission proposes to add an "injuries reduction target" for the European road safety policy orientations up to 2020, as soon as sufficient progress has been made in creating a common definition of injuries. If this target is decided at a rate of greater than 10 per cent reduction in numbers of injuries by 2020, further action on the part of the Commission or of Member States may be necessary to achieve these aims.

been an overall decline in the number of road fatalities, the same trend has not been seen for all vehicle categories, in particular for motorbikes.

Figure Error! No text of specified style in document..**5: Change in number of road fatalities by vehicle type (1997=100)**



Source: DEKRA (2010) "Verkehrssicherheitsreport Motorrad 2010: Strategien zur Unfallvermeidung auf den Strassen Europas"

1.1.19. Single market issues

1.96 As EU integration proceeds, more people may wish to move from one country to another; or to have holiday homes in other Member States, leaving their cars there; and it may also be assumed that road transport undertakings will increasingly be operated on a pan-EU basis.

1.97 Several Member States or involved organisations (with permission from the Member State government but with no direct involvement of the relevant Member State department) have reached agreements with others for the bilateral recognition of their PTI results. We would expect a larger number of testing stations to start implementing similar agreements in the future, for pairings where this is cost-effective. These agreements would alleviate some of the single market issues outlined above.

1.98 Recent decisions by the ECJ (in 2007 and 2008) will also help to alleviate the single market problems identified above and reinforce the move towards a single market.

The 2007 decision[36] held that the Netherlands had failed to fulfil its obligations under Articles 28 EC (free movement of goods) and 30 EC (proof that the national provision is proportionate to the objective pursued) by requiring vehicles which are more than three years old and which have previously been registered in other Member States to undergo testing as to their general condition prior to registration in the Netherlands. The ECJ noted that, although road safety and the protection of the environment do constitute overriding reasons in the public interest capable of justifying a hindrance to the free movement of goods, the requirement for cars to undergo testing before registration was unnecessary as a similar result could be achieved by less restrictive measures.[37] Similarly, the 2008 decision[38] held that Poland had failed to fulfil its obligations under Article 28 EC (free movement of goods) by subjecting imported second-hand vehicles registered in other Member States to a roadworthiness test prior to their registration in Poland, whereas domestic vehicles with the same characteristics were not subject to such a requirement.

1.10. Does the EU have the right to act and is there evidence of EU added value?

1.99 Here we need to consider any fundamental rights issues, the Treaty base, and the 'necessity test' (subsidiarity).

1.100 We see no fundamental rights issues in this area.

1.101 The EU has recently passed legislation controlling both PTI and roadside testing, so the legal precedent for action in this area has been established.

1.102 The Treaty requires the Commission to seek the right balance between legislation at EU and at national level (subsidiarity).

1.103 PTI is not an area in which it is immediately obvious that the EU is a more efficient level of government than Member States, and we assume that a significant measure of consensus would be needed before significant changes are brought into effect, particularly if changes were to require any major additional costs. This is taken into account in analysis of policy options. This approach would also help to ensure that action is only taken where "EU value added" is evident.

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36 Judgment of the court (First Chamber), 20 September 2007, Case C-297/05 Commission of the European Communities v Kingdom of the Netherlands supported by Republic of Finland.

37 For instance, by recognition of the proof issued in another Member State showing that a vehicle registered in the territory of that State has passed a roadworhiness test, together with cooperation by the Netherlands customs authorities with their counterparts in another Member State concerning any data that may be missing.

38 Judgment of the Court (First Chamber) of 5 June 2008 – Commission of the European Communities v Republic of Poland, Case C-170/07.

1.104 With regard to roadside testing as a method of directly increasing road safety, it is hard to see any requirement for action at the EU level action. The damage done by inadequate roadside tests falls on the road users in the Member State concerned; there is hardly any implication for other parts of the EU.[39] Nor is it necessary for similar approaches to be taken in different Member States; apart from making statistical comparisons more easily, therefore helping to inform EU policy, harmonisation in itself would not deliver concrete advantages.

4 OBJECTIVES

1.11. What are the general policy objectives?

1.105 The general policy objectives are to:

(a) improve the systems of PTI and roadside testing so as to contribute, with other policies, to a cost-effective reduction in the number and severity of road accidents and adverse effects of road vehicles on the environment;

(b) reduce the costs and administrative burden for people and businesses wishing to have their vehicles tested in different countries, and facilitate other improvements in the operation of the EU single market.

1.106 These objectives would both be achieved if a system of mutual recognition of PTIs was able to improve the efficiency of the single market while also increasing road safety, reducing the environmental disbenefits of road transport, increasing the provision of information wherever necessary and reducing administrative burdens. However, it is recognised that some of these objectives may conflict, in which case the guiding principle should be to select the policies that would do most to enhance EU citizens' welfare.

1.12. What are the more specific/operational objectives?

1.107 The specific/operational objectives, in SMART terms as recommended in the IA guidelines, include the following. The time frame for each should be within the period to 2020, in line with the strategy document targets mentioned earlier. All are Specific; Measurable; Achievable, Relevant and Time-framed:

[39] An exception to this would be if a Member State were to use roadside testing as a way of deterring commercial vehicles registered in another country. As far as we know, this has not been suggested. In addition, EC Directive 2000/30/EC specifically states that technical roadside inspections must be carried out without discrimination on grounds of the nationality of the driver or the country of registration or entry into service of the commercial vehicle.

(a) to reduce the proportion of vehicles which are not compliant and therefore present a risk to other road users and to the environment, as measured by the number of vehicles which fail roadside tests;

(b) to make it easier for people wishing to use the right to move freely within the EU and for firms operating international road transport businesses to have their vehicles tested wherever is most convenient;

(c) to make it easier for people wishing to use the right to reside freely within the territory of the Member States to have previous tests in other MS recognised;

(d) to increase the scope for vehicle testing stations to offer services to vehicles registered in other Member States, provided that this does not lead to an unjustifiable reduction in standards;

(e) to make it easier for those carrying out PTIs and roadside tests to have reliable information on the vehicle components (e.g. specifications related to the equipment), including information on any modifications made since the vehicle was first produced (this objective would require improved data exchange);

(f) to support consumer protection in the second-hand vehicle market taking into account the vehicle history, including milometer readings.

5 POLICY OPTIONS

1.13. Definition of policy options

1.1.20. 5 E's approach

1.108 To reduce road accidents researchers sometimes refer to the "5 E's approach". [40] These stand for:

- **Education:** targets the road user and tries to change the attitudes and behaviour of individuals through various forms of communication;
- **Encouragement:** sometimes intertwined with education and can include some form of incentive programmes;
- **Enforcement:** legal actions such as traffic enforcement;
- **Engineering:** measures taken to improve transport infrastructure; and
- **Evaluation:** assesses if the strategy used was successful or not.

[40] Campaigns and Awareness-Raising Strategies in Traffic Safety (CAST) (2009) "A theoretical approach to assess road safety campaigns: Evidence from seven European countries" Project co-financed by EC DG Energy and Transport

1.109 To achieve greatest effect the 5 E's should be used in combination. The policy options considered do aim to use elements of each of these approaches.

1.1.21. Eight pillars of PTI and roadside testing

1.110 Eight factors that affect the success of PTI and roadside testing are:

1. items to be inspected and inspection method (these aspects can be amended through EU comitology proceedings);
2. definition of defects and assessment of result of test;
3. equipment to be used;
4. skills and application of staff;
5. vehicle classes to be inspected;
6. frequency of testing;[41]
7. supervision of the testers and enforcement of the system; and
8. data / information exchange.

1.111 We refer to these as eight "pillars" on which an ideal testing system would have to rest; or as eight features that would need to be present in any effective system.

1.112 The following policy options are considered. They are intended to be broadly incremental; so that Option 2 would follow naturally from Option 1, Option 3 from Option 2, and so on. They may thus provide a sense of direction, or a path on which policy might develop. However, as the Options are developing along two dimensions (road safety and single market), the exact ordering of the implementation of some aspects of Option 4 (road safety) and Option 3 (single market), and similarly Option 2 (single market) and Option 1a (road safety), contains some flexibility; and from some perspectives Option 4 (standardisation) might seem a natural precursor to Option 3 (mutual recognition). The development of policy in incremental steps has the advantage of allowing the best use by policy makers of information which becomes available along the way – directing the end solution to its most optimal position.

1.113 The main options considered are:

[41] For roadside testing, this would relate to the number of vehicles targeted for roadside tests each year.

1.1.22. Option 1: Continuation of present policies

1.114 Option 1 provides the counterfactual case against which the effects of other policy options are to be compared. It is included in any impact assessment for this reason, and also as a partial check against any tendencies towards over-regulation; the case for a new policy intervention needs to be established.

1.115 Option 1 would maintain the present legal framework for PTIs, roadside inspections and on the exchange of information, as summarised in Section 1 above, and include established policies for its evolution.

1.116 This option does not therefore imply freezing present arrangements. Present policies include the use of comitology proceedings to keep the system up–to-date, and any continued improvements by Member States and others involved to the cost-effectiveness of the system. We have already noted that EU Member States are currently engaged in seeking greater efficiency from public sector activities; the increasing provision of on-board diagnostic devices (OBD) by vehicle manufacturers is another example of change likely to continue under existing policies.

1.117 It should also be noted that under present EC legislation only the first "pillar" (the items to be inspected and the inspection method) can be altered through comitology. Changes in other aspects of PTI and roadside testing would remain largely at the initiative or discretion of national governments and others involved.

1.1.23. Option 1a: No new legislation, but enhanced implementation and enforcement

1.118 This option would not introduce any new legislation, but there would be increased effort by the Commission to improve the standards of testing and to increase the advantages for citizens and EU businesses of the single market.

1.119 Such increased activity would include the screening of existing systems and the evaluation of strategies to overcome their limits (e.g. encouraging better implementation and enforcement).

1.120 In particular, Option 1a would involve increased use of some or all of the following:

(a) peer reviews and screening (EC);

(b) exploration of optimal levels of investment in PTI and roadside testing (EC, MS);

(c) exploration of the scope for risk-based testing regimes (e.g. taking account of warranty lives; taking account of mileage covered as well as time passed; taking account of whether a vehicle has been involved in an accident) (EC, MS);

(d) exploration of the scope for other measures to help motorists to decide when vehicles should be tested (e.g. including enforcement of legal responsibilities of the individual in some MS). These might include PR campaigns focusing on the actions that vehicle owners should be taking (EC, MS);

(e) Member State led enhancement of roadside inspections and testing supervision (MS);

(f) voluntary action by vehicle manufacturers (manufacturers)

(g) the Commission services could prepare to institute infractions proceedings if required (EC).

1.1.24. Option 2: Encourage bilateral agreements and better implementation

1.121 Under this option, in addition to better implementation of the present law as in Option 1a, Member States would be encouraged to seek bilateral or multilateral agreements for the mutual recognition of tests done in either country.

1.122 This option would involve the use of some or all of the following:

(a) an EC guidance document;

(b) best practice exchange;

(c) information exchange (to reduce any risk of fraud and to minimise the administrative burden data will need to be exchanged e.g. information confirming that a vehicle has passed a PTI. Information exchange techniques could vary across Member States).

1.123 The Commission would be responsible for facilitating these three actions, but decisions would be made by the Member States.

1.124 As with Option 1a, no new legislation would be needed to pursue Option 2.

1.1.25. Option 3: Mandatory mutual recognition throughout the EU

1.125 This option would introduce new legislation to require each Member State to recognise the validity of vehicle testing carried out in any other Member State. This would mean that:

(a) any vehicle could be inspected in any Member State;

(b) Member States would be obliged to recognise the certificates issued by other Member States as equivalent to theirs (with no additional requirements or conditions).

1.126 However, the frequency of the PTI in the Member State of registration would have to be respected.

1.127 Option 3 might be politically feasible only if the standards of testing in every Member State were acceptable to every other Member State (although in theory it could be imposed through majority voting). However, above such a minimum standard, there would be no requirement to make the methods of testing the same. This would therefore follow the precedent in other sectors, where mutual recognition does not depend on full standardisation of methods. There is at present no evidence on whether or not Member States would find mutual recognition based on present standards to be acceptable; this is something the Commission would need to explore.

1.128 There would be a need to define the information exchange standards required for mandatory mutual recognition and minimum data visibility, and perhaps to provide infrastructure to facilitate data exchange.

1.1.26. Option 4: Impose a mandatory standard EU-wide system for PTI and roadside testing

1.129 Under Option 4, in addition to requiring mutual recognition new legislation would prescribe the minimum standard of testing to be required. This could involve legislation to control all of the eight 'pillars' described above.

1.130 Thus PTI and roadside testing requirements would include details of:

(a) items to be inspected and inspection method;

(b) definition of defects and assessment of result of test;

(c) equipment to be used;

(d) skills or training of staff;

(e) vehicle classes to be inspected;

(f) frequencies of PTI;[42]

(g) the system for supervision and enforcement; and

(h) the system for information exchange. (In addition to the information exchanged under Option 3 information would be needed from the on board diagnostic (OBD) and the information from installed equipment.)[43]

1.131 Under this policy option, Member States would be permitted to apply tests that were above the minimum standards, but could not require the same from other Member States whose certificates they would be obliged to recognise, as is the case in the field

[42] For roadside testing, this would relate to the number of vehicles targeted for roadside tests each year.

[43] See proposal from EGEA for a new functionality test for electronic safety devices.

of type approval where there is a common minimum standard that must be respected.[44] Thus Option 4 would include mutual recognition as in Option 3, but also require more standardisation of testing methods.

1.132 Three different possible levels of PTI testing have been outlined by DEKRA for the purposes of this impact assessment, and these are now specified:

- Option 4a: Least rigorous
- Option 4b: Medium level
- Option 4c: High level.[45]

1.1.27. Option 4a: Least rigorous

1.133 This is defined according to the existing directive 2010/48/EU. Therefore it should be seen as the minimum standard possible at which to impose a mandatory standard EU-wide system for PTIs, as in DEKRA's assessment nearly all Member States have already established their PTI system above this level.

1.134 The following table summarises what is involved.

Technology and procedures	Roller brake test bench, pit or power lift, head lamp aiming device, CO – Lambda for petrol and K – value measurement for Diesel engines Items only need to be visually inspected and procedures for the use of roller brake testing are as mentioned as a reference to ISO 26096.
Frequency of tests	4-2-2 M_1N_1 1-1 $M_{23}N_{23}O_{34}$ and others*
Vehicle categories covered	M_{123} - N_{123} - O_{34}
Personal skills and qualifications	No definition
Supervision and enforcement	RSI – Reporting to the Commission according to 2010/47/EU, special measures if non-public bodies are involved (Chapter 1/2, 2009/40/EU)

** For taxis and ambulances*

Source: DEKRA

[44] Type approval is a set of harmonised design, construction and environmental standards that allows manufacturers to build to one set of requirements for the European market – ECWVTA (European Community Whole Vehicle Type Approval).

[45] Please note that in the internet consultation these three sub-options were presented in the order: most rigorous – medium – least rigorous. The order has been changed in this report as it provides a more natural presentation, and conforms with the idea of each policy option following naturally from the previous option.

1.1.28. Option 4b: Medium quality

1.135 Under Option 4b, a medium standard of PTI would be defined, and made compulsory for all Member States as the minimum required. It might involve:

Technology and procedures	Roller brake test bench, suspension test bench, head light tester, power lift with hydraulic play detectors, automated data collection, brake pressure measurement for power brakes, OBD for emission testing, CO – Lambda for petrol and K – value measurement for Diesel engines Different fixed definitions of measures and procedures for undertaking the tests may be used.
Frequency of tests	3-2-2 $M_1N_1O_{12}L_{345}$ 1-1 $M_{23}N_{23}O_{34}$ (additional safety tests in between)
Vehicle categories covered	M – N – L – O (all vehicles that are registered)
Personal skills and qualifications	Technician with additional education for PTIs with yearly training of more than two days.
Supervision and enforcement	Regular quality checks done by governmental departments – as well as roadside inspection targeted selection

Source: DEKRA

1.1.29. Option 4c: High quality

1.136 The highest standard envisaged for the purpose of this assessment was defined as follows:

Technology and procedures	Roller brake test bench, suspension test bench, head light tester, power lift with hydraulic play detectors, automated data collection and storage, load simulation for trucks, brake pressure measurement for power brakes, use of scan tools for the test of electronic components as well as for emission testing in addition to CO – Lambda and K – values also for motor cycles (L_{345})
Frequency of tests	3-2-2-1 $M_1N_1O_{12}L_{345}$ 1-1 $M_{23}N_{23}O_{34}$ (additional safety tests in between)
Vehicle categories covered	M – N – L – O (all vehicles that are registered)
Personal skills and qualifications	Qualified technician or engineer with additional education for PTIs with yearly training of more than three days.
Supervision and enforcement	Regular quality checks done by governmental departments Roadside inspection for M_1 and N_1 as well as M_{23} and N_{23} (sufficient number and method to be statistically firm)

Source: DEKRA

1.137 The three options 4a, 4b and 4c as described above relate to the costings as calculated later in the report.

1.138 It is worth noting that some Member States already require more stringent roadworthiness testing regimes than described in 4c. For instance, the UK and Slovakia both require a testing schedule of 3-1-1 for M_1 vehicles. We base our description of the PTI frequency required for cars for the high quality testing level on the optimum frequency as determined in the AUTOFORE report. As additional studies on cost benefit analysis of PTI frequency become available, the recommended highest frequency level may need to be updated.

1.139 To illustrate the maximum levels of the different components of the PTIs currently in place in different Member States in the EU the following description is provided:

1.13.10.1. Most rigorous (not considered in this report)

Technology and procedures	Roller brake test bench, suspension test bench, head light aiming tester, automated data collection and storage, load simulation for trucks, brake pressure measurement for power brakes, use of scan tools for the test of electronic components as well as for emission testing in addition to CO – Lambda and K – values also for motor cycles (L_{345})
	Different fixed definitions of measures and procedures for undertaking the tests may be used.
Frequency of tests	1-1 $M_1N_1O_{12}L_{345}$[46]
	0.5-0.5 $M_{23}N_{23}O_{34}$
	(additional safety tests in between)
Vehicle categories covered	M – N – L – O (all vehicles that are registered)
Personal skills and qualifications	Vehicle Engineer with additional education for PTIs with yearly training of more than four days
Supervision and enforcement	Undercover tests, regular quality checks done by governmental departments – quality assurance system according to ISO 17020
	Roadside inspection for M_1 and N_1 as well as M_{23} and N_{23} (sufficient number and method to be statistically firm)

Source: DEKRA

1.140 The testing regime as described above is more prescriptive than any currently in place in the EU and therefore is not an option at this time. Based on future research a very high level of roadworthiness testing such as this may become either more or less attractive as an option in the future.

1.141 Three similar tables relating to different possible levels for roadside inspections are given in Appendix 5: .

[46] To be considered (see cost evaluation)

1.1.30. Option 5: Deregulation at EU level

1.142 Under this option, the EU would withdraw from the field and leave Member States to decide what forms of vehicle testing if any they wished to implement.

1.14. Information exchange

1.143 Information sharing is part of all of the policy options described, the level, value and necessity of information sharing depending to some extent on the policy option.

1.144 As discussed in detail in Appendix 4, data exchange is valuable for two fundamentally different reasons:

(a) it facilitates policy analysis; and

(b) it facilitates efficient operations of tests and other transactions.

1.145 For the first purpose, details of individual vehicles are not needed; and time is not generally of the essence. For operational purposes, a different technology is appropriate, since little analysis is needed, but records of individual vehicles and tests need to be available promptly. Mutual recognition (under Options 3 or 4) would require improved exchange of operational data, which would also assist in other options.

1.15. Possible combinations of policies

1.146 As this impact assessment is looking at improving on two issues, road safety and single market aims, there are two separate strands of action that can be taken, one relating mainly to road safety improvements and the other to the creation of a single market in vehicle testing. Either strand of action could theoretically be taken without requiring any action towards the other objective. However, as the two issues are linked by the fact that reforms to the system of vehicle inspections might contribute to both their solutions, the most efficient solution is likely to be a combination of both a push for the single market and increased efforts to improve PTIs in the EU. We have also already noted that it is possible that there may be a policy trade-off; e.g. mutual recognition without standardisation at a high level could in theory reduce safety standards, whilst standardisation at a high level might take a long time to achieve during which progress on mutual recognition might be delayed.

1.147 The table below displays the two dimensions along which action can be taken, and where the policy options fall into this framework.

Table Error! No text of specified style in document.**.6: Policy options in relation to single market and PTI improvements**

	No additional push for single market	**Encourage bilateral agreements**	**Mandatory mutual recognition**
Continuing updates under comitology	Option 1	Possible	Politically infeasible?
Enhanced implementation and enforcement	Option 1a	Option 2	Option 3
Imposition of minimum standards – requiring change of legislative framework	Single market effectively already exists in this case	Mutual recognition likely to be as easy to implement as bilateral agreements	Option 4

1.148 The interrelationships between policies are explored in the following section.

6 ANALYSIS OF IMPACTS

1.16. Scope of analysis

1.149 The IA guidelines require us to consider the likely economic, social and environmental impacts of each of the short-listed options, including where relevant impacts outside the EU, and including of course both negative and positive effects and how impacts might develop over time. The commentary should consider which social groups, economic sectors or particular regions are affected; and the potential obstacles to compliance.

1.150 In this case we see little relevance for countries outside the EU.

1.17. Initial overview of options in relation to objectives

1.151 An overview of the relation between each policy option to the policy objectives is given in the following table. The impacts of the policies are evaluated incrementally – so the impacts given relate to the change that would be seen relative to the policy option before. To illustrate: the table shows a reduction of accidents as a result of Option 1, but no reduction from Option 2. Since Option 2 would include Option 1, there would be an overall reduction, but no more from the additional components.

Table Error! No text of specified style in document.**.7: Policy options in relation to incremental impacts**

Objective / Policy option	Reduction in accidents	Favourable impact on environment	More integrated EU market	Improved provision of necessary information wherever needed	Reduction in administrative burden
Option 1: No new policy action	Zero impact (by definition)	Zero impact (by definition)	Zero impact (by definition)	Zero impact (by definition)	Zero impact (by definition)
Option 1a: No new legislation, but better implementation	Yes	Yes	No	No	Yes (best practice solutions)
Option 2: Encourage bilateral agreements and better implementation	No	Small benefit	Yes	Yes	No
Option 3: Mutual recognition of PTIs throughout the EU, made obligatory by new EU legislation	No (possible negative effect)	Uncertain	Yes	Yes	Uncertain
Option 4: Impose through EU legislation a standard EU-wide system for PTIs					
Option 4a: Basic standard	No (possible negative effect)	Uncertain	Yes	Yes	No (possible negative effect)
Option 4b: Medium	Yes	Yes	Yes	Yes	No (possible negative effect)
Option 4c: Most rigorous	Yes	Yes	Yes	Yes	No (possible negative effect)
Option 5: Deregulation at EU level	No (negative effect)	No (negative effect)	No (negative effect)	No	Yes

Source: Europe Economics, DEKRA, CENTIQ

1.152 We now discuss each of the options and consider the likely impacts of alternatives to present policies.

1.18. Option 1: No new policy action

1.153 Option 1 provides the counterfactual against which the likely effects of other policies are to be assessed. This option is seen as suboptimal by DG MOVE, which believes

that there is clear scope for improvements in the effectiveness of testing, including through better exchange of information, to which action at EU level could contribute.

1.18.1.1.PTIs

1.154 With a continuation of present policies, the systems of PTI and roadside testing in use would continue to evolve. For example, the AUTOFORE report recommended an increase in the minimum frequency of tests.[47] On the other hand, the Dutch Government has recently reduced the frequency of tests for cars[48] and the UK considered doing so, but decided that its present practice (which involves some of the most frequent testing in the EU) was optimal for the UK.[49]

1.155 Nonetheless, under Option 1 the pattern of frequency of tests might be expected to remain broadly as at present, and as shown in the following table.

47 CITA (2007) "AUTOFORE Report: Study on the Future Options for Roadworthiness Enforcement in the European Union"

48 From 3-1-1-1 until 1 January 2008 to 4-2-2-1 from this date. Source: SWOV Institute for Road Safety Research (2009) "SWOV Fact sheet: Periodic Vehicle Inspection for cars (MOT)" Leidschendam, the Netherlands

49 Department of Transport (2008) "MOT Scheme Evidence-base"

Table Error! No text of specified style in document.**.8: Present frequencies of PTIs**

	Private cars	Goods vehicles < 3,500 kg	Goods vehicles > 3,500 kg	Passenger vehicles < 8 passengers	Passenger vehicles > 8 passengers	Trailers < 3,500 kg	Trailers > 3,500 kg	Agricultural tractors	Motorcycles
Belgium	4/1/1	6m/6m/6m	6m/6m/6m	6m/6m/6m	3m/3m/3m	1/1/1	6m/6m/6m	6m/6m/6m	n/a
Bulgaria	3/2/1/1	-	1/1/1	-	1/1/1	-	1/1/1	-	-
Czech Republic	4/2/2	4/2/2	1/1/1	4/2/2	1/1/1	4/2/2	1/1/1	4/4/4	4/2/2
Denmark	4/2/2	4/1/1	1/1/1	1/1/1	1/1/1	n/a	1/1/1	n/a	n/a
Germany	3/2/2	2/2/2	1/1/1	1/1/1	1/1/1	3/2/2 (<750kg) 2/2/2 (>750kg)	1/1/1	2/2/2 1/1/1	2/2/2
Estonia	3/2/2/2/1	1/1/1	1/1/1	1/1/1	1/1/1	3/2/2/2/1	1/1/1	2/1/1/1	3/2/2/2/1
Ireland	4/2/2	4/2/2	1/1/1	1/1/1	n/a	1/1/1	n/a	n/a	n/a
Greece	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Spain	4/2/2/1	2(x3)/1(x4)/6m	1(x10)/6m	2/1/1/1/6m	1(x5)/6m	2(x3)/1(x4)/6m	1(x10)/6m	1(x10)/6m	5/2/2
France	4/2/2	4/2/2	1/1/1	4/2/2	-	-	-	-	-
Italy	4/2/2	4/2/2	1/1/1	4/2/2	1/1/1	1/1/1	1/1/1	-	4/2/2
Cyprus	4/2/2	-	1/1/1	-	1/1/1	-	1/1/1	-	-
Latvia	2/2/2	1/1/1	6m/6m/6m	6m/6m/6m	1/1/1	1/1/1	1/1/1	n/a	1/1/1
Lithuania	3/2/2	-	1/1/1	-	1/1/1	-	1/1/1	-	-
Luxembourg	3.5/1/1	1/1/1	6m/6m/6m	3.5/1/1	6m/6m/6m	3.5/1/1	6m/6m/6m	3.5/1/1	3.5/1/1
Hungary	4/3/2/2	2/2/1/1	1/1/1	3/3/2/2	1/1/1	2/2/1/1	1/1/1	3/3/2/2	3/3/2/2
Malta	1/1/1	-	1/1/1	-	1/1/1	-	1/1/1	-	-
Netherlands	4/2/2/1	3/1/1	1/1/1	1/1/1	1/1/1	-	1/1/1	-	-
Austria	3/2/1	1/1/1	1/1/1	1/1/1	1/1/1	3/2/1	1/1/1	3/2/1	1/1/1
Poland	3/2/1	3/2/1	1/1/1	1/1/1	1/1/1	3/2/1	1/1/1	3/2/2	3/2/1
Portugal	4/2/2/1	2/1/1	1(x7)/6m	1(x7)/6m	1(x7)/6m	n/a	1(x7)/6m	1(x7)/6m	n/a

Romania	2/2/2	-	1/6m/6m	-	1/1/1	-	1/1/1	-	-
Slovenia	3/2/2	3/1/1	1/1/1	3/1/1	1/1/1	3/1/1	1/1/1	3/1/1	3/1/1
Slovakia	3/1/1	-	1/1/1	-	1/1/1	-	1/1/1	-	-
Finland	3/2/1	3/1/1	1/1/1	1/1/1	1/1/1	2/2/2	1/1/1	n/a	n/a
Sweden	3/2/1	1/1/1	1/1/1	1/1/1	1/1/1	4/2/2	1/1/1	n/a	4/2/2
United Kingdom	3/1/1	3/1/1	1/1/1	3/1/1 1/1/1	1/1/1	n/a	1/1/1	n/a	3/1/1

Source: AUTOFORE Study on the Future Options for Roadworthiness in the European Union: WP540 – Analysis of pass/fail rates and accidents for different vehicle types in relation to PTI – frequency and vehicle age; DEKRA

1.156 A number of Member States follow the minimum frequencies as dictated by the EC, which are 4/2/2 for cars and 1/1/1 for goods vehicles over 3,500kg. Some Member States implement PTI inspection frequencies above this minimum level because they see value in the more stringent standards.[50] This is made possible by the freedom for Member States to choose their own frequencies, above the prescribed minimum, under the current directives.

1.157 With regard to the content of PTIs, our assessment for the purpose of this report is that 37 per cent of MS operate a standard approximately equivalent to the least rigorous standard, as described in Option 4a, 44 per cent in the medium category (4b), and 19 per cent in the most rigorous category described as 4c. The countries with the most rigorous standards (similar to those described for 4c) are deemed to be Germany, Sweden, Belgium, Luxembourg and Finland. Those categorised as having a medium level of rigour (similar to those described for 4b) are France, the Netherlands, Spain, Portugal, the UK, Slovakia, the Czech Republic, Austria, Denmark, Estonia, Ireland and Latvia. The remaining 37 per cent (with a PTI level currently similar to that described in 4a) would face the most significant cost increases if EU legislation were to require increased technical testing standards. These are Italy, Poland, Malta, Hungary, Bulgaria, Lithuania, Slovenia, Romania, Cyprus and Greece.

1.158 Very few Member States still directly control and run the PTI system with staff employed by the government. Most have privatised the system, but take active control of the work and results of PTI measures. Close relations between governmental departments and the PTI organisations can support an effective PTI system.

1.159 Private solutions can be found in some Member States with the involvement of garages, licensed to do PTIs with staff from the garage (after special training), and providing a combination of repair and testing at one place. Measures have to be taken to prevent corruption against the interests of the vehicle owner (if testers were to pretend there is more work to be done than really necessary). In other Member States PTIs are separated from repair work, to avoid conflict of interests. Some new Member States provide PTIs in close connection with the police and other public authorities or agencies.

1.160 An advantage of the garage-based system is the high number of test locations spread over the country, reducing the distances motorists have to travel for the test, and the time it costs them. For the system in which testing stations focus exclusively on the tests, high throughput and specialisation by the staff may help to achieve efficient

[50] Member States such as Portugal and Spain have old vehicle stocks and poorly maintained roads, which may help to explain their requirement for a more stringent PTI frequency.

operations. Dedicated technology is efficient to use and the staff may be better trained because of their experience (although a competent mechanic should be able to administer a PTI efficiently). The authorities should also be able to supervise the smaller number of testing stations more cheaply (there are, for example, only 300 stations for the whole of Spain, where a high throughput is supporting what DEKRA regards as a very effective test).

1.161 The overall cost to motorists of the tests, including the system administration costs mentioned above, is indicated by the following table from the 2004 AUTOFORE report.

Table Error! No text of specified style in document.**.9: Inspection fees per passenger cars, 2004**

EU-Member State	Inspection costs in Euros per inspected vehicle without taxes
Belgium	24.5
Denmark	53.8
Germany	40
Greece	36
Spain	31
France	55
Ireland	48.4
Italy	35
Luxembourg	20.9
Austria	37
Portugal	24.63
Finland	49
Sweden	33
United Kingdom	52.49
Czech Republic	50
Estonia	30
Hungary	20.18
Poland	21.29
Slovenia	35

Source: AUTOFORE WP700: Cost-Benefit analyses for roadworthiness options

Inspection costs were not provided for the Netherlands, Cyprus, Latvia, Lithuania, Malta or Slovakia.

1.162 Based on these values, the inspection costs in Table **Error! No text of specified style in document.**.9 and an average age for scrapping vehicles of 17 years, we can

estimate that the total cost of PTIs in Europe is at least € 8.52 billion, expressed in current prices.[51]

1.163 Option 1 includes continued use of comitology to implement improvements and to keep up with technological developments. An example of an issue that might be addressed is tyre pressures. Currently a significant number of accidents due to technical defects are from tyre defects (30 per cent),[52] such as low tyre-pressure or insufficient tread-depth. However, currently PTIs in most EU countries (exceptions are France and Holland) do not check tyre pressure, but the overall tyre condition as well as the correct size and type of tyre for the vehicle and the wheels are tested. With tyre condition having significant efficiency and safety effects, there could be benefits of adding to the testing of tyre condition in future comitology proceedings.[53]

1.18.1.2. Roadside testing

1.164 Turning to roadside testing, in order to understand present arrangements and to begin to assess how they might develop under a continuation of present policies, DEKRA sent a questionnaire to the Member States concerning roadside inspection. This included questions on the selection of vehicles for roadside inspections and the equipment used for roadside checks.

1.165 The following table presents the main results (not all Member States replied).

[51] A detailed calculation is presented in Appendix 7: Calculating the Total Cost of PTI Inspections in Europe.

[52] Federal Statistics Office, Germany; DEKRA Safety report; ETR MA Tyre and Rubber Manufacturers association.

[53] The US has recently required new vehicles to fit devices to show tyre pressures to the driver and we have noted earlier that a similar requirement is planned for the EU.

Table Error! No text of specified style in document.**.10: Present practices in roadside testing**

MEMBER STATE	Vehicles tested	Authority in charge for RSI	Method / test equipment	Selection	Inspected items
Ireland	HGV, Buses, Trailers	Road Safety Authority, Garda Siochana	Visual inspection + visual inspection trained	Statistical + pre-selection + targeted	all except petrol emissions
Poland	HGV, Buses, Trailers, Passenger Cars	Road Transport Inspection, Police, Border Guard, Customs	Visual inspection trained + emission measurement	Statistical + pre-selection	all
Germany	HGV, Trailers	Police, BAG	Visual inspection + visual inspection trained + brake test bench (external if needed)	Statistical + pre-selection + targeted	all
Lithuania	HGV, Buses, Trailers	Ministry of Transport and Communications of the Republic of Lithuania, State Road Transport Inspectorate, Police Department und Ministry of Interior	Visual inspection + visual inspection trained + brake test bench + lift or pit + emission measurement device	Pre-selection + targeted	all except petrol emissions
Slovenia	HGV, Buses, Trailers, Passenger Cars, Motorcycles	Ministry of the Interior, Transport Inspectorate of the Republic of Slovenia, Customs Administration of the Republic of Slovenia, police	Visual inspection + visual inspection trained + brake test bench + lift or pit + emission measurement device	Statistical + pre-selection + targeted (random checks of vehicles are allowed)	all except emissions petrol and speed limiting device installation
Sweden	HGV, Buses, Trailers, Passenger Cars, Motorcycles	Swedish transport agency, police	Visual inspection trained + brake test bench + lift or pit + emission measurement device (at stationary test sites along main roads)	Pre-selection + targeted	all except emissions
UK *	HGV, Buses, Trailers, Light Goods Vehicles	Department for Transport, VOSA	Visual inspection trained + mobile brake test bench	Pre-selection + targeted	all
Austria *	HGV, Buses, Trailers, Light Goods Vehicles, Passenger Cars, Motorcycles	Ministry of Transport, federal countries	Visual inspection trained + brake test bench + wheel-play-detector + emission tester (special designed on site equipment	Pre-selection + targeted	all
Luxembourg *	HGV, Buses, Trailers	Societe Nationale de Controle Technique SNCT, Administration des Douanes et Accises	Visual inspection trained + brake test bench + lift + emission tester (special designed on site equipment)	Pres-selection + targeted	all

** information was obtained from other sources because no response was received to the questionnaire*

1.166 We assume for the purpose of the counterfactual that the situation regarding roadside testing would not change significantly without any action from the Commission.

1.167 There is a large range in the number of inspected vehicles indicating that Member States place different levels of emphasis on technical roadside inspections.

1.168 The share of non-compliant vehicles out of the inspected vehicles in a Member State differs from 0.3 per cent for Bulgaria to 63 per cent for Denmark. For 8 of the 19 Member States where results are reported[54] the rate of non-compliant commercial vehicles does not exceed 5 per cent, but on the other hand in six countries the rate is higher than 30 per cent. This difference is more likely to reflect different systems of pre-selection or targeting of vehicles for roadside inspection than differences in the average standards of vehicles on the roads.

1.169 To elaborate: There are two reasons for the wide spread of results:

(a) *Selection of the inspected vehicles*

There is a substantial difference in whether the vehicles to be inspected are selected on a purely statistical basis (every vehicle has the same chance to be inspected) or if the staff of the organisations in charge of RSIs use some kind of pre-selection for the inspected vehicles. This might involve selecting vehicles based on whether they appear not to be in roadworthy conditions. This follows the intention of Directive 2000/30/EU, as it is given in the foreword under paragraph 10 that:

(10) The method of inspection selection should be based on a targeted approach, giving greatest effort to identifying vehicles that seem most likely to be poorly maintained and thereby enhancing the authorities' operational effectiveness and minimising the costs and delays to drivers and operators.

The consequence of this method of targeting is that a high proportion of vehicles which are not in roadworthy conditions are inspected. The inspection effort is focused on those vehicles which are obviously not roadworthy, with no expectation that the results are likely to be representative for all vehicles on the road.

(b) *Methods, procedure and criteria for inspection*

[54] EU27 without Czech Republic, Spain, Slovakia, Italy, Ireland, Finland and Lithuania – no results available - and Cyprus – seems to have another kind of evaluation method as the rate of non compliant vehicles is reported at about 200 per cent.

Clearly all Member States do use visual inspection for the first steps in their check. Differences in procedure may occur, depending on the training and experience of the staff. In some cases further equipment is used (brake tester for evaluation of brake efficiency, lift, pit, emission test devices), in others further equipment is not used. DEKRA advises that many defects can only identified by use of such additional equipment.

1.170 In any analysis of the results of roadside inspections in the EU, comparisons between the results for different Member States are highly uncertain.

1.171 Roadside inspections are mandatory for commercial vehicles only. Some countries also carry out roadside inspections for passenger cars, but currently there is no EU legislation requiring any kind of standardisation.

1.172 Roadside inspections are used in all Member States in addition to other measures like PTIs. They are not as intensive as a periodical inspection, but they are an instrument for the supervision of roadworthiness on the roads at any time, not just for defined periodic intervals. In addition, in a Member State vehicles from any country in the EU on the road can be the object of roadside inspection, while periodical inspection only applies to vehicles registered in that Member State.

1.173 Roadside tests can incur a wide range of costs, depending on the testing method chosen. Detailed investigations are very expensive compared to the minimal costs involved in visual inspections of the vehicle. Starting with screening methods, the costs for this are quite low with approximations of costs around € 5-10 per vehicle. This includes the cost of checking the vehicle's papers and general condition. However, if the vehicle is recognised as non-conforming it would then be moved to dedicated test areas to perform further tests, the costs of which can amount to around € 200-300 per vehicle in Germany.[55] In Austria, maximum costs of € 100 have been reported.[56]

1.174 The implementation of remote sensing of emissions for roadside testing is currently only in place in Austria. In Spain the technology is used for enforcement, and in Sweden and Switzerland it is being used for research purposes only. Introducing remote emissions testing has the advantage of allowing the worst polluters to be identified at a low cost per vehicle. However, in DEKRA's view the results of the test are not reliable enough on their own to be used to prove that a vehicle has too high emissions, and therefore conventional emissions testing devices must continue to be used in tandem when performing roadside tests.

55 DEKRA

56 DG MOVE; Der Rechnungshof (2006) "Bericht des Rechnungshofes"

1.175 The cost of undertaking a roadside emission test with remote sensing technology is, however, less than € 1 per vehicle.

Table Error! No text of specified style in document..**11: Cost of roadside emission testing**

€ 100,000	Cost per year (ESP AccuScan 4000 + staff operating costs + overhead costs)*
€ 600	Cost per day (assuming 160 days / year)
€ 0.01	Cost per vehicle (if 1000 vehicles per hour)

Source: DG MOVE, ESP (http://www.esp-global.com/en_US/RSD/FAQ)

** Cost of the equipment is estimated as the cost of one remote sensing device(€ 120,000), one van (€ 50,000) and additional drivers equipment (€ 30,000 – consisting of road signs, coins etc) spread over five years, therefore € 40,000 a year. Estimated costs of the operator and overhead together come to € 60,000 a year.*

1.176 Section 3 above has described how we expect that the trends in road accidents and single market issues would evolve under a continuation of present policies (i.e. under Option 1).

1.19. Option 1a: No new EU legislation, but better implementation

1.177 Policy objectives can be delivered in a number of ways, for example through the provision of information, market incentives, and the deterrent effect of penalties, or through legislation. Without implementing any new legislation, DG MOVE would be able to continue to pursue its policy objectives including through the provision of information or through encouraging Member States to adopt appropriate penalties for unsafe vehicles. The present legislation allows the use of infraction proceedings if necessary.

1.178 Therefore, some possible methods available to improve implementation are:

(a) peer reviews and screening;

(b) exploration of optimal levels of investment in PTI and roadside testing;

(c) exploration of the scope for risk-based testing regimes (e.g. taking account of warranty lives; taking account of mileage covered as well as time passed; taking account of whether a vehicle has been involved in an accident);

(d) exploration of the scope for other measures to help motorists to decide when vehicles should be tested, e.g. including use of legal responsibilities of the individual in some MS (these might include PR campaigns focusing on the actions that vehicle owners should be taking);

(e) MS enhancement of roadside inspections and testing supervision;

(f) voluntary action by vehicle manufacturers;

(g) the Commission to prepare itself to institute infractions proceedings if required.

1.179 If our analysis of the underlying reasons for differences in practices and in the standards of testing is correct, the interests of the Commission and of the other regulatory authorities involved are well aligned and it should be possible to make considerable progress without new legislation (also bearing in mind that the existing legislation in Directive 2010/47/EU and Directive 2010/48/EU gives the Commission significant powers.)

1.1.31. Peer reviews and screening

1.19.1.1. Costs

1.180 The cost of a programme of peer review and screening would not be large if one envisaged two meetings per year of national experts, meeting with the Commission and presenting a mixture of comments and discussion from existing knowledge, and the results of some studies that are already in progress or have been completed. This would not cost more than the time of the officials, and would not require any addition to the numbers. Even allowing travel and some consultancy support, the cost would be measured in low € hundreds of thousands.

1.181 Two one-day meetings per year, each attended by two national experts from each Member State, would amount to 108 trips to Brussels. With a daily subsistence allowance (DSA) of around € 90 per day, fixed additional allowance (FAA) of € 250 per day,[57] transport costs of around € 300 per trip and accommodation costs of around € 100 per trip, this would equate to a cost of € 79,920.[58]

1.19.1.2. Benefits

1.182 The benefits are of course uncertain; but to give an idea of the orders of magnitude of resources that could be saved through policy analysis in this area, the UK study referred to earlier estimates that to change the frequency of PTIs to three possible alternatives to the present would have cost the UK society £67m for one scenario, £191m for the second, and £887m for the third (approximately € 77m, € 220m and € 1,020m, respectively). Of course, the UK is a large economy, and the study referred to was a significant piece of work, but the example serves to show the potential advantages of disseminating and making use of existing knowledge.

[57] http://ec.europa.eu/enlargement/taiex/pdf/experts/guide_for_experts.pdf

[58] (€90+€250+€300+€100)x108

1.183 The World Health Organisation report on road safety[59] noted that many effective preventive strategies already exist in Europe, and that the roads in many European countries are among the safest in the world. Therefore, there is potential to reduce the burden of road traffic accidents by applying lessons of good practice between different countries. In particular, evidence from the different systems that have been implemented across the EU up until now provides valuable information on the merits of alternative policy options for PTIs. For instance, allowing private garages across a country to perform PTIs, as currently implemented in some Member States, has the impact of reducing the travel and emission costs of this burden, but may increase the costs of ensuring compliance with testing regulations.

1.1.32. Risk-based inspection regimes

1.184 It is a principle of good regulation to apply regulatory resources where the risks are greatest, and we have noted that this principle is reflected explicitly in the roadside-testing Directive. However, the principle is at present applied only to a limited extent in the systems of PTI, through the decisions made about frequency (increasing as vehicles become older) and types of vehicles to test. There has been some discussion of applying a more rigorous regime to cars used for business purposes, on the grounds that they are likely to drive longer distances and therefore the maintenance requirements recommended by the manufacturer may no longer fit with the mileage actually travelled. Moreover, a business car which is not privately owned by the driver may be less well maintained as the user has less incentive to keep it in good condition ("company cars go over the kerb better than other cars") and the more frequent changes of driver typical for cars used for business purposes may also have a negative impact.

1.185 It would be also possible to allow vehicles that could be shown to have been used for low mileages a longer period before testing; or for vehicles still covered by a maker's warranty – during which time the motorist has an incentive to check every rattle and to have the manufacturers repair the slightest defect – to be exempt (although not all items checked in a PTI are covered by all warranties).[60] On the other hand, vehicles that have been involved in an accident might be required to have an additional test (this idea was well supported in the on-line consultation, summarised in Appendix 3).

1.186 It would also be useful to explore the optimal balance between legal responsibilities of vehicle owners to maintain their vehicles in a safe condition at all times, and the

[59] World Health Organisation (2009) "European status report on road safety: towards safer roads and healthier transport choices" Copenhagen, WHO Regional Office for Europe

[60] Key safety critical items such as lights, braking, steering and tyres are not always covered by warranty (Source: Consultation response from the Chief Executive of a major business involved in MOT testing, UK).

requirement to have a PTI. If it is true that most vehicle defects could be prevented by more knowledgeable and responsible behaviour by motorists, policy emphasis on individual responsibility might be cost-effective.

1.187 As this is relatively unexplored ground the costs of investigation and research would be higher than for peer reviews and screening, and might be € 2-3 million a year for research. However, the potential gains would easily be measured in larger orders of magnitude.

1.1.33. PR campaigns

1.188 One method of delivering policy objectives is through the provision of information on the costs and benefits of action. This can help ensure that individuals recognise the benefits of acting in a particular way, providing them with the incentive to act in their own benefit, without forcing them to do so. An increase in awareness of the importance of keeping vehicles roadworthy could be provided by either an EU PR campaign aimed directly at citizens, or through the encouragement of national governments to perform similar campaigns at a Member State level. The legal duty in some Member States of motorists to keep their vehicles safe could be reinforced in such a campaign.

1.189 The cost of sending out reminder letters to all vehicle owners to inform them that the deadline for obtaining a new PTI is approaching would come to around € 180 million a year. This is calculated based on a total of 300 million vehicles being tested annually, each at cost of € 0.60 (representing the cost of a stamp). The benefits of such a measure are uncertain.

1.190 The costs of designing and distributing a PR campaign can be very large, and it must be easy to waste money in PR campaigns as achieving significant and sustained behavioural change through information campaigns is challenging.

1.191 There are, however, several reasons to think that there may be scope for cost-effective initiatives in this area:

(a) It is in motorists' interests to know how to keep their vehicles safe, and to be reminded of their legal obligations.

(b) There is already experience of government PR campaigns to promote safe driving; [61] and these could be extended or repeated with appropriate emphasis on vehicle maintenance.

[61] See www.cast-eu.org

(c) Similar campaigns could be appropriate in different Member States, allowing the possibility of economies of scale.

(d) Tyres and lights are some of the most important technical defects that occur on vehicles; however, neither of these requires trained mechanics to assess their basic functionality. In addition, the condition of tyres and lights would ideally be checked monthly and rectified immediately if a fault is discovered, rather than delaying until the next scheduled PTI.

(e) Most fundamentally, it would address a root cause of vehicles being unsafe – responsible care by motorists probably being more important than the details of the testing regime.

1.192 A study by DEKRA[62] found that over 6 per cent of inspected car accidents were caused by vehicle defects, mainly in braking systems, lighting systems and tyres. The people most responsible by far for accident-relevant defects in braking systems and tyres were the owners and drivers of the vehicles. The proportion of accident-relevant tyre defects for which owners or drivers were responsible (damage because of under-inflation or age) was revealed to be 35 per cent, while fitting and repair defects accounted for 7 per cent, operating damage (e.g. running over a nail) accounted for 17 per cent and manufacturing defects accounted for 6 per cent.[63] Similarly, drivers / owners were found to be responsible for 46 per cent of accident-related braking defects, caused by lack of maintenance, and almost 15 per cent of accident-related defects were due to defective fitting or repairs, for which owners may again be responsible if they have carried out private work on their braking systems. This confirms the potential of policies focused on drivers' and owners' general responsibilities.

1.193 The road safety effect of correct tyre pressure can be estimated using the DEKRA data, if we assume 6 per cent of crashes are caused by serious vehicle defects, of which 1.5 per cent are a result of tyre defects. If we then assume that, at most, a third of these tyre defects are due to low tyre-pressure, we can obtain an estimated figure of 0.5 per cent of all crashes that could be attributed to incorrect tyre pressure.[64]

1.194 If a PR campaign were implemented to advertise to vehicle owners the benefits in terms of safety and vehicle efficiency that would accrue from regularly checking their tyres and lights, significant improvements in road safety and vehicle emissions might be obtained. Such an awareness campaign could be implemented at petrol stations,

62 DEKRA (2005) "Internationale Strategien zur Unfallvermeidung" In: Technische Sicherheit im Strassenverker. DEKRA Fachschrift 58/05. DEKRA Automobil GmbH, Stuttgart

63 These findings were based on an investigation of 400 cases of tyre damage between 2001 and 2004.

64 SWOV Institute for Road Safety Research (2009) "SWOV Fact sheet: Periodic Vehicle Inspection of cars (MOT)" SWOV, Leidschendam, the Netherlands

where facilities for checking tyre pressure are available. If we predict that between 5 and 20 per cent of people might react positively to a PR campaign on tyre pressures, then this could lead to a 0.025 to 0.1 per cent reduction in accidents in the EU, hence 10 to 39 fewer deaths and 400 to 1,600 fewer injuries a year.[65] This reduction can be valued in the region of € 19 to 76 million.[66]

1.195 A more general PR campaign advertising the benefits of keeping vehicles in a roadworthy condition may help reduce the problem that PTI testing does not guarantee that a car will remain roadworthy until the subsequent test. Ideally vehicles would be kept to a consistently high level of repair, rather than only being checked at periodic intervals.

1.196 A 2009 study investigated whether road safety campaigns are successful using a meta-analysis of road safety campaign effects.[67] The study used information on 427 individual campaign effects and associated variables extracted from 228 different campaign evaluation studies, most reported within the last 30 years in 14 different countries. The results found that road safety campaigns result in a 9 per cent decrease in accident levels.[68]

1.197 Indicative costs for some of the campaigns investigated in the study were € 490,000[69] for a Dutch seatbelt campaign carried out in 2008 and € 462,000[70] for a child restraint campaign in Austria.

1.1.34. Enhancement of roadside inspections and testing supervision

1.198 We have shown that there is a wide variation in the ways in which MS carry out roadside tests, and in the results.

65 Based on the recorded levels for these in 2008. Source: CARE database

66 Based on a value of road accident fatalities of € 1,309,968 and road accident injuries of € 15,336 (derived from DfT figures)

67 Campaigns and Awareness-Raising Strategies in Traffic Safety (CAST) (2009) "A theoretical approach to assess road safety campaigns: Evidence from seven European countries" Project co-financed by EC DG Energy and Transport

68 According to weighted average effects and calculated after accounting for publication bias. The results also showed that road safety campaigns resulted in a 25 per cent increase in seatbelt use, a 16 per cent reduction in speeding, a 37 per cent increase in yielding behaviour and a 16 per cent increase in risk comprehension.

69 This included costs for concept development (advertising agency), production (TV and radio spots, billboards, posters, website), dissemination (broadcasting and placement) and research (pre-testing, effect measurement). An additional €72,500 was also spent on the evaluation study after the campaign had been put in place.

70 This included personal costs (FACTUM + INFAR, evaluation and audit), travel costs, campaign materials (gadgets, posters etc.), subcontracting (song producer, web design, layout folder and posters) and indirect costs. An additional €43,700 was spent on the evaluation study.

1.199 This variation suggests that there may be lessons to be learned by comparisons of practice. For example, some countries clearly test a far higher proportion of vehicles on their roads than others, reflecting a different assessment of the costs (to the motorists stopped and to the testers) and the benefits (greater likelihood of catching a sub-standard vehicle). Discussions between those involved could enable efficiency gains to be made.

1.200 The value of roadside testing is far less well-established than that of periodic technical inspections of vehicles. This is evident by the fact that only three Member States[71] performed roadside tests before this was made compulsory by EU Directive 2000/30/EC,[72] whereas most Member States already had a system of periodic inspections in place before this was made compulsory at EU level. During the course of our research we did not discover any conclusive studies illustrating the magnitude of road safety benefits achieved from roadside tests.[73]

1.201 Increased harmonisation of methods for roadside tests in the EU might increase the value of test results to analyse levels of vehicle roadworthiness between Member States. The most compelling arguments for introducing EU-wide legislation harmonising roadside tests appear to relate to the need for information to be collected on an internationally standard basis in order to support the enforcement of other EC Regulations.[74] Enforcement requires reliable information to be obtainable, but not necessarily in any standardised manner. Therefore, an estimation needs to be made of the value of the availability of such data before any harmonisation of roadside testing can be proposed. Currently the quality of data collected from roadside tests is insufficient to produce any kind of inter-country analysis. Additionally, the use of roadside tests as a method of useful data collection is at odds with the original justification for its introduction as a method of increasing road safety. Higher quality data are achievable by strict statistical methods to choose which vehicles to test whereas road safety aims require vehicles to be chosen based on their perceived likelihood of being found unroadworthy.

1.202 Therefore there is currently no proven requirement from a single market or from a road safety perspective for the EU to play any role in roadside testing systems, or to

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71 Source: DG MOVE

72 This Directive was implemented on the rationale that the regulated annual roadworthiness test for commercial vehicles was not considered sufficient to guarantee that commercial vehicles are in roadworthy condition throughout the year, and that effective enforcement through targeted additional technical roadside inspection is an important cost-effective measure to control the standard of maintenance of commercial vehicles on the road.

73 The AUTOFORE report found that the only empirical evidence existing looking into the impacts of roadside inspection on accidents comes from the US. This data cannot easily be applied to European conditions due to the different contents of the roadside inspection procedure and road conditions in the two regions.

74 For instance Regulation (EC) No 1071/2009, 1071/2009 and 1073/2009.

attempt to insist on standardising the methods of testing; the EC's role under this policy option should be to encourage improvements in practice by providing relevant information where it can.

1.203 The costs of arranging this are likely to be modest, particularly if it is arranged alongside the enhanced arrangements for peer review and screening discussed above. The potential benefits are significant.

1.204 An indication of the costs of roadside tests is as follows:

Table Error! No text of specified style in document..**12: Costs per year for a roadside testing station**

Mobile testing unit	€ 60,000
Truck	€ 20,000
Technicians for operation	€ 180,000 (three at € 60,000 per year each)
Operating costs (fuel etc)	€ 40,000
TOTAL	**€ 300,000**

Source: DG MOVE, Der Rechnungshof (2006) "Bericht des Rechnungshofes"

Annual costs for the mobile testing unit and the truck are calculated as the price of these items, € 300,000 and € 100,000, respectively, spread over five years.

1.205 Assuming the testing unit operates for 200 days per year and that 20 heavy duty vehicles can be inspected each day, this equates to an average cost of € 75 per truck tested.

1.1.35. Voluntary action by vehicle manufacturers

1.206 Many research projects involving different original equipment manufacturers (OEMs) are already in place.

1.207 A joint research project could be undertaken aimed at developing better durability of car safety components by design. At the present time, in DEKRA's view the main focus at the vehicle-design stage appears to be on the reliability and robustness of new vehicles, rather than their longer-term durability. Emissions performance equipment already has mandatory life-targets established. However, in practice the failure rate of emissions-related equipment is about 10 per cent for vehicles as early as their first emissions test,[75] and not all deteriorations are covered by the regulations.[76] Such targets could perhaps be tightened for emissions-performance equipment and also expanded to cover safety components.

[75] In Germany, separate periodical tests are undertaken on safety and emissions.

[76] Source: ZDK – Failure evaluation in Germany

1.208 Vehicle warranties are thought to be offered for longer periods for an increasing proportion of new vehicles, reflecting improvements in vehicle design. Whilst a vehicle is under warranty, the owner has every incentive to maintain it fully, so it would arguably be in the general interest to make sure that PTI and roadside inspection systems support this development. It might, for example, be useful:

(a) to allow vehicles under appropriate warranty to be exempt from PTI requirements;[77]

(b) to investigate a system whereby manufacturers can be informed when components on vehicles which they have manufactured lead to PTI tests being failed.

1.209 With regard to emissions, we note a submission by one of those consulted, the Federation of European Motorcyclists' Associations (FEMA). This has not been analysed but appears worth consideration.

> FEMA considers the manufacturer of a vehicle as the main party responsible for the level of emissions the vehicle is producing. If the vehicle fails to comply with standardised emission limits after a certain mileage, the user must not be held liable for the costs arising from repair. If legislators require periodical checks of the emission level, this burden must not be put on the consumer either.[78]

1.1.36. Commission to prepare itself to institute infractions proceedings if required

1.210 DG MOVE estimates that infraction proceedings may be instituted under this option approximately every three to five years. Therefore this would require the work of an official amounting to approximately one month per year (at a cost of around € 10,000 pa), as well as the costs for a lawyer acting in front of the court once every three to five years (potentially costing € 20,000 a time, so an average of € 4,000 to € 6,700 pa).

1.211 The Commission would be prepared to institute infraction proceedings should this become necessary at any stage.

1.1.37. Summary of Option 1a

1.212 Most of the likely costs and benefits cannot be quantified, but orders of magnitude have been suggested.

1.213 The likelihood is that the benefits of Option 1a would outweigh the modest costs.

[77] The content of the warranty would have to include safety features of the vehicle.

[78] FEMA (2010) "Position statement on periodical technical inspections / road worthiness testing"

Table Error! No text of specified style in document..**13: Summary table Option 1a**

Main costs	**€ million p.a.**	**Main benefits**	**€ million p.a.**
Peer reviews and screening	0.2 – 0.3		0-100
Research	2-3		0-100
PR campaigns	1-2		0-75
Infraction proceedings	0.015		Not known
Other	Not known		Not known
Total p.a.	**3-6**		**0-500**

1.20. Option 2: Encourage bilateral agreements

1.214 Bilateral agreements for the testing of passenger cars are already in place between the Netherlands and Belgium; the Netherlands and Spain; and Spain and Sweden.

1.215 Under these agreements, the PTI organisations in the Member States concerned have agreed to recognise the validity of PTIs carried out in specified testing centres in the other country.

1.216 Bilateral recognition of PTIs can be implemented in a number of different ways. Either the PTI can be undertaken by inspectors from the Member State where the vehicle is registered, travelling to the country where the vehicle is located for defined periods of time each year and testing the vehicles using equipment in local garages; or the PTI can be undertaken by local inspectors, following an inspection process as agreed by the registering Member State.

1.20.1.1. Current examples:

(a) *Swedish vehicles in Spain* – Bilprovingen, the inspection organisation of Sweden, has an individual agreement with some Spanish testing locations. The idea is that Swedish inspectors come to the Swedish vehicles in Spain to offer inspection services for a few days each year.

(b) *Dutch vehicles in Belgium and Spain* – The supervising organisation for PTI services in the Netherlands (RDW) will accept the inspection in some defined cases by inspectors in Belgium and Spain from next year. The inspections are undertaken by local inspectors to the standards of the local inspection regime.

(c) A number of Nordic countries are in the process of making an agreement on the mutual recognition of test certificates, beginning with passenger cars. Under the Nordisk Vägteknisk Förbund (NVF) project, a technical committee was set up looking into vehicle design and function in order to analyse the inspection processes in the Nordic Countries. Members representing the governments of Denmark, The Faroe Islands, Finland, Iceland, Norway and Sweden took part. According to the full report

received from the committee (NVF 2:2002) the common perception among members was that a full harmonisation of national provisions was not necessary, as the present level of the national application of Directive 96/96/EC was quite sufficient to guarantee a high technical standard of vehicles in use. Since this report was issued, the testing protocols of the participating countries have converged even further.[79]

1.20.1.2. Costs

1.217 Using bilateral agreements, a country might in theory need to make up to 26 separate agreements in order to allow vehicles registered in their country to be tested anywhere in the EU. However, discussions are only likely to be pursued if there are reasons to expect worthwhile benefits, and the Nordic example shows that groups of countries might work together.

1.218 Bilateral agreements involve set-up costs – discussions must occur to reach an agreement with the partnering Member State. Potentially this is inefficient when only a few vehicles may make use of arrangements under the agreement in the end.

1.219 We understand that the set-up costs of the bilateral agreements arranged so far have been low. RDW estimates that its costs of setting up the bilateral agreement with Spain to allow tests to be undertaken there have amounted to approximately € 50,000. These costs included some travel to Spain, several internal meetings in RDW and several meetings with the Dutch government. In addition to this, the law in the Netherlands needed to be changed in order to legalise the testing of Dutch vehicles elsewhere than on Dutch soil. RDW estimated that the cost to change this law (as financed by the Dutch government) amounted to approximately between € 5,000 and € 10,000.[80] RDW now has plans in place to set up a similar bilateral agreement with Poland. The costs to themselves of arranging this and potentially other subsequent agreements were estimated at between € 20,000 and € 25,000.

1.220 A system would be required for reliable information to be provided by the MS performing the test to the MS of registration notifying that the vehicle has been inspected.

1.221 The absolute maximum number of bilateral agreements that might need to be negotiated in the EU is 702.[81] If each Member State did negotiate bilateral agreements with all other EU Member States in this way then, based on the costing as given above, the total set-up costs of these arrangements would amount to around €

[79] Utländsk Reserapport "SE input about mutual recognition of Inspection Certificates of periodical technical inspections"

[80] This seems a low cost. Its basis has not been explored.

[81] 27x26 – assuming the bilateral agreements are one-way agreements such as those already in place, so that two agreements would need to be made between each pair of Member States.

15 million.[82] In practice, however, the number of bilateral agreements put in place would probably need to be far fewer than this. As a more conservative estimate, if we assume each Member State only chooses to negotiate agreements with three others (as this is the number of agreements the Netherlands is currently looking to put in place) the total cost in the EU to set up the arrangements will then be around € 2.4 million (say, € 2-3 million).[83]

1.222 Operating costs of bilateral agreements are similarly likely to be low, although these will depend on the exact system chosen to be put in place. Potentially, the only additional costs that might occur relate to the eventuality where the MS feels it necessary to undertake its own audit check of the tests being undertaken in the foreign testing centres.

1.223 Under this policy option, there would be a one-off cost if the Commission were to produce a recommended format for bilateral agreements, to aid in the discussion between Member States. Such a paper might take an official two months to prepare, including consultations, and therefore would cost approximately € 20,000 to produce. This could be facilitated by the systems of mutual information exchange envisaged in Option 1a (an example of the sense in which the options are cumulative).

1.20.1.3. Benefits

1.224 A benefit of this approach is that tourists with vehicles stationed in one of the countries concerned would no longer face the costs of unnecessary journeys for the purpose of complying with the test regulations. For instance, under the bilateral agreement between Spain and Sweden, currently only around 1,000 Swedish cars are inspected in Spain annually, which would otherwise have to make journeys back to Sweden every year (if greater than five years of age, otherwise at three years old and five years old) for the purpose of PTI testing. Similarly, the Netherlands estimates that approximately 1,000 Dutch cars are also stationed in Spain, which are currently having to make journeys back to the Netherlands every year if older than eight years, or every two years if more than four years old.

1.225 Savings would be made in the form of a reduced number of kilometres unnecessarily travelled; leading to cost savings for some of the small number of private individuals who currently need to drive long distances to return their holiday vehicle home for PTI testing. A reduction in unnecessary kilometres travelled implies reduced road congestion, road wear and tear, air pollution and accidents.

82 (€50,000x1+€20,000x25)x27

83 (€50,000x1+€20,000x2)x27

1.226 Although only a small proportion of EU citizens are currently affected in this way, with only a small percentage of the fleet of more than 220 million passenger cars used in foreign countries, those individuals affected sometimes face substantial costs. If we look at the case of the bilateral agreements between Spain and Sweden, and Spain and the Netherlands, we can come to some estimates of potential benefits.

Table Error! No text of specified style in document..**14: Cost savings from bilateral agreement**

	Sweden	**Netherlands**
Approximate driving distance from Spain to MS and back[84]	5,000 km	3,000 km
Estimated time taken to make this journey[85]	48 hours	28 hours
Estimated number of vehicles stationed in Spain	1,000	1,000
Approximate frequency at which vehicles need to return for a PTI[86]	0.82	0.71
Total distance travelled annually by tourists in Spain for the purpose of a PTI	4,118 thousand km	2,118 thousand km
Total time spent travelling annually by tourists in Spain for the purpose of a PTI	1,647 days	824 days
Value of non-working time, per day[87]	€ 106	€ 106
Cost of travelling, per thousand km[88]	€ 371	€ 371
Estimated total-time cost of these journeys	€ 174,000	€ 87,000
Estimated total monetary cost of these journeys	€ 1,530,000	€ 785,000
TOTAL POTENTIAL COST SAVING	**€ 1,700,000**	**€ 872,000**

1.227 So an estimate of the benefits possible from a bilateral agreement between two countries can be placed at around € 1 million. If we assume that each of the 27 Member States might make agreements with three other Member States, this would

84 Source: Google maps

85 Source: Google maps

86 Estimated based on an average age at which vehicles are scrapped of 17 years – therefore Swedish cars, with an inspection frequency of 3/2/1, will take a total of 14 PTIs during their lifetime; whereas Dutch cars, with an inspection frequency of 4/2/2/1, will take a total of 12 PTIs during their lifetime. So average inspection frequencies are calculated as 14/17 and 12/17, respectively.

87 Based on the value of UK non-working time, calculated as £4.46 in 2002, adjusted to reflect the change in GDP per capita between 2002 and 2009 (multiplying the value by £28,800/£25,300) then converting to Euros at the 2009 exchange rate (0.89094) to obtain an approximate current value of non-working time in the EU of €4.40.

88 Source: http://www.theaa.com/allaboutcars/advice/advice_rcosts_petrol_table.jsp. Based on the running costs given per kilometre for new cars costing up to £12,000, converted into kilometres and then converted to Euros at the average exchange rate September 2009 – September 2010 of 1.15.

imply a total annual cost saving possible in the EU of € 81 million (say, € 75 to 100 million).

1.228 An additional benefit would be that in the course of setting up such agreements there would be opportunities for either country to point out possible weaknesses in the other system; one can imagine that this process might lead to the adoption of higher standards in some cases.

1.229 However, it is acknowledged that this would not be an EU-wide solution; in the absence of an EU-wide system of mutual recognition there would continue to be the possibility of some people and businesses facing these costs.

1.1.38. Summary of Option 2

1.230 Most of the likely costs and benefits cannot be quantified, but orders of magnitude have been suggested.

1.231 The likelihood is that the benefits of Option 2 would outweigh the modest costs.

Table Error! No text of specified style in document.**.15: Summary table Option 2**

Main costs	**€ million**	**Main benefits**	**€ million p.a.**
Set-up /negotiation costs	2-3	Reduction in unnecessary journeys	75-100
Operating costs	0.1-1 p.a.		
Total p.a.	**< 1**		**75-100**

1.21. Option 3: Mandatory mutual recognition throughout the EU

1.232 Under this option, the Commission would bring forward legislation that would require each MS to accept as valid the tests carried out in any other Member State.

1.233 This would not require the same systems or standards to be in place in every Member State; simply that the legislators accepted that standards everywhere are satisfactory for this purpose.

1.234 This would mean that the legislation governing PTIs was similar to the systems of mutual recognition of standards that are in place for most goods and services in the EU. It is commonplace for goods and services produced in one Member State to have access to the market in any part of the EU, despite differences in the methods and standards of testing.

1.235 However, in the consultations carried out for this impact assessment, a number of experts or stakeholders took the view that it would be very difficult to implement this

system for political and not technical reasons, and that before it was considered the Commission would wish to:

(a) investigate standards in each Member State;

(b) present reports on whether standards are acceptable;

(c) secure improvements to standards in an unknown number of Member States.

1.236 Because of these possible requirements, it is natural to see Option 3 as following on from Options 1a and 2. Some stakeholders indeed held the view that mandatory mutual recognition would actually only be politically feasible after a mandatory EU-wide system for PTIs and roadside testing was introduced.

1.237 Mandatory mutual recognition of PTIs throughout the EU would not need to be implemented for all categories of vehicle at once. In particular, there appears to be a reasonable case for the introduction of a single market for PTIs of trailers, perhaps accompanied by some changes to the tests applied to trailers in some Member States. This could be put in place without necessarily introducing a single market for PTIs of trucks or private vehicles as well (although LLG tests are much the same for trucks and trailers). As most roadside testing is currently undertaken on commercial vehicles, an infrastructure already exists to police the testing quality of these vehicles in different Member States.[89]

1.21.1.1. Costs

1.238 The cost of increased supervision and control mechanisms required for enforcing that minimum quality standards sufficient for mutual recognition are in place throughout the EU could be substantial. Countries already have significant issues enforcing their own national standards of testing and minimising fraudulent tests. Quality control was a concern for stakeholders at the expert workshop.

1.239 In Spain, the system in place means that PTIs are regionally administered, but Spanish roadworthiness certificates (ITV certificates) are recognised all over Spain. We understand that the Spanish experience is that private vehicle users do not travel between regions to take advantage of the lower prices charged for PTIs in some

[89] Recent cabotage regulation (REGULATION (EC) No 1072/2009) implemented in the EU has removed some restrictions on the single market in haulage, reducing the limits on transit traffic crossing EU MS areas. Before this regulation, freight vehicles were not allowed to transport goods internally in a foreign Member State. The new regulation still restricts HGVs registered in a foreign MS from doing more than three cabotage tours in a Member State with the same vehicle if they come in with freight, or only one cabotage tour in three days if they come in without freight. This new regulation will increase the likelihood of trucks staying away from their MS of registration for long periods of time, but will have minimal effect on the movement of trailers.

regions. However, some do travel to a neighbouring region in order to receive a less rigorous PTI (even at potentially higher cost) in the hope that technical defects in their vehicle are not discovered or do not need to be dealt with, and therefore repair costs can be saved.

1.240 This suggests that the average quality of PTIs taken could be lower under mutual recognition of PTIs with variable standards, if individuals take advantage of the opportunity to choose lower quality testing centres, potentially travelling long distances to pass a PTI in another country where standards are lower in order to avoid expensive repair costs. Some regions are likely to be more significantly affected by this than others; particularly highly populated border regions between Member States with substantially different testing regimes (for instance, the border between Germany and Poland). In these regions, individuals looking to choose a testing centre with less stringent PTI requirements may only have to travel a few miles.

1.241 To illustrate the point, the cost to repair a faulty anti-lock braking system may be at least €2,000.[90] Therefore, it will probably be cheaper to drive a vehicle requiring a new PTI certificate abroad for a vehicle inspection where the fault is irrelevant in order to receive a PTI certificate. This would be the case if the AntiLock braking system is not included in the list of components to be tested in one country, or if the inspection procedure for safety relevant electronic systems just involves a visual check in one country and a detailed analysis of the system by functional tests and/or by use of the diagnostic interface in the other. In this case the motorist would save some money but the average standard of vehicle roadworthiness in the EU could decrease.

1.242 However, this does not mean that such moves should be prevented; it may be better to allow a vehicle to continue to use the roads without a working anti-lock system than to require the repairs. Most vehicles do not have such anti-lock systems; and provided that the driver knows the situation (so that he does not drive harder assuming the system is in operation when it is not) it is difficult to see why he should be prevented from driving a vehicle that has a system which is not working. The same could be said of safety airbags; these are useful devices, but not compulsory, so it should not be illegal to drive with an airbag fitted but not operational.

1.243 The problem of travelling to alternative testing centres to avoid the cost of vehicle repairs has the risk of being even more pronounced for commercial vehicles, where increased flexibility is available in choosing a testing site due to the further distance travelled by commercial vehicles. If vehicles travel longer distances for their PTI in order to achieve a lower price or a lower quality test, this will produce additional

[90] Source: DEKRA

traffic on the roads near Member State borders (there is a comparable situation for traffic near borders where there is a difference in the price of fuel between two neighbouring Member States).

1.244 It is also likely that the owners of some expensive new vehicles would prefer to have the tests carried out in the most fully equipped workshops, and would therefore travel from lower-income countries to Germany, Sweden or other high cost/ high quality testing regimes. They would benefit from the fuller service for which they were willing to pay. No estimate has been attempted of the likely numbers of such cases.

1.245 We assume for the purpose of exploratory calculation that two per cent of vehicles might choose to have their vehicle tested in another Member State in order to take advantage of the difference in level of testing. There is no evidence to support this assumption; it is purely a judgement taking account of the Spanish experience. We also make the assumption that the minimum relative effectiveness level of PTIs between Member States which we assume would be acceptable within the EU to enable mutual recognition is 80 per cent. This is also a matter of judgement that cannot be supported by evidence at this stage.

1.246 In the table below, this fraction is expressed as a number of vehicles escaping the test.

Table Error! No text of specified style in document.**.16: Potential reduction in PTIs**

Vehicles in EU	301,749,500
Assumed number travelling for PTIs (2 per cent)	6,034,990
Assumed number of vehicles that might effectively receive no PTI because of this (20 per cent)	1,206,998

Source: EU energy and transport figures – Statistical pocketbook 2010

1.247 Based on the estimates from the Department for Transport study in 2008, the increase in probability of accidents from going from a high level of PTIs to no PTIs would be (all 2004 values):

Table Error! No text of specified style in document..**17: Increased probabilities of accidents**

Type of accident	Increase in number	UK vehicle stock	Increase in probability
Fatal	1,543	31,984,000	0.0048 %
Serious	9,473	31,984,000	0.0296 %
Slight	49,494	31,984,000	0.1547 %
Damage only	217,312	31,984,000	0.6794 %

1.248 Applying these probabilities to the estimated total number of vehicles in the EU which would effectively receive no PTI if mutual recognition was introduced, results in the following values:

Table Error! No text of specified style in document..**18: Value of increased accidents**

	Probability	Number	Cost per accident (€)[91]	Total cost (€)
Increase in fatal accidents going from high to no PTIs in place	0.0048 %	58	1,309,968	76,278,202
Increase in serious injury accidents going from high to no PTIs in place	0.0296 %	357	150,465	53,789,437
Increase in slight injury accidents going from high to no PTIs in place	0.1547 %	1,868	15,336	28,644,973
Increase in damage-only accidents going from high to no PTIs in place	0.6794 %	8,201	1,364	11,186,150
TOTAL				**€ 170 million**

1.249 In addition to this, if we assume that the average additional distance travelled on a journey for this purpose is 100 kilometres, taking an average time of one and a half hours, then the private cost per vehicle would be € 44.[92] he total value of additional travel cost would then be in the region of € 266 million.

1.250 If each vehicle travelling for a lower quality PTI on average drives an extra distance of 100 kilometres for this purpose, then the total extra volume of traffic on the road would be 603 million vehicle kilometres a year, increasing CO_2 emissions by around 121 million kilograms annually,[93] at a cost of approximately € 3.6 million.[94]

1.251 We stress that these figures are not based on any firm evidence, but are to explore possible orders of magnitude on stated assumptions.

91 A discussion regarding approaches to quantify the costs of accidents in the EU is included in Appendix 6: European Approaches to Monetizing the Value of Road Safety.

92 Based on an average monetary cost per kilometre of € 0.37 and a time cost of € 4.40 per hour.

93 Based on an average emission rate of CO_2 by vehicles of 200 g/km.

94 Cost per tonne of CO_2 taken as € 30 (based on the value determined for CO_2 capture and storage projects in the EU, see e.g. http://ec.europa.eu/research/energy/pdf/synopses_co2_en.pdf)

1.252 If vehicle owners chose to travel increased distances to receive a less expensive or rigorous PTI, this would be because they expected that the benefits to them would outweigh the travel and other costs. They might not take account of the externalities their decision would impose, notably:

(a) the costs to others of any increase in the risk of accidents;

(b) the costs of environmental emissions.

1.253 The question of whether PTI standards in some Member States are below the socially efficient level is therefore fundamental to the question of whether mutual recognition would be beneficial. However, we do not yet have an answer to that question.

1.254 The costs of administration, including the administrative burden in the sense used in EC impact assessments (which refers only to the costs of providing information to show that regulations have been followed) would also be significant. A system would be required for reliable information to be provided by the MS performing the test to the MS of registration, notifying that the vehicle has been inspected.

1.21.1.2. Benefits

1.255 Mutual recognition would bring direct cost savings to some individuals and businesses, and further gains as a result of increased competition for testers. All the potential single market benefits would be achieved.

1.256 Savings would be made in the form of a reduced number of kilometres unnecessarily travelled; leading to cost savings for haulage companies and to the small number of private individuals who currently drive long distances to return their holiday vehicle home for PTI testing. A reduction in unnecessary journeys also implies reduced road congestion, road wear and tear, air pollution and accidents (for the avoidance of doubt, there would be an increase in the number of journeys made to take advantage of cheaper or less rigorous testing, which might well outweigh this benefit).

1.257 In addition, time savings may be achieved in some cases. UETR[95] noted that a PTI is very often a time-consuming procedure and, in addition, many PTI stations across the EU suffer congestion, with waiting times of more than two hours quite common.[96] In particular, UPTR[97] highlighted the long waiting times in Belgium, where currently the

95 UETR is an umbrella organisation representing more than 200,000 European freight transport SMEs from Western and Eastern EU Member States associations, with a total capacity of more than 430,000 commercial vehicles.

96 Source: UETR internet consultation response.

97 UPTR represents the transport and logistics sector in Belgium

PTI association holds a national monopoly. If PTI testing is opened up to competition between MS, inefficiencies such as these may be reduced.

1.258 The European Transport Board (which represents a number of transportation and logistics companies in Europe) sent out a questionnaire to its members in 2007 to estimate the costs incurred by EU haulage companies annually because of the inability for trailers to be tested in any other Member States than that which they were registered in. The numbers extrapolated from this questionnaire indicate that around 14 per cent of trailers have to make one empty trip back to their country of registration annually for the purpose of a PTI. The cost incurred by haulage companies due to the empty kilometres travelled amounts to € 101 million.[98] In addition to this cost, empty journeys undertaken by trailers for the sole purpose of returning to the country of registration for a PTI relate to 103 million vehicle kilometres and 65 million kilograms of CO_2 emissions (at a cost of approximately € 2 million).[99] Biases in this result are likely to have occurred because the European Transport Board only represents large companies, whose vehicles travel long distances and who generally have good systems of intermediate testing in place.

1.259 Only trailers are included in the calculation because there is evidence that haulage companies would experience lower costs associated with trucks returning to their country of registration for PTIs due to these vehicles undertaking comparatively shorter rotation periods in general.[100]

1.260 This figure of 14 per cent of vehicles would equate to approximately 0.25 per cent of all runs being undertaken empty for the sole purpose of PTIs. Information held by DEKRA from German and Austrian sources indicates that the share of empty rides has been decreasing over time. In 2007, the German Industry Association (BDI) published a position paper on cabotage, in which they provided that the share of all runs being undertaken empty was 19 per cent for regional operated transports and 10

98 This is based on an estimated average distance travelled for the purpose of returning for PTI of 400km and a cost of travelling empty of € 0.98 per km (derived from ETB's survey results). Therefore each individual journey for this purpose is calculated as having an average cost of € 392. This cost is below the estimate provided by the International Road Transport Union (IRU), who questioned their members on this topic, finding that costs can come to around € 1,000 for a forced and empty return.

99 Based on 90.6 g/tonne km obtained from the European Environmental Agency

100 Although the IRU noted that trucks can sometimes be away from base for a long period, especially those active in cross trade. For example, a Dutch registered vehicle can be based for a long period of time in the South of France, working on a route travelling between Italy and Spain (which is a perfectly legal international intra-EU transport route without restrictions). The vehicle can spend several months out on the route in a row with crews being brought in and out by plane and / or working with local crews.

per cent for long distance travel.[101] Another estimate of the numbers of empty runs in Germany is given by Bundesamt für Güterverkehr, which is the regulatory authority for road transport. For the year 2006, BAG published a number of 9 per cent for empty runs in long-distance travel. Austrian data on the share of empty runs crossing the Alps gave that in transit relations the share had decreased between 1994 and 2004 from 10 per cent to 5 per cent.

1.261 We expect that European haulers undertake a quality of logistical planning comparable to German companies. Therefore, taking a middle point of these estimates, assuming the share of all empty trailer rides for European haulage companies is 9 per cent, we notice that trailers are around one and a half times more likely to be empty when returning for their PTI than for other journeys. Therefore the logistical planning to ensure trailers do not have to return home empty for their PTI is reasonably comparable, but slightly worse, than the average journey. Empty journeys for the purpose of PTIs then represent less than 3 per cent of all empty trailer journeys.[102]

1.262 For citizens living near a border between two Member States, traffic may possibly be reduced and driving costs saved if the option is given for the vehicle to have its PTI undertaken in a nearby testing centre across the border rather than a more remote centre located in the Member State of registration.

1.263 Leaseurope[103] indicated that additionally some benefits may accrue to the automotive rental industry:

> The lack of coherence in this area [mutual recognition of inspections] complicates leasing and rental vehicle movements in between Member States. The ability to allocate, utilise and ultimately sell vehicles across borders can lead to significant efficiency gains, beneficial to both drivers as well as the industry.

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101 BDI (2007) "BDI Position on the liberalisation of cabotage in Europe and on further liberalisation of cross-border haulage" http://www.bdi.eu/download_content/InfrastrukturUndLogistik/Position_paper_Cabotage.pdf

102 The calculation is based on the information obtained from the ETB about the average number of journeys per trailer per year. While smaller trailers can make 3 trips a day, the majority of trailers travel long distances where one journey takes on average 8 days. Taking these two options into consideration we assume the average number of trips per trailer per year to be 60.

103 Leaseurope brings together 45 member associations representing the leasing, long-term and/or short-term automotive rental industries in the 32 European countries in which they are present. The scope of products covered by Leaseurope members ranges from hire purchase and finance leases to operating leases for all asset categories (automotive equipment and real estate). It includes the short term rental of cars, vans and trucks. In 2009, Leaseurope members financed a fleet of 14.1 million cars, or approximately six per cent of all passenger cars in the EU.

1.1.39. Summary of Option 3

1.264 It is not certain whether the benefits of Option 3 would outweigh the costs, but they might well do so.

Table Error! No text of specified style in document**.19: Summary table Option 3**

Main costs	**€ million p.a.**	**Main benefits**	**€ million p.a.**
Increased accidents	170	Reduced travel purely for purpose of test	90-110 (adjusted ETB estimate)
Increased travel cost to test centres	266	Reduced emissions from travel savings	2
Increased emissions from travel to test centres	3.6	Reduced cost to motorists of tests and repairs not required	> 266
		Increased technical standards of testing where desired by vehicle owners	Not known
		Increased competition between test centres	Not known
		Better functioning of vehicle leasing market	Not known
Total	439.6		>358

1.265 The benefits to vehicle owners of seeking out a lower-quality PTI must exceed the increased travel cost, including the cost of their time, by a significant margin to justify their going to the trouble. The savings achieved must also exceed the motorist's own valuation of any increased risk of an accident (which would likely make up a large part of the total estimated cost of the increased probability of an accident occurring). The longer-term benefits of increased competition between testing centres and systems might complete a justification of this measure.

1.22. Option 4: Impose a mandatory EU-wide system for PTIs and roadside testing

1.266 Under Option 4, a mandatory system for PTIs and for roadside testing would be applied to every MS. It would include detailed rules governing all eight 'pillars' of a PTI system.

1.267 A good balance of all eight "pillars" of the PTI system would be desirable, as any gaps could reduce the overall effectiveness. For instance, if testing centre staff do not

possess the necessary skills to undertake PTIs then a number of other pillars are likely to be compromised, and if sufficient supervision and enforcement measures were not in place then the whole system would fail.

1.268 As explained in Section 5, the definition could be at various possible standards – we have used three, defined for the purpose of this IA by DEKRA, to help to make the issues concrete. However, it should be stressed that the detailed definition of any mandatory EU-wide system would need to be discussed in more detail than has yet been possible. The definitions suggested here are purely in an attempt to establish orders of magnitude that may help the Commission to decide which path to follow.

1.269 Under Option 4 it would not be illegal to use higher standards than those mandated; however, Member States would not be permitted to insist on their standards being followed in other Member States, since mutual recognition would be a component of Option 4.

1.270 This would be in line with the precedent set by the current regulations on type approval.[104] Member States must accept into circulation on their roads any vehicles which have satisfied the requirements of the EU type approval Directive, as certified by the Member State where the vehicle was manufactured.

1.271 Among the eight "pillars" it would seem simplest to implement a common understanding for technology-driven parts of PTIs. For the personal skills and qualifications there might be very different definitions in EU Member States; there is no common standard for the education of technicians and similar professions. Supervision and enforcement is also very complex and undertaken quite differently in different Member States.

1.272 We now summarise DEKRA's assessment of the costs that would be involved in moving all MS from low to a medium or to a high technical level of PTI testing.

1.273 In the EU there is at present a total of around 95,000 PTI test centres. This high number is due to the garages which are involved in some MS, since garages often only do a few PTIs compared with the test-only centres, which always have a high throughput per day.

1.274 From these test stations we estimate:

(a) 14% of the MS test stations are on low level 10MS = 14,000 test stations

[104] Directive 2007/46/EC of the European Parliament and of the Council of 5 September 2007; establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles

(b) 43% of the MS test stations are on medium level 12MS = 40,500 test stations

(c) 43% of the MS test stations are almost on high level 5MS = 40,500 test stations

1.275 In order to raise a station from a low level to a medium level, the following costs would be incurred.

1.1.40. Pillar 1 - Items to be inspected and method

1.276 This is one of the major issues for the differences between Member State solutions. The additional effort for lifting up the level from low to medium will lead to increased costs of staff and equipment, as well as to the time necessary to complete a test.

1.277 This has to be seen in relation to the additional equipment needed (pillar 3) and additional training needed for staff (see pillar 4). In other words, it would be double-counting to cost both Pillar 1 and Pillars 3 and 4.

1.1.41. Pillar 2 - Definition of defects and assessment of results

1.278 This will lead by an increased level of PTIs to further repair costs and effort by the car owner. We have not provided an estimate of this cost, since a repair ought to be made in any case, irrespective of the testing system. If any of the higher technical standards were not in fact justified, this assumption would lead to an under-estimate of costs.

1.1.42. Pillar 3 - Investment for lifting from low level to medium level

1.279 The main costs would be:

(a) € 10,000 for new shock-tester equipment;

(b) € 8,000 for a modern roller-brake tester;

(c) € 4,000 for equipment for testing modern electronic devices.

Total of € 22,000

1.280 Depreciating these costs over five to ten years would lead to an annual cost of between € 2,200 and 4,400 a year; multiplied by 14,000 test stations will lead to aggregate costs of between € 31 and € 62 million p.a

1.1.43. Pillar 4 - Skills and applications of staff

1.281 For this improvement an increased income for staff because of a higher grade of education should be assumed, as well as the direct training costs.

1.282 We assume an increase of approximately 20 per cent in labour costs. We would assume 28,000 testers for the 14,000 test stations need to be qualified.

(a) estimated staff cost / inspector:	€ 50,000 /year
(b) + 20% =	€ 10,000 /year
(c) times 28,000 inspectors	€ 280 million /year

1.1.44. Pillar 5 - Vehicle classes to be inspected

1.283 For both vehicle categories as given below no additional testing equipment is required.

1.22.5.1. Powered two wheelers category L

1.284 Eurostat gives the following numbers to registered two wheelers in the EU Member States: L_3 - 12 million vehicles, L_{12} - each approximately 13 million vehicles. Although the data are not complete for all Member States and are also a few years old, they may be used as a base level assumption for these vehicles.

1.285 In most Member States the test for L_3 vehicles is already mandatory. The cost implications for making the test mandatory can be estimated as about € 100 million for all Member States assuming € 20 per test every two years:

Total cost: € 50 million/year.[105]

1.286 Training for a qualification for testing powered two-wheelers can be seen as an additional cost but not significant.

1.22.5.2. Light trailer O_2 0.75 to 3.5 tons

1.287 Today in 21 Member States testing of light trailers is already mandatory. The UK, France, Portugal, Netherlands, Denmark, and Malta do not see any justification for a mandatory inspection for light trailers.

1.288 A calculation for the whole EU gives an approximation of about 4.5 million additional trailers to be tested every two years, therefore an average of 2.25 million trailers a year at an average cost of € 35 a test, amounting to a total extra cost of € 80 million a year.

[105] This is consistent with an estimate given by the Commission:
take the number of all registered two wheelers: about 33 Mio
average price for PTI: 20€
total: 657Mio €

1.1.45. Pillar 6 - Test frequencies for PTIs

1.289 To increase test frequencies from low (4-2-2) to medium (3-2-2) it can easily be seen that for new vehicles the first inspection and each subsequent inspection would be one year earlier. In Member States with 4-2-2 the cost for PTIs would increase by seven per cent over the lifetime of the vehicles (17 years) to switch to 3-2-2.

1.290 About half of the vehicles are in Member States where PTIs starts in year four. This is the situation for 100 million vehicles.

- 17 years is the average period of use before scrapping
- 17 years by a 4-2-2 scheme: 7.5 inspections
- 17 years by a 3-2-2 scheme: 8 inspections

1.291 This is half an inspection more over 17 years, so an average of 1/34 extra inspections a year, for 100 million vehicles. At an average inspection price of € 50, this comes to € 147 million per year.

1.1.46. Pillar 7 - Supervision of inspection scheme and enforcement of the system

1.292 Looking at the solutions implemented by Member States already on a medium quality level, average costs can be estimated of € 0.70 per year and vehicle for the effort of quality insurance and other measures of the involved PTI organisations as well as the governmental authorities. So the maximal additional cost a Member State may be subject to can be seen as € 0.70 if - more or less - no supervision or enforcement of the system exists today. In most of the Member States defined as low quality a minimum amount of supervision might be in force, so the additional cost can rather be estimated as € 0.30 per year and vehicle.

1.293 (We can give no more details; this is an expert guess by DEKRA and is not supported by data.)

1.1.47. Pillar 8 - Data exchange

1.294 CENTIQ estimates that increased spending on data exchange for both operational and strategic planning purposes would cost approximately € 8 million per year. Details are given in Appendix 4 and later in this section.

Estimated costs to lift all Member States at least to medium level

1.295 Taking into account which Member States are currently implementing a low level of PTIs and their number of inspection stations, we can make an overall estimation for the additional costs which would be required to bring these Member States to a

medium level of PTIs. If we exclude the position taken to supervision by each Member State - which is more or less dependent on each authority's inside evaluation – we have sufficient information to construct an estimate for reaching a medium level of PTIs in all Member States. By summing up the rough estimations, we have for low to medium additional costs of € 604 million per year. This is made up of:

(a) € 47 million for Pillar 3

(b) € 280 million for Pillar 4

(c) € 130 million for Pillar 5 (L and O)

(d) € 147 million for Pillar 6 (3-2-2)

1.296 We now give the corresponding estimates for lifting all Member states to the highest level described.

1.1.48. Pillar 3 Investment for lifting from medium to high level

1.297 The costs would be:

(a) € 2,000 for enhanced equipment for testing

(b) € 5,000 for enhanced emission testing

(c) € 8,000 load simulation for brake testing for 10,000 truck test stations.[106]

1.298 Estimating € 7,000 for 54,000 stations the cost would be € 378 million. € 8,000 for 10,000 stations would cost € 80 million. Adding these one-off costs and depreciating over 10 years would give an annual cost of € 45.8 million.

1.1.49. Pillar 4 Skills and applications of staff

1.299 From medium to high level of staff qualification again an increase of expenses by 10% is estimated. The cost per inspector, including on-costs as well as wages, might be € 60,000 p.a.[107] With 100,000 inspectors,[108] a 10 per cent increase would cost € 600 million p.a.

1.1.50. Pillar 6 Frequency of PTIs

1.300 More than half of all MS have already a yearly PTI for older vehicles. For the rest, about 100 Mio vehicles average 17 years' lifetime before scrapping. With five

106 Source: Estimation by DEKRA based on the overall number of test stations in Member States
107 Source: Estimation by DEKRA
108 Source: Estimation by DEKRA

additional inspections before scrapping and an average inspection price of € 50 the cost would be (€ 250 /17 years =) € 14.71 /year and car.

1.301 This gives an estimate of € 1,471 million p.a. in additional cost.

1.23. Estimated costs to lift all MS to HIGH level

1.302 In sum the cost to lift PTIs in the EU from medium to high level is calculated as € 2,117 million:

- Pillar 3 € 46 million
- Pillar 4 € 600 million
- Pillar 6 € 1,471 million

1.24. Summary

1.303 Summarising this estimated cost gives a first impression for the relation between the defined (but not always in reality existing) levels in the Member States. In fact in some cases a mixture of levels in Member States can be seen (high level in technology but low level at staff qualification).

1.304 It may also be seen as a toolbox, where the individual components can be arranged to make the most effective and best case solution. It also has to be mentioned, that it would be obvious to switch to a medium (+) level first, rather than going directly to the high level.

1.305 In general, a large component of the total cost of moving up the levels relates to staff training and wage increases rather than to equipment costs. Costs for additional equipment moving from low to medium level amounted to only 8 per cent of the total costs, and moving from medium to high level this cost only represented 2 per cent overall.

1.24.1.1. Benefits

1.306 The benefits from Option 4 would depend on the standards imposed. Assuming these were at medium or higher levels, the benefits should include a reduction in the numbers of unsafe vehicles and hence in road accidents. Since Option 4 would include mandatory mutual recognition, some single market benefits would also be obtained. However, these benefits would be reduced to the extent that under Option 4 the scope for vehicle owners to make savings by travelling to lower-cost testing centres was reduced.

1.307 Evidence in support of the view that higher standards would be beneficial includes:

(a) The AUTOFORE report, which recommended an increased minimum frequency of testing.

(b) A study undertaken by the UK Department for Transport in 2008 found through random compliance surveys that currently some 10 per cent of all cars on the road have a significant defect of some description, and are therefore not roadworthy. Based on the fact that at the time 36 per cent of all cars were failing their MOT test each year, potentially the percentage of defective cars on the road would increase to 42 per cent the first year after testing was stopped, an increase of some 400 per cent on the total number of unroadworthy cars on the road. The study estimated that if testing were to be stopped altogether, there would be something like an 800 per cent increase in the number of unroadworthy vehicles once a 'steady-state' had been reached. These calculations assumed no behavioural responses, on the grounds that they are unknown.

(c) Work by Professor Schultz, reported to the experts' workshop (see Appendix 1), which concluded that German frequency rates of PTI should be increased for older vehicles.

1.308 However, a study by Christensen and Elvik (2007)[109] put the safety benefit of PTI regimes of cars into question. The study looked at the effects on accidents of periodic motor vehicle inspection in Norway, by investigating the impact of a substantial change in the programme for PTIs in Norway in 1995. Negative binomial regression models were fitted to data on accidents and inspections supplied by a major insurance company and by the Norwegian Public Roads Administration. The study came to the following conclusions:

(a) technical defects in cars are associated with a small, but statistically significant increase in accident rate;

(b) periodic inspections lead to the repair of technical defects;

(c) following periodic inspections, the accident rate of inspected cars does not decline, but shows a weak tendency to increase.

1.309 To explain this apparently inconsistent result, they consider potential behavioural adaptations of risk compensation amongst car owners to the introduction of PTIs:

> When a car is inspected, and owners are forced to repair at least the most serious technical defects, behavioural adaptation may occur because owners now think that cars have become safer than before. This hypothesis is speculation only; no data are available to test it. Yet, the combination of selective requirement of unsafe drivers to poor

[109] Christensen, Peter and Elvik, Rune (2007) "Effects on accidents of periodic motor vehicle inspection in Norway" *Accident Analysis and Prevention* 39:47-52

cars and behavioural adaption following technical inspection may explain the apparently inconsistent findings of the study.

1.310 A study by Poitras and Sutter (2002)[110] in the US similarly found that PTIs were a poor instrument for achieving policy goals. They analysed the impact of PTIs on old cars in use and on repair industry revenue between 1953-1967 and found that inspection had no significant impact on either, which implies that the presence of a PTI regime does not lead to an overall improvement in the mechanical condition of vehicles, as this would involve costs which are not realised. They took the reason for this to be that either drivers were already voluntarily providing the efficient level of maintenance when considering only private benefits (i.e. the maintenance externality might be infra-marginal), or that PTIs were poorly enforced or unenforceable, so that vehicles were generally approved without meeting the requirements. Their method ruled out the possibility of interpreting the results as showing that drivers of mechanically inferior vehicles might compensate by driving more cautiously.

1.311 However, we have little information about the situation with regard to the 'pillars' other than frequency of testing; and no information about the situation in those MS whose systems would need most investment to bring them up to the DEKRA medium standard (DEKRA estimates that about 25 per cent of MS currently fall significantly short of those standards).

1.312 A more standardised approach to roadside testing might facilitate some policy analysis, but is not required for operational or any other purposes.

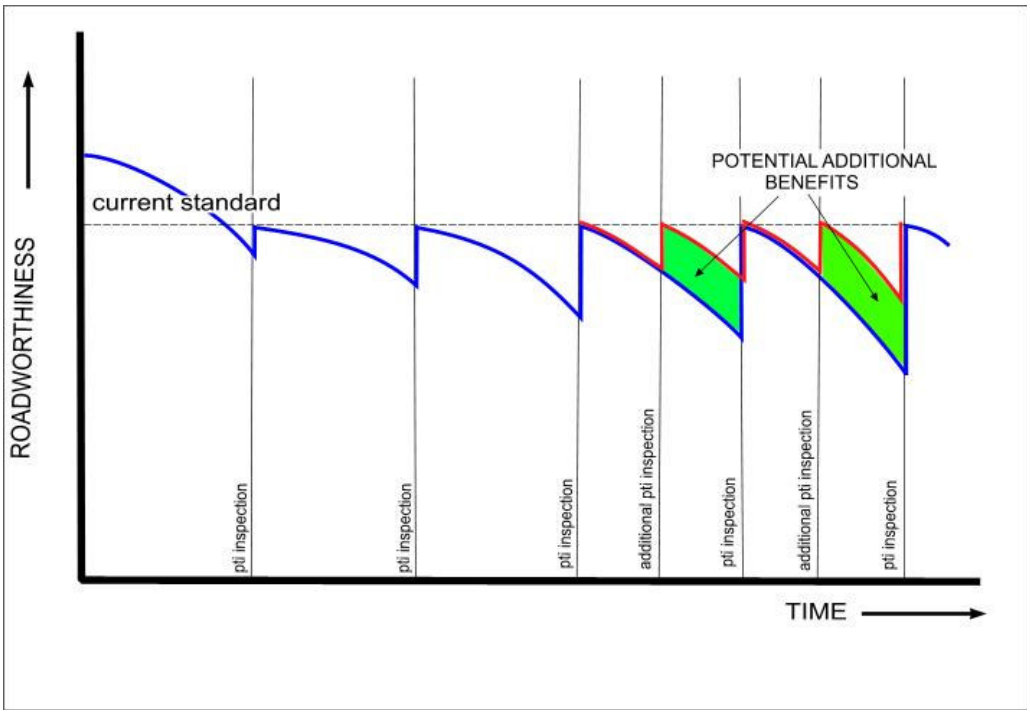
1.313 We now review more evidence as to the likely benefits from different components of Option 4. The picture available is very far from complete.

1.24.1.2. Frequency of Tests

1.314 The effect of increasing the frequency of PTIs is shown in the figure below.

[110] Poitras, Marc and Sutter, Daniel (2002) "Policy ineffectiveness or offsetting behaviour? An analysis of vehicle safety inspections" *Southern Economic Journal* 68(4):922-934

Figure Error! No text of specified style in document..**6: Benefits of increasing PTI frequency**



Source: CITA (2007) "AUTOFORE Report: Study on the Future Options for Roadworthiness Enforcement in the European Union"

1.315 As well as providing additional safety benefits, increasing the frequency of PTIs may also provide some cost savings. This is because defects, if left undetected for a period of time, can go on to cause secondary defects which cost the motorist significantly more to repair e.g. faulty steering components causing tyre wear or worn brake pads causing damage to discs.[111]

1.316 In the AUTOFORE study undertaken in 2007[112] the finding was that, based on cost-benefit analysis of different PTI frequencies in Germany, the optimal system involved a testing frequency of 3-2-2-1 (up from the current system of 3-2-2). The total benefits achievable from this change were calculated as € 2.1 billion across the EU, or € 59 per additional inspected car. In comparison, the costs of the additional test were calculated as amounting to a total of € 1.3 billion, estimated using an average cost-unit rate for passenger car inspections of € 35 (without any taxes).

1.317 Similarly, a study undertaken by the UK Department of Transport (DfT), in 2008,[113] determined that the optimal system was to continue their frequency of testing at 3-1-1,

111 Consultation response from the Chief Executive of a major business involved in MOT testing, UK.

112 CITA (2007) "AUTOFORE Study on the Future Options for Roadworthiness Enforcement in the European Union: WP700 – Roadworthiness testing evaluation"

113 Department of Transport (2008) "MOT Scheme Evidence-base"

rather than reduce the frequency to 4-2-2, 4-2-1 or 4-1-1. The key road safety conclusions the study came to were (mid-range estimates):

(a) moving to a frequency of 4-2-2 would risk an additional 408 road deaths per year[114] (this would represent an 18 per cent increase over the record low of 2,222 deaths recorded in 2009[115]); and

(b) moving to a frequency of 4-2-2 would risk an additional 2,504 serious injuries per year.[116]

1.318 The estimated incremental annual cost to society of the move to a PTI frequency of 4-2-2 was calculated as follows:

Table Error! No text of specified style in document.**.20: Incremental costs of increased PTI frequency**

Incremental road deaths and injuries	€ 1,718 million (DfT)
Incremental air pollution	€ 1 million (DfT)
Incremental enforcement costs	€ 15 million (DfT)
Less motorist annual MOT cost saving	- € 626 million (DfT)
Less motorist annual MOT personal time saving	- € 89 million (DfT)
Net cost on median scenario	**€ 1,020 million**

Note: Original costings were given in pounds sterling – these have been converted to Euros at the average exchange rate September 2009 – September 2010 of 1.15

1.319 In addition, a frequency of 4-2-2 would mean a significant loss of VAT/tax revenues due to reduced repair/parts sales. A reduction in jobs would also be seen in the PTI industry, at an estimated cost of € 552 million (trade estimate – cost of 40,000 lost jobs, or 40 per cent of the current workforce at € 13,800 per head).

1.320 A stakeholder noted that since this review had been completed the MOT failure rate in the UK has actually increased – from 33 per cent in 2006/2007 to 37 per cent in 2009/2010 – and that due to economic reasons, motorists are currently buying fewer new vehicles and reducing servicing/repairs on existing vehicles.

1.321 There is therefore some evidence that, at least in the higher-income Member States of the EU, the frequency prescribed in the current directive is below the optimal level.

114 Low estimate 177 additional deaths per year, high estimate 523 additional deaths per year.

115 Department of Transport (2010) "Reported Road Casualties Great Britain Main Results: 2009" Accessed: http://www.dft.gov.uk/pgr/statistics/datatablespublications/accidents/casualtiesmr/rrcgbmainresults2009

116 Low estimate 1,088 additional serious injuries per year, high estimate 3,210 additional serious injuries per year.

Both these frequency recommendations correspond to somewhere between the medium and high frequency levels as described in options 4b and 4c.

1.322 A recent review of the PTI frequency in the Netherlands led to the decision to reduce the frequency of PTI required, from 3-1-1 to 4-2-2-1 in January 2008.[117] Vehicles running on LPG or diesel are still required to undergo PTIs at the 3-1-1 schedule, since these vehicles tend to have a higher annual mileage than vehicles with petrol engines.

1.323 In 2004, Sweden reduced the frequency of PTIs required for the vehicles showing the best testing results and least mileage: motorcycles, trailers and caravans. Before 2004, the first test was conducted after two years and then every year for vehicles aged ten years or more, now the first PTI is done after four years and subsequently every second year. Since this reduction in PTI frequency, the PTI performance of these vehicles has seen the following trend:

Table Error! No text of specified style in document.**.21: PTI failure rates for different vehicle categories in Sweden, 2001-2009**

Year	Motorcycles	Trailers	Caravans	Cars
2001	8%	19%	13%	34%
2002	8%	19%	14%	33%
2003	8%	17%	16%	33%
2004	**9%**	**19%**	**16%**	**32%**
2005	9%	22%	17%	32%
2006	10%	26%	22%	32%
2007	10%	26%	19%	32%
2008	10%	26%	22%	30%
2009	10%	26%	17%	29%

Source: Statistics from Bilprovningen, Sweden

1.324 As PTI testing frequencies currently in place across the EU are at different levels, any new level of minimum frequency required will only affect some EU countries (as the others already test to this frequency or above). The table below lists the countries that would be affected if a new minimum frequency was set at one of the patterns discussed above.

[117] SWOV Institute for Road Safety Research (2009) "SWOV Fact sheet: Periodic Vehicle Inspection for cars (MOT)" Leidschendam, the Netherlands

Table Error! No text of specified style in document..**22: Countries which would be affected if the frequency of PTI was changed to different levels**

Testing frequency:	**4-2-2-1**	**3-2-2-1**	**3-1-1**
Source of recommendation:	Netherlands	AUTOFORE	UK
Countries affected:	Denmark	Belgium	Belgium
	Germany	Denmark	Denmark
	Greece	Germany	Germany
	France	Greece	Greece
	Ireland	Spain	Spain
	Italy	France	France
	Czech Republic	Ireland	Ireland
	Estonia	Italy	Italy
	Hungary	Portugal	Austria
	Lithuania	Netherlands	Portugal
		Czech Republic	Netherlands
		Estonia	Finland
		Hungary	Sweden
		Lithuania	Czech Republic
			Estonia
			Hungary
			Lithuania
			Poland

1.24.1.3. Technology and Procedures

1.325 Few studies have been carried out on the cost benefit analysis of including the inspection of additional components in PTIs. One exception to this is a 2006 study by Baum and Grawenhoff on "Cost benefit analysis of the Electronic Stability Program (ESP)".[118] This study found that the yearly benefits of ESP-penetration of cars in EU-25 in 2006 were € 10 billion. Under the assumption that seven per cent of ESP will not function properly, € 0.7 billion benefits were not being reached. On average in the EU-25, 41 per cent of vehicles are inspected each year. The additional inspection of ESP led to an assumed detection ratio of 80 per cent (based on empirical findings in Germany). Therefore the total EU benefits of the additional inspection of ESP are calculated as € 230 million. Conversely, the total EU costs of the additional inspection of ESP are calculated as € 87.1 million. So the benefit-cost ratio for the additional testing of ESP, as included in option 4c, is 2.6.

[118] Baum, H, Grawenhoff, F (2006) "Cost-Benefit-Analysis of the Electronic Stability Program (ESP)" Cologne

1.326 A study done by Rompe and Carlitz (2003)[119] found that new electronic systems have failure rates of about one failure per million operating hours. However, each vehicle will have many such electronic systems installed. Looking specifically at ABS faults they found that, although the mean percentage of M1-vehicles which had recorded trouble codes related to ABS disturbances / faults in their CPU was 17 per cent, this goes up to 57 per cent for vehicles aged five to eight years.[120]

1.327 Electronically controlled safety systems (ECS) are becoming increasingly prevalent in modern vehicles and therefore are an area of interest for the expansion of the technological requirements for PTIs. A number of studies have investigated which ECSs have a high safety performance and are cost-effective, and thus are potential targets for PTI inclusion.

[119] Rompe, Klaus and Carlitz, Andreas (2003) "Periodical Inspection of Electronically Controlled Systems on Vehicles: Report on the CITA WG VII Research Project" Future Technical Vehicle Inspection in Europe, 4th Aachen Workshop, 16.01.2003, http://ika.rwth-aachen.de/forschung/veroeffentilichung/2003/16.01/VdTUEV_Folien_en.pdf

[120] Note that these results were obtained from a small sample size, with 148 cars tested in total and only seven falling into the 5-8 years category.

Table Error! No text of specified style in document.**.23: Electronically controlled safety systems evaluated as cost-effective by different studies**

eIMPACT[121]	eSafety[122]	ADVISORS[123]
Electronic Stability Control	Electronic Stability Control	Interurban Adaptive Cruise Control (ACC)
Full Speed Range	Active Cruise Control with Emergency Brake	Urban ACC with Stop & Go
Emergency Braking	Blind Spot Monitoring	Lateral Support System
Pre-Crash Protection of Vulnerable Road Users	Brake Assist	Driver Monitoring System
Lane Changing Assist	Adaptive Headlights	Board Computer in Trucks
Lane Keeping Support	eCall	Lane Warning and Collision Warning System
NightVisionWarn	Obstacle and Collision Warning	Variable Speed Limiter
Driver Drowsiness Monitor and Warning	Advance Hazard Warning	
ECall	Lane Departure Warning	
Intersection Safety	Seat Belt Reminders	
Wireless Local Danger Warning		
Speed Alert		

1.328 Germany has made the inspection of ECS within a PTI mandatory for all vehicles registered since 1 April 2006. Up to a total of 43 different functions of ECS[124] are required to be tested if they are safety critical. However, as these functions are generally clustered, usually less than 6 ECS will be subject to a PTI for any one vehicle.

121 TNO – Organisation for Applied Scientific Research (2008) "eIMPACT Assessing the Impacts of Intelligent Vehicle Safety Systems"

122 SafetyNet (2009) eSafety Project, co-financed by the European Commission, Directorate-General Transport and Energy

123 SWOV Institute for Road Safety Research, Dr. Marion Wiethoff (2003) "ADVISORS – Action for advanced driver assistance and vehicle control systems Implementation, Standardisation, Optimum use of the Road network and Safety"

124 active head-restraint, active bonnet, active steering, adaptive cruise control, adaptive headlights, adaptive stop lamps, airbag / belt tensioner, anti lock brake, auto hold, automatic emergency brake, automatic headlight activation, brake assist system, car and trailer train stability programme, cornering light, countersteer support, emergency braking signal, electro mechanic brake system, electric power steering, electronic brake system, electronic differential lock, electronic four-wheel steering , electronic parking brake, electronic stabilisation programme, electronic steered rear axle, electronic steering damper, headlamp self-levelling system, high-beam assistant, hill descent control, lane changing assist interfering with steering system , lane keeping assist interfering with braking system, lane keeping assist interfering with steering system, lighting redundancy (front) , lighting redundancy (rear), preventive safety systems, retarder, roll stability programme, roll over protection (active), self-levelling air suspension, soft hold, speed limiter, start-up aid, trailer stability programme and traction control

1.329 Electronic components are typically characterised by significant "infant mortality" followed by a low failure rate during the intended lifetime of the component, then an increase in failure rate once the end of the intended life is reached. Depending on the type of component and the electronic parts manufacturer, electronic components are often partly pre-aged to avoid "Infant Mortalities" after the component has already been installed in a vehicle. Therefore, end-of-lifetime failures are the most important consideration for PTIs of electronic components.

1.330 The European Garage Equipment Association (EGEA)[125] noted that often a visual check of some safety components is not sufficient. For example, when checking ABS valves, the malfunction indicator lamp (MIL) might be off but in reality the ABS values may still not be working properly. In their response to the public consultation they provided a detailed recommendation for an inspection procedure to check relevant safety systems. They noted that in practice it is not possible to check the functionality of driver assistance systems like ABS, ESC and brake assistance under simulated conditions of these systems during PTIs. It is, however, technically feasible, depending on the availability of the appropriate equipment, to check the efficiency and plausibility of the results from the involved sensors.

1.24.1.4. Vehicle Categories Covered

Category L

1.331 The number of motorcycles in circulation in the EU has increased significantly in the last ten years. Between 2001 and 2008 the number grew from 16 million to more than 22 million; a growth of around 38 per cent. Taking all types of two-wheeled motor vehicles into account,[126] a total of approximately 33 million powered two-wheelers (PTWs) were in circulation in 2008.

1.332 Motorcycles are currently by far the most dangerous means of transport. In 2008, the number of recorded fatalities amongst motorcyclists was 5,126 (EU-24)[127] or around 14 per cent of the total number of accidents recorded in these 24 Member States. This is to be contrasted to the fact that PTWs account for just two per cent of all road users

125 The EGEA heads 12 national professional associations, who represent the interests of both manufacturers and importers of garage and test equipment.

126 Vehicle category L includes all motor vehicles with less than four wheels. Mopeds come under sub-category L_1: two-wheeled vehicles with a maximum design speed not exceeding 50 km/hour, and motorcycles come under sub-category L_3: two-wheeled vehicles with a design speed exceeding 50 km/hour. Categories L_2, L_4 and L_5 relate to three-wheeled vehicles and motorcycles with sidecars.

127 Source: CARE database. Data is not provided for Bulgaria, Cyprus or Lithuania.

(2006 survey)[128] or 10 per cent of road vehicles. In a number of countries the total of fatally injured motorcyclists has been rising over the last ten years.

1.333 For the categories of vehicles representing vulnerable road users, namely motorcycles and mopeds (category L), the part of the cost of accidents which falls on individuals other than the driver or owner is lower than that for other vehicles. Therefore it is less likely that owners of these vehicles will maintain their vehicles to a level that is socially sub-optimal, meaning a level below that which best reflects the possible costs to both the drivers / owners and to others who might be affected by an accident. Although the safety costs of maintaining their vehicle in good condition mainly fall on PTW drivers, costs relating to emissions and excess noise from these vehicles still fall on others. So the arguments for periodic emissions testing of PTWs are the same as for other vehicle categories, albeit needing to be adjusted to take into account the smaller quantities of pollution produced by a PTW.

1.334 The Federation of European Motorcyclists' Associations (FEMA) provided the following statement with regard to the differences between owners of PTWs and other vehicles:

> Users of PTWs are well aware of the need to maintain their machines in a safe condition. […] A motorcyclist has a closer relationship to his vehicle and the majority perform basic vehicle maintenance by themselves. Checking the PTW is easier in comparison to cars since all the safety related parts are usually easy to access.
>
> Being a vulnerable road user, it is always in the interests of the motorcyclist to reduce any possible risk of accident, as he would be the first one to suffer.

1.335 For those vehicle owners who are maintaining their vehicle regularly by themselves or having them regularly checked by a private garage as part of a guarantee, PTI regimes would predominantly be just an administrative burden.

1.336 In the 2010 DEKRA report,[129] the results of 700 motorcycles tested following an accident were reported. The report found that 8 per cent of vehicles involved in the examined accidents had defects "of relevance to the accident". This is similar in level to that found for cars. From the available data, the assumption is that in a large number of cases tyres were likely to blame (either the tread depth was too shallow, the tyres were defective or the tyre pressure was too low). For PTWs, tyre pressure and tyre condition have a direct impact on riding conditions and therefore in theory need to be checked constantly. In the cases where the vehicle owner checks these regularly

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128 Source: DEKRA (2010) "Motorcycle road safety report 2010: Strategies for preventing accidents on the roads of Europe"

129 DEKRA (2010) "Motorcycle Road Safety Report 2010: Strategies for preventing accidents on the roads of Europe"

themselves or is quick to respond to any perceived deterioration by submitting the vehicle for repair (as it likely to be necessary to continue riding) the benefits of PTIs in checking these features is likely to be minimal. The position provided by FEMA[130] was that many other technical failures of PTWs also require instant action, and therefore a reliance on regular annual or bi-annual inspection is misleading.

1.337 In addition, a study was undertaken by the European Association of Motorcycle Manufacturers (ACEM) in 2009[131] providing an in-depth investigation of accidents involving PTWs. This study examined a sample of 921 accidents with PTW involvement in 5 EU MS. In a total of 3 cases (0.3 per cent) vehicle failures which were to blame as the "primary accident contributing factor" were reported.

1.338 However, the demographics of PTW users is changing. Increasingly PTWs (in particular scooters) are being used as a cheap and fast mobility option for urban transport, especially by young people or the lower social classes, rather than being used to ride for pleasure. This growing group of users is assumed to be less knowledgeable and to take much less care in maintaining their vehicle, often due to price sensitivity to the costs of running a PTW.

1.339 The AUTOFORE study[132] provided the following with regard to the testing of motorcycles for safety purposes, bringing out the differences between the two groups of users:

> In North-European countries like Germany and the Netherlands (possibly the UK) and the Nordic countries, motorcycles are mainly used for recreational purposes. They tend to belong to the upper market ranges. Generally they are well maintained, and are replaced at a relatively young age. Periodic inspection may not add much to the safety of such vehicles, which was also the view expressed in an interview with a leading Dutch motorcycle magazine.
>
> In south-European countries motorcycles are much more the usual means of transport for either young people or the lower social classes. The bikes are smaller and less expensive. They may not be replaced so quickly either. Further information would be needed concerning maintenance standards. PTI[s] may well have more benefits in such countries, but actual data would be needed for such conclusions.

1.340 The high price sensitivity assumed for urban PTW users means that the additional cost of running a PTW that would occur if PTIs were introduced for this vehicle class might mean many users at the margin have to give up their PTW.

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130 FEMA (2010) "Position statement on periodical technical inspections / road worthiness testing"

131 MAIDS (2009) "In-depth investigation of accidents involving powered two-wheelers: Version 2.0"

132 CITA (2007) "AUTOFORE Study on the Future Options for Roadworthiness Enforcement in the European Union: WP700 – Roadworthiness testing evaluation"

1.341 A shortage of data has inhibited the undertaking of a full economic analysis to quantify the magnitude of the benefits of extending Directive 2009/40/EC to include two-wheeler vehicles, including preventing any analysis of how this benefit has changed in line with the evolving demographics of PTW drivers. Accident evidence on the current costs is not sufficient on its own to justify the inclusion of PTWs in the Directive, due to the high proportion of these costs which are private (this proportion has not been calculated as far as we are aware).

Category O_2:

1.342 In all EU countries heavy trailers (weight exceeding 3.5 tonnes – classes O_3 and O_4) are covered by mandatory PTIs because of the large risk they pose to other road users in the case of acquiring a technical defect. However, EU law does not require that lighter trailers (weight less than 3.5 tonnes) must be covered by PTIs. Currently O_2 vehicles (trailers with a maximum mass exceeding 0.75 tonnes, but not exceeding 3.5 tonnes) are not subject to PTIs in France, Portugal, Netherlands, the UK, Denmark or Malta. The vehicle class O_2 typically contains caravan trailers for private use as well as transportation trailers, and trailers with working machines for professional use.

1.343 Based on the 2009 data of DEKRA trailer inspections in Germany (which recorded the results of the tests for more than one million trailers) a lower share of O_2 trailers were found to have serious defects (11 per cent) than was the case for O_3 or O_4 trailers (19 per cent). Compared to all trailers, O_2 trailers showed higher than average numbers of defects in the attachment parts and chassis, but lower than average numbers of defects in brakes and steering.[133]

Category M_1 – in commercial use:

1.344 A lot of M_1 vehicles are registered by companies and not by private owners. For roadworthiness purposes the question is whether these vehicles do run under more straining conditions than the M1 vehicles in general. On the one hand a lot of these vehicles are used in a similar way to privately owned vehicles, for travelling between home and office and some additional journeys across the country for business or personal use. On the other hand, some M_1 vehicles registered for business use do have a very different profile of use compared to privately owned vehicles. They may run to building sites, fully loaded and on badly prepared country lanes, or drive high mileages with or without load.

1.345 M_1 vehicles with very high mileage can be seen as comparable to taxis, which are definitely in business use and for which additional requirements to PTI are already given by the EU. In this case a definition of "vehicles registered for business use" +

[133] 2009 data of DEKRA trailer inspections in Germany, data by KBA.

"high mileage (e.g. more than 40,000 km/year)" can be used to define a class of vehicles for special focus in roadworthiness for adapted frequencies of inspection.

1.346 Inspection results show that the average rate of defects in the vehicles increases in relation to the mileage travelled yearly, from about 14.8 per cent of defects (including 4.4 per cent of serious defects) up to 31.1 per cent of defects (including 10.7 per cent of serious defects) for the vehicles in the highest mileage class. The results for the vehicles in the highest mileage class (> 40,000 km/year) can be seen as nearly similar to the results for taxis. In fact the average mileage for vehicles in this vehicle class is about 66,810 km/year, which is also close to the result for taxis with about 58,000 km/year. The number of vehicles with a yearly mileage over 40,000 km is about four times the number of taxis inspected during the same period.

1.347 While the criteria for "vehicle registered for business use" can be handled in most cases by use of vehicle documents or in some Member States by use of a direct data connection in PTIs, the use of the additional mileage criteria is new. As this is not standard in the EU, this information needs to be integrated into the vehicle inspection procedure and reporting. In addition it requires a different kind of signing for the control of vehicles, because a sticker on the license plate or the windshield with the date to next inspection is no longer useful. A solution using wireless communication may be feasible at some stage in the future. Odometer-based measures also have to take care of fraud related to odometers, which is already a problem in the used-car market. In Belgium, the mileage is currently used as one indicator for the PTI–frequency of M_1 vehicles.

1.348 The share of M_1 vehicles (taxis already excluded) with very high mileage and up to 6 years of age in all vehicles is 1.22 per cent. Therefore, the combination of the criteria "registered for business use" and "very high mileage" would result in additional inspections for 1.22 per cent of all vehicles in Germany. It can be expected that the share of vehicles in business use might be lower in other Member States. So as an overall assumption about 1 per cent of the M_1 vehicles would be subject to an additional high-mileage based inspection for M_1 vehicles in commercial use.

Agricultural vehicles

1.349 According to the UPTR[134] and UETR[135] the road haulage business has been suffering from unlawful competition from agricultural vehicles for a number of years. Modern agricultural tractors have much higher maximum speeds than in the past, leading to

134 UPTR represents the transport and logistics sector in Belgium

135 UETR is an umbrella organisation representing more than 200,000 European freight transport SMEs from Western and Eastern EU Member States associations, with a total capacity of more than 430,000 commercial vehicles.

this increase in competitiveness versus trucks. However, agricultural vehicles are currently still exempt in a large part from EU provisions. Their conviction was that these vehicles should be made subject to PTIs in order to make them less attractive for unlawful road transportation.

Historic vehicles

1.350 The characteristics and use patterns of historic vehicles[136] are different to other vehicles and therefore potentially merit different testing regimes. The current legislation (2009/40/EC) includes the provision for MS, after consultation with the Commission, to set their own testing standards for vehicles considered to be of historic interest.

1.24.1.5. Structural effects

1.351 There are a number of structural effects that changes to PTI regulation may cause. For instance, if PTI requirements are increased, more defects are likely to be discovered on vehicles, and therefore repair costs may increase, in particular for older vehicles. Because of this, the decision may be made to retire old vehicles earlier, as the costs of maintaining roadworthiness become prohibitive earlier on. This would lead to a decrease in the average age of vehicles on the road, and therefore, on average, vehicles would benefit from more up-to-date safety technology. This would increase the costs to vehicle owners of owning a vehicle, but improve road safety and increase the market for new vehicles.

1.1.51. Summary of Option 4

1.352 It is uncertain whether the benefits of any version of Option 4 would outweigh the costs.

1.353 We assume little cost in implementing Option 4a, since this was conceived as broadly the present lower technical level of PTI. The benefits of Option 4a would be similar to those of mutual recognition at present levels of testing.

1.354 In order to move all Member States to level 4b, the orders of magnitude of annual cost are given below (capital or one-off set-up costs having been amortised as explained in the text).

[136] Currently defined as those manufactured before 1 January 1960 in Directive 2009/40/EC, Article 4.2.

Table Error! No text of specified style in document..**24: Implementing option 4b**

Pillar	Cost € million p.a.	Benefits
1 Items inspected	Covered in headings below	
2 Definitions of faults	Covered in headings below	
3 Equipment	31-62	No studies done
4 Staff	280	No studies done
5 Vehicles covered	130	No studies done
6 Frequency	208	Positive in rich countries
7 Supervision	Not known	Not known
8 Data[137]	8	Likely to be positive
Total	**>657**	**Not known – no studies done**

1.355 These costs would all fall on those Member States which have up to now opted to implement a cheaper and less rigorous system of PTI than defined by us as medium quality.

1.356 The following table summarises the costs of moving to Option 4c. They would fall on all Member States except those already operating the most technically rigorous forms of PTI.

Table Error! No text of specified style in document..**25: Implementing option 4c**

Pillar	Cost € million p.a.	Benefits
1 Items inspected	Covered in headings below	
2 Definitions of faults	Covered in headings below	
3 Equipment	46	No studies done
4 Staff	600	No studies done
5 Vehicles covered	-	No studies done
6 Frequency	833	Significantly positive in rich countries
7 Supervision	Not known	Not known
8 Data[138]	8	Likely to be positive
Total	**1,487**	**Not known – no studies done**

1.25. Option 5: Deregulation at EU level

1.357 This option was discarded as being politically unrealistic in view of the recently adopted EC policy orientation.

[137] See following section
[138] See following section

1.358 Assessments of the value of roadworthiness testing have shown positive impacts, and therefore deregulation at EU level would come at an overall cost to the EU.

1.26. Information exchange

1.359 Information sharing is an integral part of all policy options described; the monitoring of a policy choice is only effective when data to support or counteract the argument are available. The level, value and necessity of information sharing will vary depending on the policy option taken forward by the Commission.

1.360 A distinction needs to be made between:

(a) Those uses that are for strategic reporting that, whilst not generally time critical, need very large data volumes to be processed.

(b) Those uses that are operational in nature and require rapid access to records of specific vehicles.

1.361 All of the policy options would benefit from enhanced data exchange, and some would require enhancements as part of the deployment.

1.362 Whilst this is not the place for an in-depth technical design, which is a separate phase of EU policy-making, it is important, as part of this economic impact assessment is to give expected costs associated with such a systems delivery. In order to facilitate improved testing standards an analysis was made of options for the best placement of information; whether this should be centralised, distributed, or joined via interconnected data links through the Member State systems. This also allows for indicative architecture costs to be presented. Architectural Options are presented in Appendix 3: .

1.363 The final element covers the costs and benefits and where these are qualified and quantified. Costs covered would include set-up costs and ongoing costs, and the administrative burden costs to validate the system and monitor and support service level agreements. These are highlighted below and laid out in more detail within Appendix 3: .

1.364 A questionnaire was sent to the Member State organisations to determine the current position and infrastructure of the existing information systems pertaining to periodic testing. Where it was shown that a Member State had one or more main contractors providing the service the questionnaire was distributed to these organisations.

1.365 At the time of the Stakeholder meeting a total of five Member States had submitted input to the main questionnaire, with an additional two states providing answers to the

subset questions. Following a final request at the Stakeholder meeting a further four states provided input.

1.366 Results show that whilst there is some consistency of applications across the Member States, omissions of what would be deemed critical fields are common as shown below.

Table Error! No text of specified style in document.**.26: Data systems in place**

VIN	Recorded level 100%
Registration plate	Recorded level 91%
Engine type	Recorded level 100% except hybrids with 1 stated omission
Engine euro class	Recorded level 82%
Mileage / odometer reading	Recorded level 82%
Failures	Recorded level 100% (yet may not be consistent recording)
Failure details	Recorded level 82% and not consistent
Date of first registration	Recorded level 100%

Source: Questionnaire responses from Member State organisations

1.367 The following aims and justification for a central information exchange were provided. More detailed information on the aims, benefits and comments is in Appendix 3: .

Table Error! No text of specified style in document..**27: Aims and justification for a central information exchange**

AIM	Aim description	Type	LEVEL of testing integration required	Ability to execute across Member States	Expected benefits and quantified value statement
A1	CO2 emissions and mileage analysis	Strategic reporting	All	Partial – full conformity of 2010/48/EU will facilitate	
A2	Vehicle demographics	Strategic reporting	All	Partial – full conformity of 2010/48/EU will facilitate	
A3	Consumer advice 1. Fault prevalence	Strategic reporting	From level 2, Optimum 3 +	Limited – requires standardisation of information	
A4	Roadside test authorities	Operational report	From Level 1, Optimum at level 3+	Strong on limited data fields	
A5	Consumer advice 2 anti-fraud	Operational report	From Level 1, Optimum at level 3+	Partial delivery by Member States in place	
A6	Type approval visibility within PTI test operation	Operational processing	From Level 1, Optimum at level 3+	Requires new-type approval systems to be introduced	**0.5% reduction in road deaths p.a.**
A7	Anti – Corruption, Fraudulent and Inaccurate pass rate reduction	Operational and strategic reporting	From Level 1	Partial – full conformity of 2010/48/EU will facilitate	
A8	Information for those carrying out PTIs	Operational report	all	Requires clearer definition of information value.	
The following aims were also suggested; however, these are deemed to be closely linked to, or subsets of, aims presented above or are out of scope for this report					
A9	Easiness of the work of independent garages and parts manufacturers	Operational report			
A10	Police / agency vehicle checks	Operational reporting			
A11	Vehicle recalls	Operational			

1.368 The main anticipated costs to introduce information exchange services based on currently available information are estimates within a range of +/- 25% and are in addition to existing Member States' IT budgets.

1.369 CENTIQ estimates that an EU central Strategic Reporting System would take some five years to completion, and cost approximately € 5 million (or an annual average over its life of € 1 million).

1.370 A distributed operational (minimal) information exchange to support policy options 3 and 4 would take five years to complete and cost approximately € 36.4 million (an annual average of approximately € 7 million).

1.371 In combination, therefore, the additional costs of enhanced data exchange which would support all policy options would be approximately € 8 million p.a.

7 COMPARISON OF OPTIONS

1.27. PTI

1.372 Under Option 1 (continuation of existing policies) the system would continue to improve, and it is possible that more Member States may decide to implement bilateral agreements for mutual recognition. However, the full potential single market benefits could not be achieved, and scope for faster progress in reducing road accidents might be missed. By definition, costs and benefits of Option 1 are zero.

1.373 Option 1a offers potentially very cost-effective improvements. Improving road safety in a cost-effective manner is an objective likely to be supported by all concerned, and the scope for system improvements as a result of policy analysis facilitated by the Commission seems substantial; at little cost. However, there is no guarantee that all single market issues would be solved in this way.

1.374 Option 2 addresses the single market issues directly, but on a partial basis. It is likely to be inexpensive; and to reduce the scale of the single market issues while not offering a complete solution. We see no reason not to pursue Option 2 as an increment to Option 1.

1.375 Option 3 is more problematic at this stage, since although it would solve all single market issues it carries some risk of lower road-safety standards. It is quite possible that the benefits of Option 3 would exceed these costs.

1.376 Option 4 would take the EU into new regulatory territory, as the present legislation does not address all of the eight “pillars” by which an ideal PTI system might be defined. Research into optimal frequency levels has suggested that there is a case for increasing these, in some high-income countries, but in current and prospective difficult economic circumstances it would be important to be quite sure that the

additional costs would be justified for lower-income Member States in particular. We have found no adequate research into the social costs and benefits of other "pillars".

1.377 The options form a natural progression, in the sense that by pursuing Options 1a and 2 more information would become available that might inform a decision on Options 3 (mutual recognition) and 4 (imposition of more detailed technical standards at EU level).

1.28. Roadside testing

1.378 We see no adequate justification for the EU to specify details of roadside testing systems, since these can safely be left for decision by Member States. Policy initiatives in this area would fail the 'EU added value' test in impact assessments.

1.379 In particular, where a system is reasonably new (as is the case for roadside testing) there are likely to be considerable advantages of having more than one system being trialled, in order to discover the most beneficial solution. The natural experimentation currently being undertaken across different EU Member States will help provide important evidence to direct the future research required to determine the case for EU-wide legislation standardising roadside testing procedures.

1.29. Data

1.380 Under any option, it would be advantageous to facilitate exchange of data between Member States (although not all of those replying to the on-line consultation thought that this should be done).

1.30. Option summary

Table Error! No text of specified style in document..**28: Summary of costs and benefits of policy options**

Policy option	Annual cost (€ million)	Annual benefit (€ million)	Emerging conclusion
Option 1a			
Peer reviews and screening	0.2 – 0.3	0-100	Benefits are greater than costs
Research	2-3	0-100	Benefits are greater than costs
PR campaigns	1-2	0-75	Benefits are greater than costs
Infraction proceedings	0.015	Not known	Benefits are greater than costs
Other	Not known	Not known	Benefits are greater than costs
Option 2	0.5-1.6[139]	75-100	Benefits are greater than costs
Option 3	440	>368 + single market benefits	Initial impact uncertain, but likely to be beneficial in the long run due to single market improvements
Option 4b	673 + supervision costs	Not known	
Pillar 3 - equipment	31-62 (say, 47)	No studies done	Further in-depth studies required for individual items of equipment
Pillar 4 - staff	280	No studies done	Further in-depth study required
Pillar 5 - vehicles covered	130	No studies done	Further in-depth study required
Pillar 6 - frequency	208	Positive in rich countries	Benefits are greater than costs for rich countries, unclear for poor countries
Pillar 7 - supervision	Not known	Not known	Further in-depth study required
Pillar 8 - data	8	Likely to be positive throughout EU	Benefits are likely to be greater than costs
Option 4c	1,487 + supervision costs	Not known	
Pillar 3	46	No studies done	Further in-depth studies required for individual items of equipment
Pillar 4	600	No studies done	Further in-depth study required
Pillar 5	-	No studies done	Further in-depth study required
Pillar 6	833	Significantly positive in rich countries	Benefits may be greater than costs for rich countries, unlikely for poor countries
Pillar 7	Not known	Not known	Further in-depth study required
Pillar 8	8	Likely to be positive throughout EU	Benefits are likely to be greater than costs

[139] Set up costs are included in this value, depreciated over five years.

APPENDIX 1: EXPERT WORKSHOP

Attendance List

Organisation	Name
ACEA (European Automobile Manufacturers' Association)	Dolf Lamerigts
ACEM (The Motorcycle Industry in Europe)	Antonio Perlot
Belgium Ministry Transport	Michel Loccufier
Centiq	Alastair Williams
CITA (International Motor Vehicle Inspection Committee)	Eduard Fernandez
CLEPA (European Association of Automotive Suppliers)	Pierre Laurent
DEKRA	Hans-Juergen Maeurer
DEKRA Representation Brussels	Oliver Deiters
Estonian Road Administration	Karmo Uusmaa
ETRMA (European Type & Rubber Manufacturers Association)	F. Cinaralp
Europe Economics	Helen Gardner
Europe Economics	Dermot Glynn
FEMA (The Federation of European Motorcyclists' Associations)	Philip Vogt
FEMA (The Federation of European Motorcyclists' Associations)	Aline Delhaye
FIA European Bureau	Wilfried Klanner
Fresenius University	Dr. Schulz, Wolfgang
FSD (on behalf of BMVBS)	Jorg van Calker
GOCA (Belgium)	Johan Cobbaut
ITS (Poland)	Filip Skibinski
Ministry of Transport	Cathy Bieth
DG MOVE A3	Jan Sculczyk
DG MOVE B4	Michael Schwarz
DG MOVE D3	Paola Cielo
DG MOVE D3	Walter Nissler
RDW (Netherlands)	Hens Peeters Weem
RDW (Netherlands)	Henk Bussink
RDW Holland	Jan Klene
Road Traffic Safety Directorate	Juris Puntaks
SNCT Luxembourg	Camille Gonderinger
TDT (Transportation Technical Supervision Poland)	Jan Bozewicz
Trafi (Finnish Transport Safety Agency)	Erik Asplund
Transport Malta	Lino Abela

Morning Session

1.31. The Policy Context and DG MOVE Objectives

1.31.1.1. Walter Nissler (Unit D3 – Road Safety)

A1.1 2011-2020 policy has now been approved by the Commission.

A1.2 Need to guarantee roads in market are kept to certain conditions.

A1.3 New vehicle features are not in the scope of the inspection procedure given in the current directive.

A1.4 The number of accidents caused by technical defects is a small percentage but still represents a large total number of accidents.

A1.5 The ultimate aim is a harmonised system to allow there to be a single market of vehicles / PTIs across the EU.

A1.6 Currently, according to an ECJ judgement, countries are allowed to ask individuals to re-test their car before it can be registered in the new country.

A1.7 Insufficient data are currently being collected to be able to make use of EU models.

1.32. Social and Economic Benefits of Road Safety

1.32.1.1. Professor Schultz

A1.8 The study calculated the full costs of changing the frequency of PTIs (analysis only on periodicity, not on individual PTI components) and the benefits in terms of a reduction in accidents and congestion.

A1.9 Possible structural effects of changes to PTI regulation:

(a) effect on vehicle stock;

(b) petrol-diesel price relation.

A1.10 Noted that the value of QALYs is dependent on GDP. The value of life used in the study was the official EU value.

A1.11 They found using cost benefit analysis that the system should be changed from the current system of 3-2-2 frequency to a 3-2-2-1 frequency.

A1.12 The study did not take account of the time costs amounting to individuals from the requirement to take their cars to be tested more frequently. Professor Schultz noted that there may not be an overall productivity loss from this – due to the counteracting effect of increased employment in garages etc.

A1.13 Sensitivity analysis on the data was completed.

1.33. Single Market Aspects

1.33.1.1. Peter Sijs (EU Transport Board)

A1.14 From their experience, the increased testing frequencies have had no impact on the number of defects found (potentially as companies have high standards for more frequent, intermediate testing anyway).

A1.15 Within the EU different countries currently have:

(c) various test protocols;

(d) admin differences;

(e) in / out sourcing testing models.

A1.16 Mr Sijs felt that of these three, the administration differences would cause most problems in trying to move to mutual recognition, due to national habits acquired.

A1.17 Mr Sijs was in favour of EU registration, noting that this would help the market for parts sales as one example. He pointed out the inconsistency whereby vehicles are allowed to drive all over the EU if registered with any EU country, but yet countries do not accept each others' tests for cars registered with them.

A1.18 Mr Sijs felt that the most simple solution would involve the arrangement whereby, whatever country you were in at the time your vehicle needed its PTI, you could just take the test there (e.g. if in Germany, take the German test!). He did concede that potentially it might be prudent to restrict the frequency of non-local tests, for instance needing to take a test in the country of registration at least every second PTI.

A1.19 There is no potential issue of drivers shopping across borders to achieve testing costs savings, due to the high transport costs which would be involved, negating any possible savings. For instance, trucks would never drive to Germany from the Netherlands to achieve testing cost savings, as costs of around €100 would be incurred in order to drive there.

A1.20 The EU Transport Board sent a questionnaire round to their 18 members in 2007, receiving 12 replies. In this questionnaire they asked members how many times vehicles in their fleet have to go back to their country of origin empty, just for the purpose of undertaking a PTI.

A1.21 14 per cent of trailers were found to have had to make an empty trip back to their country of registration for the purpose of their PTI.

A1.22 Biases in the results are likely to occur because the EU Transport Board only represents large companies, whose vehicles travel long distances and who generally have good systems of intermediate testing in place.

A1.23 They found that the majority of empty mileage was run by trailers, not trucks. Trailers are generally rotated in triangles, with one rotation taking between 8 days and 1 month. Therefore, sometimes the case occurs whereby trailers end up being called up for testing during the period in which they are outside the country.

A1.24 The result obtained seemed high in light of the fact that one might expect large haulage firms to be particularly good at logistical planning. The comment was made that potentially companies may have already made significant improvements to the 14 per cent figure since 2007, after having had the costs highlighted to them by the previous survey.

1.34. Discussion

A1.25 20 per cent of accidents due to technical defects are from tyre defects. However, currently PTIs do not check tyre pressure / homologation effect (exceptions are in France and Holland, where type pressure is checked). Tyre condition has efficiency effects and safety effects.

A1.26 Tyres and lights are the most important technical defects that occur – you do not need highly trained mechanics to test these. Therefore, PTIs are almost irrelevant in this respect. However, a lot of people are not checking their vehicles at all, as there is no policing of this.

A1.27 We may need to consider seriously the benefits of PTIs in its role as an awareness tool. Potentially we may not be able to escape from some sort of PTI system.

A1.28 Spain has completed a study looking at the impact their scheme has had on road deaths, for which the estimated figure is that more than 4,000 deaths were saved in 2006. The study includes data regarding airbags.

A1.29 A Danish study which involved a questionnaire of Danish Parliament (AUTOFORE) found that one in five vehicles were not using type-approved tyres.

A1.30 In Spain, PTIs were recently introduced for mopeds.

A1.31 There was some conflict regarding how easy it is to implement changes to technical PTI requirements – Mr Sijs felt this would be relatively easy, and that the administration requirements are the difficult change to make, whereas DEKRA noted that it would be likely to take at least a month just to settle upon any changes to the testing requirements of brakes.

A1.32 Problem of quality control of testing – countries see a movement of vehicles towards certain testing sites where the testing quality is low. Therefore the issue exists of how to be sure that the actual quality of inspection undertaken is up to the required standards.

A1.33 Roadside inspections have brought to light disastrous statistics. For instance, trucks may have passed a PTI in their own country very recently, but RSI testers have had to stop them in another country soon after for safety reasons. Therefore, it is very important to find a way to ensure the quality of inspections and inspectors.

Afternoon Session

1.35. Group Discussion – Data systems

1.35.1.1. Moderator: Alastair Williams (Centiq)

A1.34 AW: In order for it to be worth collecting, information has to have value against what we are trying to achieve.

A1.35 There are three potential levels of data systems for roadworthiness in the EU:

(a) government level;

(b) consumer level – no interaction with the system except to see what is already there (e.g. look at old PTI results), entry of data is done centrally;

(c) decentralised level – 1,000s of testing centres etc. entering data into the system.

A1.36 Others: similar work has been undertaken in Geneva – where a database on car registrations has been implemented.

A1.37 In Denmark, the feeling was that currently some information necessary for the inspection of vehicles is unavailable. Improvements could be achieved if more history of the vehicle was included in the information available e.g. PTI dates, past accident occurrences and rehabilitation procedures, plus any modifications made to the vehicle. At the moment, the only data available is the information included on the document each car is given at the time of leaving the production factory (i.e. just how the vehicle was originally manufactured and not any information on alterations made since). The feeling is that people see value in having available the whole history of the vehicle, rather than just information on the PTIs which have been undertaken on it.

A1.38 AW: Important distinction between what data are necessary for inspections and what data are useful for society.

A1.39 Others: Currently instances occur where people have difficulties registering their vehicle in another country due to modifications having been made since production. This trouble would not exist if a more comprehensive history of the car was recorded. In order to

register modified vehicles the country may require that an individual vehicle type approval is undertaken, which costs €3,000.

A1.40 Others: The opinion was voiced that RSIs are the key to ensuring standards are kept up across the EU – data need to be available on the condition of vehicles from other Member States in order to ensure standards.

A1.41 AW: It was noted that, in relation to the levels of data collected, in order to improve accident management more information than currently collected would be useful, and in order to provide useful data to insurance companies and the police even more data would be needed.

A1.42 Others: The information needed for a RSI is only very high level and minimal e.g. for an individual vehicle, the only questions requiring answers are:

(a) Did the vehicle recently pass a PTI?

(b) Did the vehicle recently pass a RSI in another country?

(c) Is the vehicle stolen?

(d) ID for the vehicle

(e) Vehicle type

A1.43 In addition, linked information on the characteristics of each vehicle type would be needed.

A1.44 Participants felt that roadside inspectors could target vehicles for RSI more easily if they had specific driver / vehicle information available to them in order to allow them to form an estimation of whether or not the vehicle was likely to be faulty.

A1.45 A problem with RSI results currently is that different languages are used for reports across the EU – so even if access to another country's reports was made available, this may not necessarily be of use to inspectors.

A1.46 A point of agreement was that it would be useful to have EU level co-ordination on the collection of vehicle type information, as currently research on this ends up being duplicated.

1.36. Summary from Group Discussion on Potential Impacts of Changes to PTIs

1.36.1.1. Dermot Glynn (Europe Economics)

A1.47 In depth studies on this have been done in Sweden and a few other countries.

A1.48 It is felt that an awareness campaign would be useful to highlight the advantages of PTIs.

A1.49 A medium standard of PTI across the EU came out as the most popular option.

1.37. Costs of Standardisation – the Case of RDW in the Netherlands

1.37.1.1. Hens Peeters Weem (RDW, Netherlands)

A1.50 RDW is part of the Ministry of Transport in Netherlands. It performs registration administrative tasks and oversees PTIs in the Netherlands.

A1.51 If a car is registered in the Netherlands, then the owner receives a fine automatically in the case that an inspection is done late, and there is 100 per cent enforcement of this.

A1.52 Because of these strict rules, vehicle owners submitted complaints to RDW with regard to the inconvenience of the requirements in the case that a vehicle registered in the Netherlands was permanently situated abroad. Most complaints submitted to RDW were of this nature. In response to these complaints, RDW has opened up a number of sites in other countries, initially in Belgium. People in Belgium could then connect to RDW to say that the vehicle is ready for inspection.

A1.53 RDW now has several inspection stations available in Spain. Dutch cars can be taken to these testing sites and tested under Spanish PTI (the Netherlands does not have an estimate for the number of cars being tested in this way at the moment). The Netherlands has satisfied itself that Spanish PTI requirements are up to their required standards.

A1.54 When a Dutch car completes a PTI at a Spanish centre, the testers are able to record details of faults (and details of failed cars) on the RDW website. The same design of RDW website is used as in the Netherlands, with the only difference being that the site is translated into Spanish. The costs involved in putting together this system of allowing tests in Spain were low. In addition, Spanish testing centres are required to pay a €3.25 charge to RDW for each car tested and a €90 yearly charge to be allowed to test Dutch cars – through these charges the system pays for itself.

A1.55 Later this year, the Netherlands is to adopt the additional measure of changing their legislation in order to legally allow tests to take place in another country. Potentially the Netherlands will further expand their bilateral agreements to additional countries when legislation requirements have been implemented.

A1.56 The PTI quality control requirements undertaken in the Netherlands are not imposed upon the foreign testing centres, e.g. the Netherlands does not requires either BE or ES to undertake random checks on 3 per cent of tested vehicles, as is required in the Netherlands.

A1.57 The RDW website includes the facility whereby anyone can freely access each vehicle's PTI information (a new field recording the distance travelled by each vehicle is planned to be added in 1-2 years' time). RDW is the only entity that has permission to alter data contained on the website, with the exception of the information on car sale date – which

the seller can input themselves. The Dutch system is all automated such that no paper is needed.

A1.58 Similar agreements with Spain to that which exists with the Netherlands are also in place with Sweden and France. The French system arose due to the demand for residents in the south of France to cross the border into Spain to undertake their PTI, because of the low population density in the area. The model in France is different from the Dutch model, with France hiring out facilities in Spain and sending inspectors to these locations, instead of allowing French tests to be undertaken by Spanish testers. Currently, around 1,000 Swedish cars per year are inspected in Spain.

1.38. Costs of Standardisation – Presentation by Applus, Spain

1.38.1.1. Eduardo Fernandez Ardevo (Applus, Spain)

A1.59 It was felt that some level of database co-ordination in the EU was needed, else there would be a continuation of the current situation whereby there is unnecessary replication of effort and the available data are not made as much use of as possible. A potential search facility was suggested to link up national data.

A1.60 At the moment, the procedure to allow different types of tyres etc. is very different in different Member States. The systems could be sufficiently improved if information was readily available across the EU on whether a particular modification was safe. In addition, currently data from vehicle manufacturers are provided in a standard format.

A1.61 The production of such a database is already a CITA recommendation, as was first given a number of years ago.

A1.62 A couple of EU databases on vehicles do already exist. National registration authorities in 18 Member States already co-ordinate in order to track number plates as they cross country borders. Data on accident information, BIN number etc. is contained in this database. Potentially this set of information could be improved to also include PTI information, although this would involve a significant increase in the data flow through the database system. However, when the topic of a common EU database was discussed by the registration authority group they rejected the idea on the basis that currently they each have individual database systems in place to collect national data, using which they can then inject the appropriate information into the connected database. The compilation of additional data variables between the Member States would therefore require them to alter / standardise each of their national database systems.

A1.63 The present situation with regard to another EU database system has evolved in two steps. Initially sharing was arranged on a voluntary basis between Member States. On the back of this, the Prüm treaty was implemented. The Prüm treaty is currently agreed by 10 EU Member States and will apply to all Member States from next year. This treaty is limited to purposes related to crime (stolen vehicles, driving license fraud etc.).

A1.64 A system linking national driving license databases is required to be set up by 2013.

1.39. Group Discussion - Mutual Recognition

1.39.1.1. Moderator: Dermot Glynn (Europe Economics)

A1.65 Enforced mutual recognition of roadworthiness currently exists between all EU Member States in that vehicles are allowed to travel freely between countries.

A1.66 To change the country of registration of a vehicle, ECJ precedent dictates that you cannot require vehicles to take an "additional" roadworthiness test, but in practice you can ask for the vehicle to undertake a test before registration if the new country has a different testing procedure.

A1.67 Differing frequencies of PTI across countries is an issue for the spread of mutual recognition.

A1.68 The largest issue identified by participants, which is holding back the acceptance of mutual recognition between countries, is the difficulties currently encountered with regard to the quality control of vehicle testing. The feeling was that in order to allow complete mutual recognition a system of quality control would need to exist – as at the moment there are areas where quality control is not currently sufficient. Spain, for instance, noted that on a national level they already found it difficult to control the quality of testing, and that was when dealing with only a small number of large manufacturers. Apprehension was therefore expressed regarding the ability to ensure quality when dealing with 1,000s of vehicle inspectors.

A1.69 Voluntary bilateral agreements give countries a useful way of ensuring that foreign tests are of sufficient quality, as they are able to threaten to remove the agreement if standards are inadequate. In addition, when bilateral deals are set up, there is the opportunity for these deals to be negotiated to include a requirement to increase testing standards.

A1.70 However, bilateral agreements are not a perfect system. A country has to put individual agreements in place with each of up to 26 Member States, of which each agreement may only cover maybe 500-1,000 cars tested each year.

A1.71 Country representatives expressed interest in the EC providing a suggested format(s) around which countries could then negotiate bilateral agreements. The ES-NL and ES-SE bilateral arrangements are already very different from each other, and some level of standardisation of bilateral agreements could be helpful. The ES-SE arrangement has been agreed by an individual Swedish company, for instance, instead of as part of a government initiative. If guidelines were provided by the EC this was envisaged as helping to encourage the implementation of mutual agreements between Member States – as it would potentially reduce the amount of work required in order to set up these agreements. Would it be possible to annex to the existing directive the kind of guideline needed?

A1.72 The opinion was that a medium level of PTI across all Member States would provide the right conditions to allow the implementation of EU mutual recognition of PTI testing. From the study by CITA, the conclusion had been reached that full harmonisation of PTI was not necessary, as tests in other countries were already sufficient. However, despite this, mutual recognition had not been triggered.

A1.73 A note was made that the threat of sanction in the case of insufficient quality testing by one Member State under full harmonisation was already provided for in EU legislation. However, there was the feeling that insufficient statistics are currently collected in RSI to allow the EU to detect incompliant Member States sufficiently quickly.

1.40. Summary from Group Discussion on Potential Cost Impacts of PTI

1.40.1.1. Walter Nissler (DG MOVE)

A1.74 Cost drivers identified:

(a) Equipment

- dependent on the existing system in place in a Member State e.g. whether there are small / large garages;
- the basic equipment used in PTIs is the same across the EU, as the same producers of inspection lanes are used by all countries (with just the software switched to the individual Member State's specifications);
- training.

(b) Administration (€3.25 charge per car, €90 yearly charge per testing centre – current charges used by NL in ES)

A1.75 Consensus reached by participants on the level of PTI testing that would give the best balance of cost / benefits was medium+ level (a level somewhere between medium and high).

A1.76 In response to this, one participant commented that, as the current average level of testing in the EU is already supposed to be medium, will a requirement for all countries to have at least a medium PTI level give any improvements?

APPENDIX 2: STAKEHOLDERS' MEETING

Attendance List

Organisation	Name
ACEA (European Automobile Manufacturers' Association)	Heiner Hunold
ACEA (European Automobile Manufacturers' Association)	Dolf Lamerigts
ACEM (The Motorcycle Industry in Europe)	Antonio Perlot
CITA (International Motor Vehicle Inspection Committee)	Wim Labro
CSDD (Latvia Road Traffic Safety Department)	Juris Puntaks
Danish Transport Authority	Victor Hollnagel
DEKRA	Oliver Deiters
DEKRA Automobil	Hans-Juergen Mäurer
DEKRA Vertretung bei des EU	Anne-Charlotte Mazet
EC DG MOVE A3	Jan Szulczyk
EC DG MOVE D3	Isabelle Kardacz
EC DG MOVE D3	Paola Cielo
EC DG MOVE D3	Walter Nissler
ECG (Association of European Vehicle Logistics)	Lola Uña Cardenas
EGEA (European Garage Equipment Association)	Sylvia Gotzen
EGEA ASA (Germany)	Frank Beaujean
Estonian Road Administration	Karmo Uusmaa
ETRMA (European Type & Rubber Manufacturers Association)	Jarmo Sunnari
Europe Economics	Helen Gardner
Europe Economics	Dermot Glynn
FEMA (The Federation of European Motorcyclists' Associations)	Philip Vogt
FIA EB	Frederic Melchior
FSD / German BMVBS	Jörg Van Calker
IRU (International Road Transport Union)	Marc Billiet
Ministère des transports (France)	Cathy Bieth
RDW (Netherlands)	Paul Eijssen
SNCT (La Société Nationale de Contrôle Technique)	Arsène Hoffmann
TDT (Transportation Technical Supervision Poland)	Jan Bozewicz
TÜV SÜD	Günter Heim
VdTÜV	Hans-Joachim Voss

Morning Session

Opening and introduction

1.40.1.2. Ms. I Kardacz (Head of Unit D3 – Road Safety)

(a) Objective number four of the EC's communication "Towards a European road safety area: policy orientations on road safety 2011-2020" is for "Safer vehicles".

(b) After being placed on the road, vehicles should maintain their safety standards throughout their lifetime.

(c) The ultimate objective is to achieve mutual recognition of vehicle inspections between Member States.

Policy options under consideration: initial outline

1.40.1.3. Dermot Glynn (Europe Economics)

A2.1 Questions raised by stakeholders on policy options:

(d) 1a – Will technical standards as required in 2004/EC be raised?

(e) 4 – Will registration also be standardised?

A standardised EU system of PTI and roadside testing

1.40.1.4. Hans-Juergen Maurer (DEKRA)

(a) Some companies in the EU require an extra eight months of PTI training after gaining a vehicle qualification before being allowed to undertake PTIs.

(b) Three different solutions are currently in force for the market structure of PTI testing stations:

- private e.g. DE, UK;
- governmental;
- garage.

A2.2 The *Tyre and Rubber Association* pointed out that 70 per cent of road accidents are from tyre-related problems yet only two Member States currently specifically check tyre pressure (one of which only recently implemented this check). This is surprising given that maintaining the correct tyre pressure is what keeps you on the road. However, someone else noted that some countries do measure tyre pressure as this is required to undertake suspension tests. Regardless, it was pointed out that checking tyre pressure every 2-3 years is not really a suitable frequency and that rather a tyre pressure

monitoring system would be ideal – but it would be time-consuming / expensive. This was countered by the point that a once-per-year check would still make a step change in the number of accidents.

A2.3 Regarding roadside inspections, methods for the pre-selection of vehicles make RSI pass rates incomparable and there are different approaches to RSI in practice across Member States.

1.41. Discussion

A2.4 *Motorcycle Industry in Europe (ACEM)* – The need to use a variable geometry approach – each element of the proposal should be assessed separately? Response: Each element under the five fingers would have to be assessed individually.

A2.5 *CITA* – Regarding mutual recognition, they saw there being a major risk if no standard is required across the EU – the danger of people choosing a testing centre so as to avoid the discovery of faults on their vehicle.

A2.6 *FEMA* – Under option 3 the consumer also might go to another country to have testing there – is this a problem of the user / testing company?

A2.7 *CITA* – Would prefer to be on the safe side. Need a good quality assurance scheme and therefore it would be useful to all work on the same level. They recognised the conceptual attractiveness of giving the consumer the power to make their own decision over who to go to for their PTI, but felt that the relevant bodies needed to take responsibility for the (potentially harmful) decisions made.

A2.8 *FEMA* – It was noted that we need to ensure we are not equating high/low PTI requirements automatically as good/bad, we need to find the most beneficial level of PTI. (*Europe Economics*) – our objective will always be to find the optimal level)

A2.9 *DG MOVE* – Standardised frequencies would be needed for mutual recognition.

A2.10 *IRU* – Creating a harmonisation of test procedures is important across Member States. At the moment outcomes of tests differ, which makes it harder to compare certificates across countries. Commercial vehicles are often away from their Member State of registration and it can cost up to €1,500-€2,000 to send a vehicle home for a PTI.

A2.11 In regard to RSIs, due to lack of co-ordination between Member States a vehicle can end up being tested more than once a day if it travels between two countries. A vehicle can have a certificate showing that it passed an RSI in one Member State in the morning, 300km earlier, but the second station it is stopped by will not accept the certificate and require that another RSI is undertaken.

A2.12 Whether or not a vehicle ends up returning empty for a PTI depends on planning. Sometimes it is possible to plan a trip back home to coincide with the timing of a PTI – and in this case the vehicle will do so.

A2.13 *ETRMA* – It was noted that mutual recognition was a free-movement goal and single-market goal but not an accident goal. It was questioned whether a high level of PTI testing would be sufficient – it was felt that if this did not include a tyre-pressure check then it would still not be sufficient.

A2.14 *DG MOVE* – Currently 50-60 per cent of questions received in the EC DG MOVE mailbox are related to re-registration of vehicles. It seems odd that there is a single market for people but not a single market for cars at the moment. DG MOVE would like to see there become a single market for cars.

A2.15 *Ministère des transports (France)* – They are in favour of a harmonised system. They feel the only solution is a high level of PTI with good quality control. They were not sure whether it would be a good thing to reduce periodicity, but felt that the harmonisation of technical tests and people's qualifications is important. They queried where the quality control would be undertaken, noting that in France they do not think this is undertaken well in garages.

A2.16 *DEKRA* – Trailers not trucks are the ones who have issues returning for PTI (*EE* – standardising checks on trailers could be a possible early step).

A2.17 *BMVBS* – There is a type-approval problem (database). Would standardisation be set as a minimum level or would everyone be required to have the same level?

A2.18 *DG MOVE* – The timeline for implementation will depend on which option is chosen.

A2.19 *RDW* – The Spanish and Dutch authorities already have a pilot system in place for mutual recognition. In addition, a project with the Polish authorities is likely to start later this year for heavy goods vehicles, due to the large flow of these vehicles through the Netherlands. It was felt that a central database of test results would not be much use from a government perspective – databases could just be interconnected instead.

A2.20 *CSDD Latvia* – Found it hard to understand how mutual recognition would work in practice without standardisation. He queried whether it might be technically and legally impossible. (*EE* – mutual recognition would be logically possible and legally possible in relation to type approval). In his view a medium / high PTI level would be a good starting point for standardisation. In the meantime bilateral agreements would be useful.

A2.21 *DG MOVE* – Type approval ISO EU standards have been passed in this area. Therefore type approval is already standard across the EU. This standardised type approval document allows vehicles constructed in the EU to be subsequently registered in any Member State. Vehicle-use categories, however, can still differ between Member States,

with some tests being required in certain Member States in order to allow some vehicles to be used for specific purposes.

A2.22 *BMVBS* – The roadmap for vehicle transport needs to include safety and environmental aims.

A2.23 *FEMA* – From a consumer's point of view option three (bilateral agreements) would be the most simple. The proportion of users that are willing to travel between countries is likely to be negligible. It was felt that all EU Member States did not necessarily have to have PTIs comparable to Germany's.

A2.24 *IRTU* – Their members have reported some Member States persistently asking for testing results of vehicles before letting them enter the country, as the Member State in question does not believe the testing standards in the country the vehicle comes from are high enough. Quite a number of 3rd country transport is being undertaken in the EU (cabotage) – this does not require a vehicle to return to their country of registration frequently e.g. an Estonian tractor driving backwards and forwards on a route from Italy to Belgium.

A2.25 *ETRMA* – If we are considering only the cost of vehicle testing, then potentially we should choose a lower PTI. However, consumers are the ones who ultimately die on the roads – so they need to be impelled not to succumb to cost-saving measures.

A2.26 *FEMA* – In Belgium, some petrol stations require payment for checking tyre pressures.

A2.27 *Europe Economics* – The optimal safety level is not the highest safety level. People want to take some risk and therefore an optimal risk level exists.

A2.28 *DG MOVE* – There exists a study looking at the impact of non-mutual recognition on the transport goods sector.

A2.29 *RDW* – The Netherlands recently lowered the PTI frequency in order to lower the cost for citizens. They feel the human factors involved with PTI-testing are much more important. Regarding the Spanish and Dutch arrangement, Spanish testing authorities can now dispense Dutch PTI certificates. However, problems have been experienced with cars that have been tested in this way being stopped by French police. Is it possible that producing a standard certificate might go a long way to helping the situation?

A2.30 Most vehicles are not taking part in cross-border traffic and are travelling far fewer miles than trucks. We need to be careful not to suddenly burden cars excessively - a staged approach might be prudent.

A2.31 Motorcycle drivers will sometimes save costs by buying tyres which have not been type-approved – it was felt that potentially there could be big improvements seen just by ensuring standardisation of the testing of such motorcycle tyres.

A2.32 The divergence between commercial and private use of vehicles was emphasised – it was felt that a very different approach needed to be used to evaluate the two.

A2.33 *BMVBS* – It was asked what the difference was between option 4c (low level standardisation) and 1a (improvement in current regulatory requirements).

A2.34 *Europe Economics* – The assumption had been confirmed with the EC that Member States would not be stopped from performing higher level tests under option 4.

A2.35 *DG MOVE* – At the moment the regulation on roadworthiness testing consists of a list of items that have to be checked but no way of evidencing that these checks have taken place correctly (even if a roadworthiness certificate is issued). Therefore a database is needed in order to enable mutual recognition, as this information has to be available.

A2.36 *DEKRA* – Currently there are different levels required to pass the same vehicle test in different Member States. For instance, one Member State might require a tread depth of 7mm on tyres to pass a PTI whilst another Member State might only require 5mm. So the current EC regulation does not actually even dictate a minimal standard.

A2.37 For European brake force tests there are currently differences in the way brake force is calculated and measured, and the tests are performed using different equipment (e.g. between Poland and Germany). Without dealing with these differences, they felt that option 3 (mutual recognition) was impractical.

A2.38 *Unknown* – If we want a single market then we must have the same requirements in each Member State. If vehicles are allowed to drive in all countries then they must be safe to drive in all countries, not just in the country where the lowest safety level would efficiently be chosen due to the particular situation on that country's roads. Additional tests should not stand in the way of mutual recognition.

A2.39 *Europe Economics* – Under mutual recognition vehicles might potentially go to either lower-quality testing centres or else just more efficient testing centres.

A2.40 *FEMA* – There is a big difference between the commercial fleet and private fleet in terms of the ability of vehicle-users to choose which Member State in which to undertake a PTI. Private vehicles are much less likely to shop abroad.

Afternoon Session

1.42. Improved Flows of Information

1.42.1.1. Alastair Williams (Centiq)

A2.41 The main point was that everything desired with regard to information provision could theoretically be delivered, but not necessarily within one system and/or within reasonable costs.

A2.42 It was felt that the estimate provided by one Member State of a cost of less than €1,000 to add an extra field into their current vehicle database was likely to be incorrect (too low).

1.1.52. Discussion

A2.43 *RDW* – Have we been looking at other vehicle information systems currently already in place or else planned for the future? The existence of the EUCARIS (European Car and Driving License Information System) system was noted, to which it was felt it would likely be easy to add additional fields. It was asked whether a potentially big disadvantage of using a centralised database was that it would mean only one point of failure? (*EE* – this issue can be solved).

A2.44 *CITA* – They have been discussing the database problem for several years. Their members are clearly in favour of a European centralised database. If mutual recognition was implemented, they felt that PTI testers would need to be able to see the data.

A2.45 They put forward that for testing equipment a database would be useful as an anti-corruption tool – it is possible to take photos of the testing going on to ensure it takes place. For this to work the database need to be linked automatically to the central national database, as is currently the case in certain parts of Asia. If there are electronic components in cars, information on these needs to be accessible in various countries.

1.43. Interim Analysis of the Internet Consultation

1.43.1.1. Helen Gardner (Europe Economics)

A2.46 It was noted that a number of stakeholders had problems responding to the internet consultation due to it only having been made available in English.

1.44. First Analysis of the Options

1.44.1.1. Dermot Glynn (Europe Economics)

A2.47 With regard to option 1 it is necessary to keep in mind the possibility of regulatory creep.

A2.48 For option 2 it was noted that some spontaneous examples already exist. Any such increase in testing standards required under this option would stem from discussion between Member State pairs.

1.1.53. Discussion

A2.49 *Unknown* – The preference was for improving the minimum requirement under option 1a and then implementing option 3 (mutual recognition).

A2.50 *DG MOVE* – It was noted that the EC had received complaints from the French that Spain now accepts cars tested to Dutch standards but not those tested to French standards.

A2.51 *Unknown* – Bilateral agreements would not be needed if vehicle owners just changed the registration of their vehicle to that of the country it was being kept in. Therefore would it be possible to just harmonise vehicle registration in the EU? Then potentially registration could just be transferred easily across as necessary. (*DG MOVE* – problem of different registration requirements related to the taxation of vehicles.)

A2.52 *CSDD* – Agreed with DG MOVE that there was an issue of discrimination between EU citizens with the use of bilateral agreements. People living in Member States with high vehicle testing levels might feel discriminated against when comparing themselves to Member States with low requirements.

1.45. Comments and Discussion

A2.53 *Unknown* – A standardised system would be the best system, but not at the highest PTI level. However, with a PTI level set at below the maximum some Member States will still request additional tests from their residents. He believed that standardisation and mutual recognition would be the best solution.

A2.54 *DG MOVE* – When sitting around a table with 27 EU delegates some delegates will always push for high requirements which others would not be able to follow. So in order to standardise it is necessary that all Member States are able to afford it (it would not be possible for all Member States to pay for the highest PTI cost). Recommendations need to be based on best practice but also have to be reduced to a manageable level – compromise is necessary else the proposal would be rejected immediately.

1.46. Concluding Remarks

1.46.1.1. Walter Nissler (Unit D3 – Road Safety)

A2.55 It was felt the overall feeling derived from the discussion was that the majority of people are for harmonisation of vehicle tests, but not at the highest quality level. Noted the need for balance between costs for different Member States, especially those which would be least able to cope with any increase in costs.

1.46.1.2. Ms. I Kardacz (Head of Unit D3 – Road Safety)

A2.56 The idea of a step-by-step approach sometimes helps a great deal. It enables later decisions on the more ambitious objectives which would not be achievable in the short term. The preference for allowing countries to implement higher quality PTIs than a minimum if they so wished implied an EC Directive would have to be chosen rather than EC Regulation.

APPENDIX 3: PUBLIC ON-LINE CONSULTATION

A3.1 The public consultation relating to Periodic Technical Inspections (PTI) for motor vehicles and their trailers was made available on-line using the Commission's interactive policymaking tool. The consultation was only made available in English due to the short time frame in place.

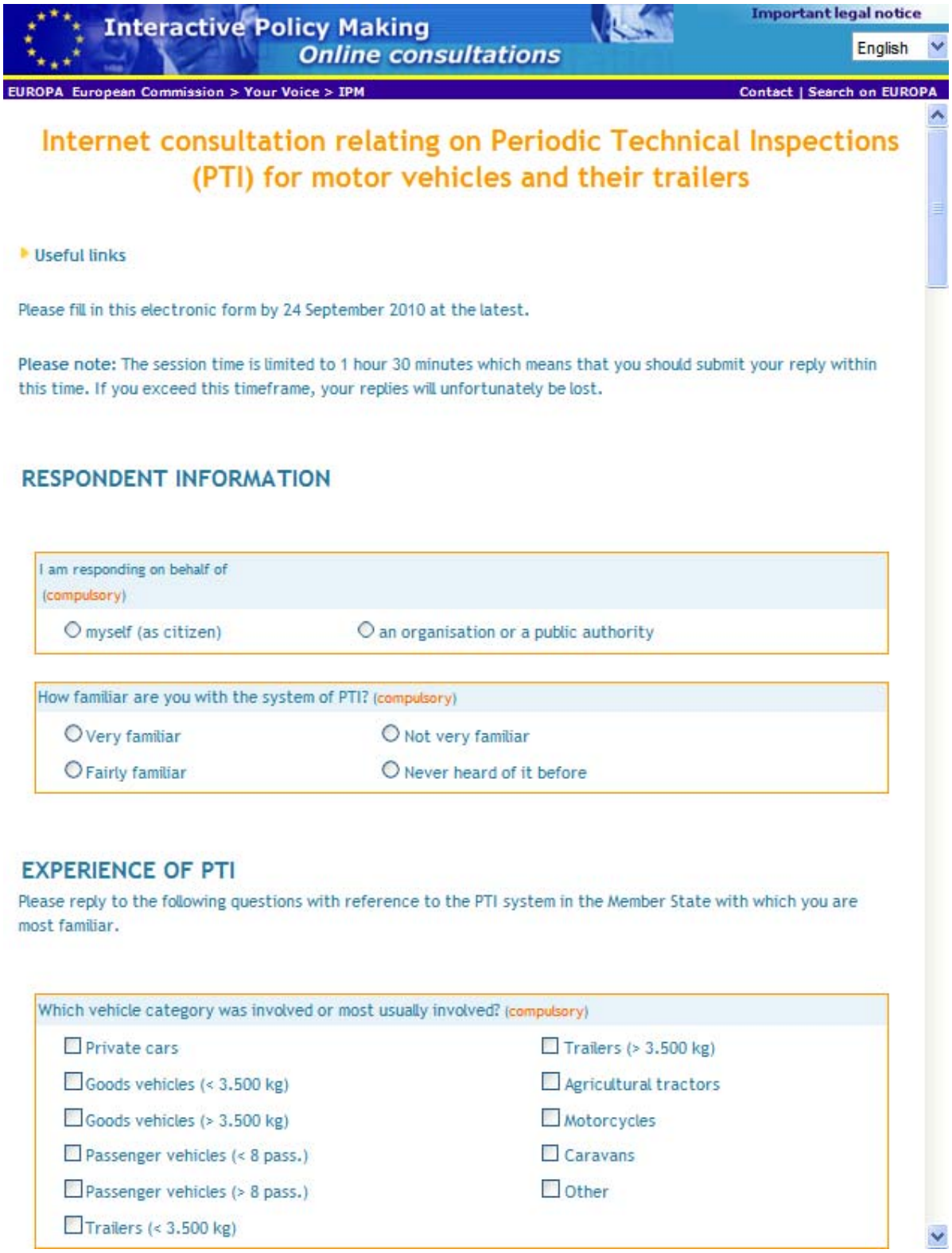
A3.2 The consultation period ran from 30 July 2010 until 24 September 2010.

A3.3 Unfortunately the questionnaire was inaccessible on 19 September 2010 due to an outage.

A3.4 The anonymous on-line questionnaire was structured as follows:

- respondent information;
- experience of PTIs;
- experience of roadside inspections;
- the inspections in the EU;
- vision on policy options.

A3.5 Screen shots of the questionnaire as it appeared on-line are given below:


Interactive Policy Making
Online consultations
Important legal notice
English
EUROPA European Commission > Your Voice > IPM
Contact | Search on EUROPA
Internet consultation relating on Periodic Technical Inspections (PTI) for motor vehicles and their trailers
Useful links
Please fill in this electronic form by 24 September 2010 at the latest.
Please note: The session time is limited to 1 hour 30 minutes which means that you should submit your reply within this time. If you exceed this timeframe, your replies will unfortunately be lost.
RESPONDENT INFORMATION
I am responding on behalf of (compulsory)
myself (as citizen)
an organisation or a public authority
How familiar are you with the system of PTI? (compulsory)
Very familiar
Not very familiar
Fairly familiar
Never heard of it before
EXPERIENCE OF PTI
Please reply to the following questions with reference to the PTI system in the Member State with which you are most familiar.
Which vehicle category was involved or most usually involved? (compulsory)
Private cars
Goods vehicles (< 3.500 kg)
Goods vehicles (> 3.500 kg)
Passenger vehicles (< 8 pass.)
Passenger vehicles (> 8 pass.)
Trailers (< 3.500 kg)
Trailers (> 3.500 kg)
Agricultural tractors
Motorcycles
Caravans
Other

To which type of test do you refer? (compulsory)

- ○ Periodic in garage or testing centre
- ○ Roadside inspection

In which country did the test take place? (compulsory)

- ○ Belgium
- ○ Bulgaria
- ○ Czech Republic
- ○ Denmark
- ○ Germany
- ○ Estonia
- ○ Ireland
- ○ Greece
- ○ Spain
- ○ France
- ○ Italy
- ○ Cyprus
- ○ Latvia
- ○ Lithuania
- ○ Luxembourg
- ○ Hungary
- ○ Malta
- ○ Netherlands
- ○ Austria
- ○ Poland
- ○ Portugal
- ○ Romania
- ○ Slovenia
- ○ Slovakia
- ○ Finland
- ○ Sweden
- ○ United Kingdom

What was the cost of the test to the vehicle owner per vehicle tested (excluding any consequent cost of e.g. repairs to the vehicle)?
Indicate currency ...
(optional)

- ○ EUR (euro area - euro)
- ○ BGN (Bulgaria - lev)
- ○ CZK (Czech Republic - koruna)
- ○ DKK (Denmark - krone)
- ○ EEK (Estonia - kroon)
- ○ GBP (United Kingdom - pound sterling)
- ○ HUF (Hungary - forint)
- ○ LTL (Lithuania - litas)
- ○ LVL (Latvia - lats)
- ○ PLN (Poland - zloty)
- ○ RON (Romania - leu)
- ○ SEK (Sweden - krona)

Indicate type of vehicle ...
(optional)

- ☐ Private cars
- ☐ Goods vehicles (<3.500 kg)
- ☐ Goods vehicles (>3.500 kg)
- ☐ Passenger vehicles (< 8 pass.)
- ☐ Passenger vehicles (> 8 pass.)
- ☐ Trailers (< 3.500 kg)
- ☐ Trailers (> 3.500 kg)
- ☐ Agricultural tractors
- ☐ Motorcycles
- ☐ Caravans
- ☐ Other (Please Describe)
- ☐ No charge to vehicle owner

What was your impression of the overall efficiency and value for money of the test?

From 1=insufficient to 5=excellent

	1	2	3	4	5
Efficiency and value for money (optional)	○	○	○	○	○

From your experience, are there any aspects of PTI which could be improved? (compulsory)

- ○ Yes
- ○ No

Which specific technical information from the car manufacturer do you think would be necessary to improve PTI? (for testing centres only) (optional)

- ☐ Passive safety installed components
- ☐ Active safety installed components
- ☐ Options installed on the specific vehicle
- ☐ External components (fog lights ...)
- ☐ New vehicle light power
- ☐ New vehicle noise levels
- ☐ Suspension stiffness data
- ☐ Brake capacity data
- ☐ OBD (On Board Diagnostic) connection capacities, failure codes
- ☐ Other

Do you think Periodic Technical Inspection should be extended to other vehicle categories? (optional)

- ☐ Motorcycles >= 125 cm3
- ☐ Motorcycles < 125 cm3
- ☐ All trailers
- ☐ Passenger cars in business use*
- ☐ Agricultural Tractors
- ☐ Caravans
- ☐ Heavy quadricycles
- ☐ Small electrical vehicles
- ☐ Others

Do you think that a new technical inspection should be required again after ...? (optional)

- ☐ Accidents
- ☐ Certain distance travelled
- ☐ Vehicle change of ownership
- ☐ Others ...
- ☐ Vehicle modifications

In your opinion, which should be the first date of the inspection compared with those currently required? (optional)

- ○ Earlier than actual one
- ○ Later than actual one
- ○ Current first inspection date is correct
- ○ Not known
- ○ Not applicable

In your opinion, which should be the frequency of the inspections compared with those currently required? (optional)

- ○ Higher frequency
- ○ Higher frequency for older cars (>=8 years)
- ○ Lower frequency
- ○ Current frequency is correct
- ○ Not known
- ○ Not applicable

Do you think that the improvement of the PTI system and the simplification of the administrative procedures related to PTI of vehicles could be an advantage for you? (optional)

○ Yes ○ No ○ Do not know

To improve road safety and reduce emissions, how much could the PTI cost reasonably increase for you? (optional)

- ○ up to 5%
- ○ up to 10%
- ○ up to 20%
- ○ up to 30%

EXPERIENCE OF ROADSIDE INSPECTIONS

Do you think that Roadside inspections should be extended to other vehicle categories (unannounced technical inspections of commercial vehicles circulating)? (optional)

- ☐ All commercial vehicles
- ☐ All motorcycles

Do you think that the items verified in Roadside inspections should be extended to the ones foreseen for PTI to avoid unfair treatment? (optional)

- ○ Yes
- ○ No

Which specific technical information from the Car Manufacturer do you think would be necessary to improve the Roadside inspections? (optional)

- ☐ Passive safety installed components
- ☐ Active safety installed components
- ☐ Options installed on the specific vehicle
- ☐ External components (fog lights ...)
- ☐ New vehicle light power
- ☐ New vehicle noise levels
- ☐ Suspension stiffness data
- ☐ Brake capacity data
- ☐ OBD (On Board Diagnostic) connection capacities, failure codes
- ☐ Other

THE INSPECTIONS IN EUROPE

Today there are differences between the system for vehicle inspection in Europe. Do you think that the system of periodic technical inspection of your country should be changed to a system fully standardised in the EU? (optional)

- ○ Yes
- ○ No
- ○ No opinion

If a standardised EU vehicle inspection system were to be introduced should it be based on (optional)

- ○ the most rigorous standard currently in force anywhere in the EU, to maximise the levels of security achieved?
- ○ the medium standard in force?
- ○ the least rigorous standard in force?

Has the absence of a PTI standardised system caused you some costs? (optional)

○ Yes ○ No ○ No opinion

Do you think that inspection results of all vehicles should be available to those carrying out tests and to government authorities in Europe? (for administration and testing centres) (optional)

○ Yes ○ To authorities only ○ No ○ No opinion

Do you think that the exchange of data (including data on registration of vehicles and inspection results) is helpful to reduce the administrative burden faced by the citizens? (optional)

○ Yes ○ No ○ No opinion

Do you think that the administrative procedure for PTI is too complicated in your country? (optional)

○ Yes ○ No ○ No opinion

In the last three years, have you ever been obliged to travel from one Member State to another, in order to have your vehicle tested? (compulsory)

- ○ Yes
- ○ No

Has the absence of a standardised system of vehicle testing throughout the EU resulted in any other types of cost or inconvenience for you?
If so, please explain ...
(optional)

POLICY OPTIONS

The EU and national Governments are at one in wishing to ensure that the EU Single Market works as efficiently as possible and that the administrative burden is reduced, in the interests of citizens. There is also a wish to see a reduction in the numbers and severity of road accidents and of emissions from road vehicles.
Against this background, a number of alternative policy options are being considered, and the purpose of this part of the questionnaire is to invite your views on the best approach.

Option 1: No policy action - maintain essentially the present arrangements on PTI and Roadside inspections.

Option 2: Encourage bilateral agreements between Member States on quality of testing, mutual recognition of PTI and exchange of information, but no new legislation.

Option 3: Mutual recognition of national PTIs to be combined with:

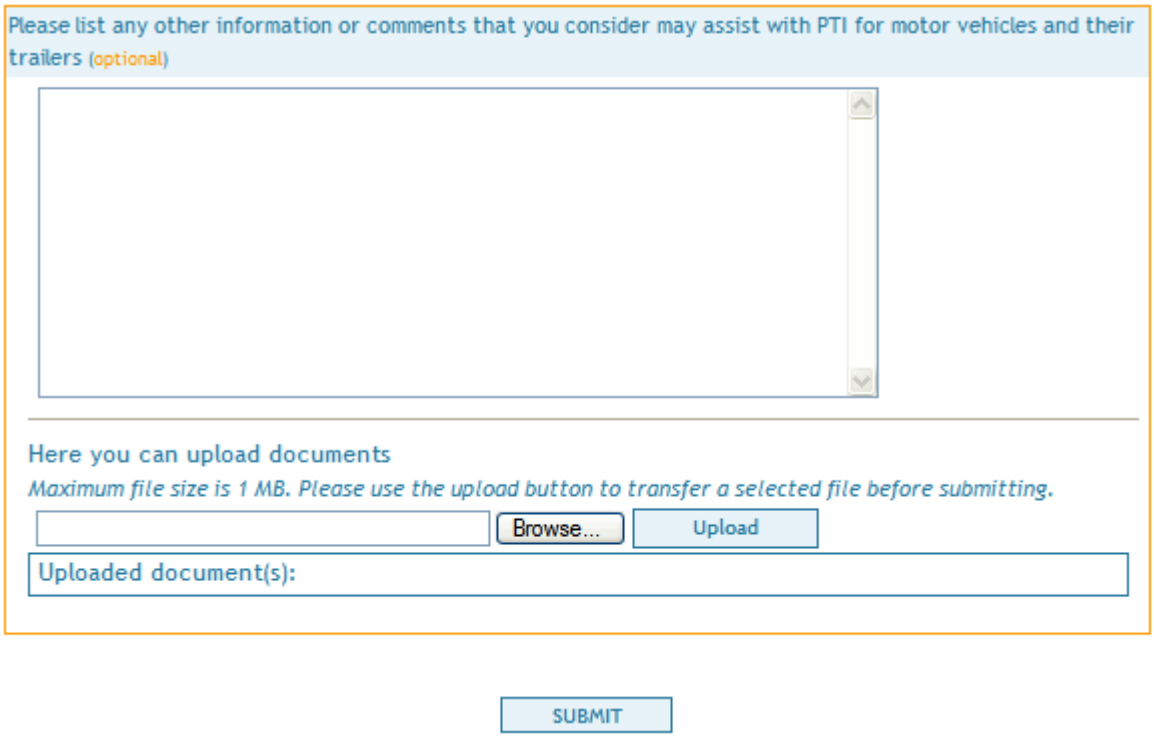
- Information campaign on PTI for countries where the PTI quality is thought to be low
- Exchange of best practices among countries

Option 4: Impose through EU legislation a standard EU-wide system for PTI
Sub-options:

a) Most rigorous
b) Medium quality
c) Least rigorous

Which of the options brefly outlined above would you support? (optional)

- ○ Option 1: No action
- ○ Option 2: Bilateral agreements
- ○ Option 3: Full mutual recognition of PTI
- ○ Option 4a: A standard EU-wide system for PTI - Most rigorous
- ○ Option 4b: A standard EU-wide system for PTI - Medium quality
- ○ Option 4c: A standard EU-wide system for PTI - Least rigorous



A3.6 A number of complaints were received regarding the running of the consultation. The most frequent complaint was that the consultation was only made available in English, therefore did not facilitate responses from EU citizens whose English was not proficient. This was despite the fact that the eventual results of the consultation would be used to direct policy for all EU citizens. This limitation was taken into consideration when analysing the survey data.

A3.7 In order to aid members in responding to the questionnaire, FEMA provided translations of the questionnaire into French and Dutch on their website.

A3.8 Design faults were uncovered in a number of questions,[140] which would likely lead to biased results. Responses to these questions have therefore not been taken into account in the analysis of the consultation.

A3.9 An analysis of the results of the public consultation is provided below:

Respondent profile

A3.10 A total of 9,653 responses to the internet consultation were received.[141] Of these, 9,207 responses were made on behalf of the individual respondent and 446 were made on behalf of an organisation or public authority.

[140] Specifically, "To improve road safety and reduce emissions, how much could the PTI cost reasonably increase for you?"

[141] As of 11:30am, 07/09/2010.

Private citizens

A3.11 For those responding as an individual, the break down of responses by Member State was as follows:

Table A3.1: Break down of respondents by Member State

EU Member State	Number of responses	Percentage of individuals
United Kingdom	4,694	51.0%
France	2,292	24.9%
Netherlands	1,083	11.8%
Germany	317	3.4%
Spain	306	3.3%
Belgium	148	1.6%
Finland	126	1.4%
Poland	81	0.9%
Ireland	37	0.4%
Sweden	27	0.3%
Estonia	22	0.2%
Portugal	12	0.1%
Greece	11	0.1%
Luxembourg	11	0.1%
Denmark	10	0.1%
Italy	8	< 0.1%
Austria	6	< 0.1%
Malta	6	< 0.1%
Lithuania	3	< 0.1%
Romania	2	< 0.1%
Cyprus	1	< 0.1%
Slovakia	1	< 0.1%
Slovenia	1	< 0.1%
Czech Republic	1	< 0.1%
Hungary	1	< 0.1%
Bulgaria	0	0%
Latvia	0	0%

A3.12 Of these individual respondents, 10.8 per cent had been involved in an accident in the last three years and 8.97 per cent had suffered a vehicle breakdown.

A3.13 As there are several Member States from which there were not enough responses for us to think that the sample is representative enough, we will not report Member State level results for these countries. Member State level results will only be reported for cases

where we feel the sample size is large enough (those which have over 80 responses), i.e. the United Kingdom, France, the Netherlands, Germany, Spain, Belgium, Finland and Poland. Together, these account for 98.26 per cent of all responses.

A3.14 Moreover, we have determined a classification of Member States based on the levels of testing standards. We will frequently use this to report results, as all categories have sufficient representation and no respondents need be excluded. The classification used is the same as in the main report, as follows:

Table A3.2: Classification of Member States according to level of testing standards

Classification	Member State
High	Belgium, Finland, Germany, Luxembourg, Sweden
Medium	Austria, Czech Republic, Denmark, Estonia, France, Ireland, Latvia, Netherlands, Portugal, Slovakia, Spain, United Kingdom
Low	Bulgaria, Cyprus, Greece, Hungary, Italy, Lithuania, Malta, Poland, Romania, Slovenia

A3.15 This classification applies only to private citizens, so the organisations are included as a separate group. In terms of this classification, a breakdown of the individual respondents is given below:

Table A3.3: Responses by category

Category	Number	Percentage
High	629	6.5%
Medium	8,464	87.7%
Low	114	1.2%
Organisations	446	4.6%

A3.16 Only a small number of respondents (1.5 per cent) had moved their residence from one Member State to another in the last three years. The major directional flows in this regard were as follows:

Table A3.4: Respondents moving residence

Direction of move		Number	Percentage of moving respondents
From	**To**		
France	Spain	17	11.9%
Netherlands	Germany	9	6.3%
France	Belgium	8	5.6%
Germany	United Kingdom	8	5.6%
France	Italy	7	4.9%
France	Germany	6	4.2%
United Kingdom	Spain	6	4.2%
United Kingdom	France	4	2.8%
Belgium	Netherlands	4	2.8%
France	United Kingdom	3	2.1%
Netherlands	Italy	3	2.1%
Netherlands	France	3	2.1%
Germany	Spain	3	2.1%
Italy	United Kingdom	3	2.1%
Other		62	41.3%

A3.17 In reading this table, it must be kept in mind that the number of responses varied widely across Member States. There were also instances of respondents having moved to a different Member State from the one that they listed as being residents of at the time of the survey.

Organisations / public authorities

A3.18 Of those replying on behalf of an organisation or public authority, the breakdown of sectors from which respondents were engaged was as follows:

Table A3.5: Breakdown of organisations

Sector	Number of responses	Percentage of organisations
Testing organisation	194	43.5 %
Vehicle tester in garage	146	32.7 %
Others	103	23.1 %
Educational / training / research organisation	54	12.1 %
Government	16	3.6 %
Road breakdown service [e.g. in UK, RAC]	15	3.4 %
Vehicle manufacturer	13	2.9 %
Roadside vehicle tester	11	2.5 %
Traffic police	3	0.7 %
Entities responsible for health	2	0.4 %
Insurance company	1	0.2 %

Experience of PTIs

A3.19 Familiarity with the system of PTI was high, with 73 per cent stating that they were very familiar or fairly familiar with the system of PTI in their country. Only 12 per cent of respondents had never heard of the system of PTI before. Looking at countries from which there were a relatively large number of responses, the frequency of respondents not having heard of the PTI system was almost twice as high in the United Kingdom than in France, nearly four times as high as in the Netherlands and five times as high as in Spain. A breakdown of respondents who had not heard of the PTI system by country is as follows:

Table A3.6: Respondents who had not heard of the PTI system

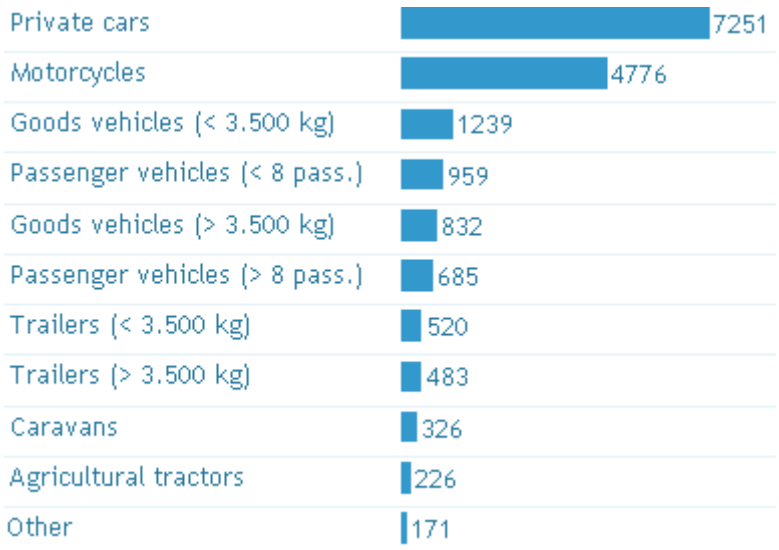
EU Member State	Number of respondents who had not heard of the PTI system	Percentage of all respondents for corresponding Member State
United Kingdom	768	16.4%
Poland	13	16.0%
Germany	41	12.9%
Belgium	14	9.5%
France	194	8.5%
Finland	6	4.8%
Netherlands	50	4.6%
Spain	10	3.3%

Table A3.7: Respondents who had not heard of the PTI system by category

Member State category	Number of respondents who had not heard of the PTI system	Percentage of all respondents for corresponding category
High	62	9.9 %
Medium	1,033	12.2%
Low	19	16.7 %
Organisations	18	4.0%

A3.20 Private cars were most frequently involved in the PTI, followed by motorcycles, then goods vehicles:

Which vehicle category was involved or most usually involved in the PTI?

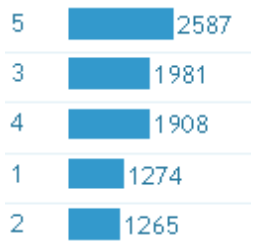


Impression of the overall efficiency and value for money of the test

Satisfaction scores

A3.21 Half of respondents felt that PTIs were excellent value for money, and only 5 per cent found them insufficient:

Efficiency and value for money (1=insufficient, 5=excellent)



A3.22 A breakdown of satisfaction scores by the country in which the PTI was carried out is given below:

Table A3.8: Satisfaction with PTI systems in selected Member States

Country where the PTI was carried out	Average customer satisfaction score (1=insufficient, 5=excellent)
United Kingdom	4.07
Spain	4.00
Germany	3.97
Poland	3.64
Belgium	2.55
France	2.41
Netherlands	2.31
Finland	2.16

Table A3.9: Satisfaction with PTI systems by category

Category of country where the PTI was carried out	Average customer satisfaction score (1=insufficient, 5=excellent)
High	3.25
Medium	3.33
Low	3.52
Organisations	4.19

Room for improvement

A3.23 Over three quarters of respondents did not see any aspects of PTIs which would be improved; however, this means that almost one quarter could see room for positive changes.

A3.24 While 21.68 per cent of private individuals could see room for improvement, this figure jumped to 58.97 per cent for organisations. In addition, those respondents in Member States with a PTI category of low or high were more than twice as likely to be able to see room for improvement as those in Member States currently with a medium PTI category. This may be in part due to the large number of responses received from the UK, which falls in the medium PTI category, where a particularly low percentage (10 per cent) of respondents could see room for improvement in the system of PTI. Breakdowns of all respondents who could see room for improvement by various categorisations are given below:

Table A3.10: Respondents who saw room for improvement in selected Member States

Member State	Number of respondents that could see room for improvement	Percentage of respondents resident in that Member State
Spain	199	65%
Belgium	68	46%
Germany	144	45%
Poland	31	38%
France	738	32%
Netherlands	255	24%
Finland	28	22%
United Kingdom	469	10%

Table A3.11: Respondents who saw room for improvement by category

Member State category	Number of respondents that could see room for improvement	Percentage of respondents resident in that category
High	256	41%
Medium	1,691	20%
Low	49	43%
Organisations	263	59%

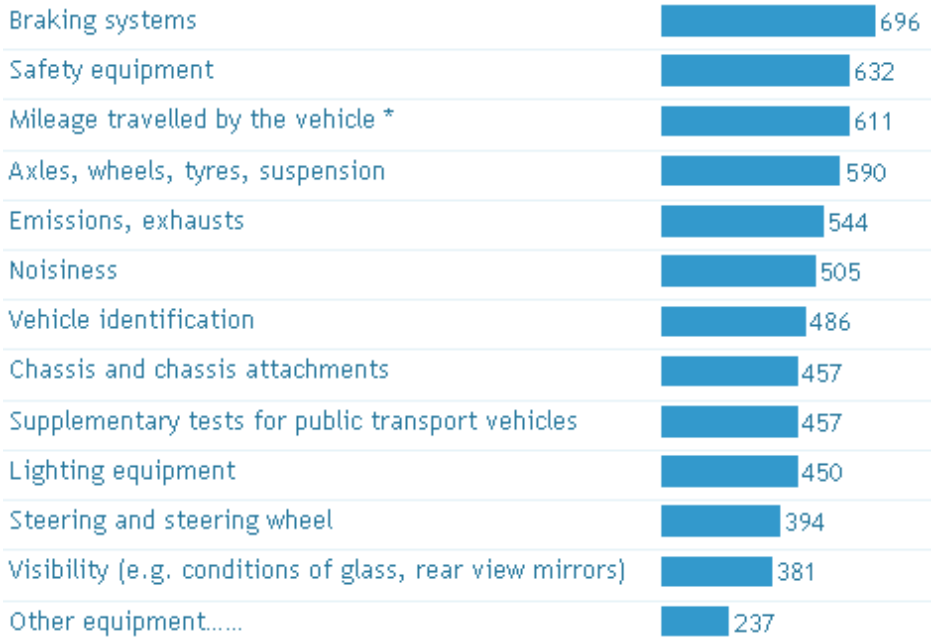
Table A3.12: Respondents who saw room for improvement by type of vehicle owned

Vehicle type	Number of respondents that could see room for improvement	Percentage of respondents with that vehicle type
more than 8 seats	71	38%
carriage of goods less than 3.5 t	125	25%
less than 8 seats	1,449	24%
trailers and semi trailers less than 3.5 t	28	17%
none of the above	492	17%
taxi and ambulance	6	17%
carriage of goods more than 3.5 t	14	12%

Aspects to be improved

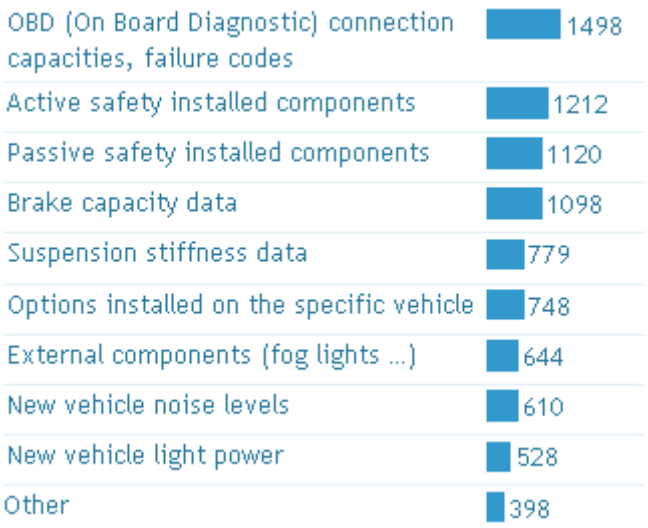
A3.25 The aspect of PTIs most frequently identified as wanting improvement were the braking systems (31 per cent), followed by the safety equipment (28 per cent) and the mileage travelled by the vehicle (27 per cent):

Aspects of PTI that respondents would like to see improved



A3.26 In regards to the need for technical information to improve PTIs, the strongest request was for on-board diagnostic connection capacities, with 16 per cent of respondents indicating this would be necessary. Active and passive safety installed components were the next most popular requests:

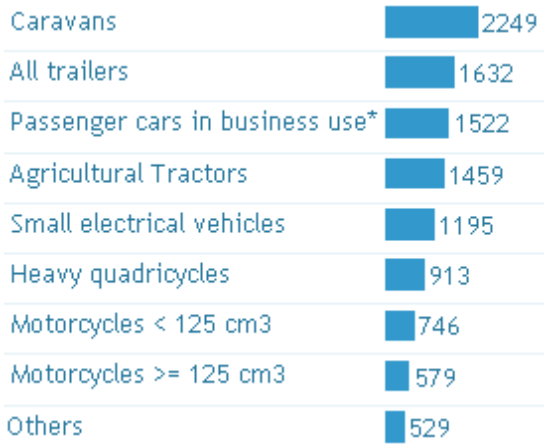
Which specific technical information from the car manufacturer do you think would be necessary to improve PTI?



Extension of PTIs

A3.27 A reasonable number of respondents agreed that PTIs should be extended to each of the listed vehicle category – with the strongest feeling for caravans (23 per cent) and weakest feeling for motorcycles >= 125 cm^3 (6 per cent):

Do you think PTI should be extended to other vehicle categories?



A3.28 The table below shows the percentages of owners of each vehicle type that wanted PTIs to be extended to other vehicle categories.

Table A3.13: Preferences regarding the extension of PTIs to other vehicle types

Category for PTI extension	Type of vehicle owned / driven						
	more than 8 seats	less than 8 seats	carriage of goods less than 3.5 t	carriage of goods more than 3.5 t	trailers and semi trailers less than 3.5 t	taxi + ambulance	none of the these
Motorcycles >= 125 cm3	7%	6%	6%	1%	11%	3%	3%
Motorcycles < 125 cm3	8%	8%	10%	3%	27%	0%	4%
All trailers	18%	17%	12%	16%	16%	18%	14%
Passenger cars in business use	17%	16%	16%	12%	16%	13%	13%
Agricultural tractors	18%	15%	12%	24%	17%	18%	14%
Caravans	20%	24%	21%	31%	18%	29%	21%
Heavy quadricycles	9%	10%	9%	5%	13%	11%	7%
Small electrical vehicles	17%	12%	12%	8%	30%	18%	10%

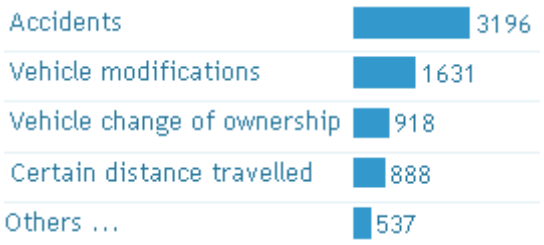
A3.29 The fact that such small percentages in each category favour extension may not be reflective of the actual preferences, as this was an optional question and as many as 5,215 respondents did not provide any answer. It is, however, apparent that there is a

wide variation in preferences among the owners of the different vehicle types who did respond. For instance, extending PTIs to Motorcycles < 125 cm^3 found more support among owners of trailers and semi trailers less than 3.5 t than other vehicle owners. Also, it is apparent that there was more support for extension to some categories than others across the board.

New technical inspections

A3.30 More than half of respondents thought that technical inspections should be required again after accidents:

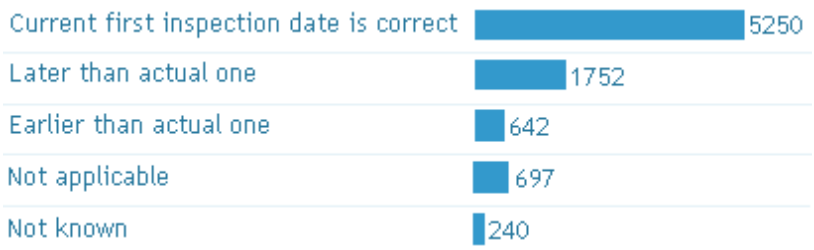
Do you think that a new technical inspection should be required again after any of the following?



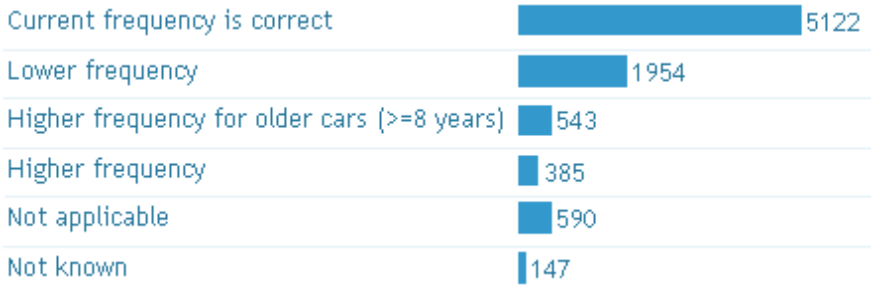
Timing of first inspection date and frequency of periodic inspections

A3.31 The majority of respondents indicated that they felt that both the current first inspection date and frequency for PTIs are correct. However, for those that thought the current first date or frequency should be changed, more individuals would prefer an later first inspection date and lower frequency than an earlier date or higher frequency:

Which should be the first date of PTI compared with those currently required?



Which should be the frequency of PTI compared with those currently required?



A3.32 However, as can be seen in the tables below, these distributions varied widely across Member States. This is perhaps due to the different current regimes in each Member State.

Table A3.14: Opinions regarding the timing of the first test in selected Member States

Member State	Current year of first test for M_1 vehicles	Current	Earlier	Later	Not applicable	Not known	Left blank
Belgium	4	41%	3%	32%	7%	5%	12%
Finland	3	37%	1%	24%	8%	8%	22%
France	4	31%	1%	36%	15%	4%	12%
Germany	3	88%	4%	5%	0%	1%	2%
Netherlands	4	25%	2%	38%	16%	6%	13%
Poland	3	77%	5%	6%	0%	5%	7%
Spain	4	30%	54%	9%	2%	0%	5%
United Kingdom	3	72%	6%	7%	3%	1%	11%

Table A3.15: Opinions regarding the timing of the first test by Member State category

Member State category	Current	Earlier	Later	Not applicable	Not known	Left blank
High	64%	3%	17%	4%	3%	9%
Medium	53%	6%	19%	8%	3%	12%
Low	71%	5%	8%	1%	5%	10%
Organisations	58%	30%	3%	2%	0%	7%

Table A3.16: Opinions regarding the frequency of tests in selected Member States

Member State	Frequency of M_1 tests	Current	Higher	Higher for cars > 8 yrs old	Lower	Not applicable	Not known	Left blank
Belgium	4/1/1	37%	1%	5%	38%	7%	3%	9%
Finland	3/2/1	33%	2%	2%	43%	5%	2%	13%
France	4/2/2	29%	1%	5%	37%	14%	4%	11%
Germany	3/2/2	20%	14%	60%	5%	0%	0%	2%
Netherlands	4/2/2/1	25%	1%	4%	43%	13%	2%	12%
Poland	3/2/1	77%	1%	6%	9%	1%	1%	5%
Spain	4/2/2/1	21%	61%	4%	10%	1%	1%	3%
United Kingdom	3/1/1	76%	1%	2%	9%	2%	0%	10%

Table A3.17: Opinions regarding the frequency of tests by category

Member State	Current	Higher	Higher for cars > 8 yrs old	Lower	Not applicable	Not known	Left blank
High	28%	8%	32%	23%	3%	1%	6%
Medium	55%	3%	3%	21%	7%	2%	10%
Low	69%	2%	10%	11%	1%	1%	7%
Organisations	54%	14%	20%	4%	2%	0%	6%

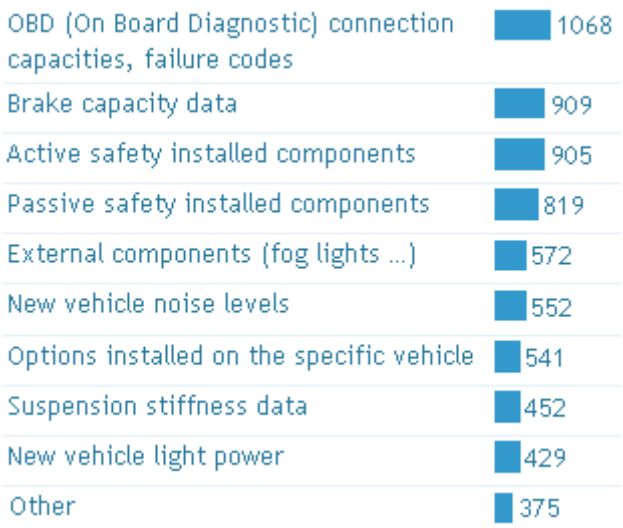
Experience of Roadside Inspections

A3.33 There was a strong feeling that all commercial vehicles should be subject to roadside inspections, with 39 per cent of respondents indicating this.

A3.34 About three times as many people felt that the items verified in roadside inspections did not need to be extended to the ones foreseen for PTIs to avoid unfair treatment than those that did (47 per cent compared to 16 per cent).

A3.35 The top four pieces of technical information from the car manufacturer listed as necessary to improve roadside inspections corresponded exactly to those listed as necessary to improve PTIs (albeit with brake capacity data moving up from fourth to second):

Which specific technical information from the car manufacturer do you think would be necessary to improve the roadside inspections?



Standardisation across Europe

A3.36 Regarding inspections in Europe, three quarters of respondents were against a fully standardised PTI system in the EU.

A3.37 However, there was a difference in distribution when private individuals were compared to organisations. On the whole, 24.4 per cent of organisations supported standardisation; this figure dropped to 13.5 per cent for private citizens, though this is largely driven by UK responses. There was also a wide variation within private citizens. Responses in this regard broken down by type of respondent are given below.

Table A3.18: Opinions regarding standardisation of inspection by category

Type of respondent	Agree with standardisation	Disagree with standardisation	No opinion	Left blank
High	26%	66%	4%	4%
Medium	12%	76%	6%	6%
Low	27%	58%	4%	11%
Organisations	24%	64%	4%	7%

Table A3.19: Opinions of organisations regarding standardisation of inspection in selected Member States

Type of organisation	Agree with standardisation	Disagree with standardisation	No opinion	Left blank
Belgium	42%	41%	9%	7%
Finland	19%	63%	9%	9%
France	24%	57%	13%	6%
Germany	18%	80%	0%	2%
Netherlands	19%	65%	8%	8%
Poland	26%	62%	6%	6%
Spain	29%	62%	5%	3%
United Kingdom	4%	89%	2%	5%

A3.38 The views of the various types of organisations in this regard are as follows:

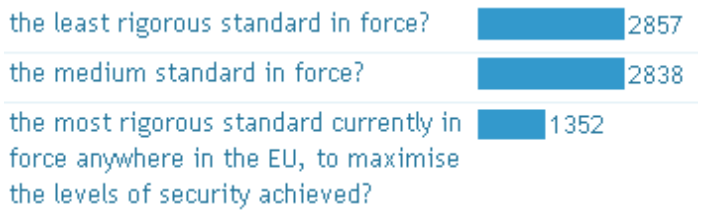
Table A3.20: Opinions of organisations regarding standardisation of inspection

Type of organisation	Agree with standardisation	Disagree with standardisation	No opinion	Left blank
Vehicle manufacturer	62%	38%	0%	0%
Vehicle tester in garage	16%	69%	7%	8%
Testing organisation	18%	76%	3%	4%
Roadside vehicle tester	45%	45%	9%	0%
Traffic police	33%	33%	0%	33%
Government	38%	50%	6%	6%
Entities responsible for health	50%	50%	0%	0%
Insurance company	0%	100%	0%	0%
Road breakdown service [e.g. in UK, RAC]	40%	40%	7%	13%
Educational / training / research organisation	11%	87%	0%	2%
Others	47%	41%	4%	9%

Level of standard

A3.39 However, if a standardised system were to be introduced, around equal numbers of respondents felt that the inspection standard set should be the least rigorous standard currently in force anywhere in the EU (29.6 per cent) and at the medium standard currently in force (29.4 per cent). Only 14 per cent thought that the standard should be set at the most rigorous level currently in force.

If a standardised EU vehicle inspection system were to be introduced, should it be based on:



A3.40 These results may be broken down as follows:

Table A3.21: Opinions on levels of standards in selected Member States

Member State	Least rigorous	Medium standard	Most rigorous	Left blank
Belgium	26%	45%	14%	14%
Finland	49%	22%	3%	25%
France	38%	37%	5%	20%
Germany	3%	8%	88%	2%
Netherlands	39%	31%	5%	25%
Poland	41%	43%	5%	11%
Spain	7%	14%	73%	6%
United Kingdom	29%	28%	7%	36%

Table A3.22: Opinions regarding standardisation of inspection by category

Category	Least rigorous	Medium standard	Most rigorous	Left blank
High	19%	21%	49%	10%
Medium	32%	31%	9%	29%
Low	33%	47%	7%	12%
Organisations	4%	14%	67%	15%

Cost savings

A3.41 Only 2.3 per cent of respondents felt that the absence of a standardised PTI system had caused them some costs.

A3.42 There was some variation in this regard across Member States:

Table A3.23: Costs arising from absence of a standardised PTI system in selected Member States

Member State	Number for whom absence of a standardised PTI led to additional costs	Percentage of all respondents from Member State
Finland	18	14.3%
Belgium	15	10.1%
Spain	20	6.5%
France	79	3.5%
Poland	2	2.5%
Netherlands	24	2.2%
Germany	5	1.6%
United Kingdom	21	0.5%

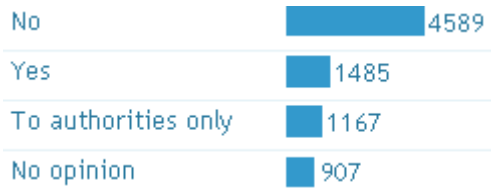
Table A3.24: Costs arising from absence of a standardised PTI system by category

Category	Number for whom absence of a standardised PTI led to additional costs	Percentage of all respondents in category
High	39	6.2%
Organisations	27	6.1%
Low	4	3.5%
Medium	151	1.8%

Access to Test Results

A3.43 Twenty seven per cent of respondents felt that inspection results should be available to government authorities in the EU and 15 per cent felt they should be available to those carrying out tests, but almost half (48 per cent) were of the opinion that inspection results should not be available to either those carrying out tests or government authorities:

Do you think that inspection results of all vehicles should be available to those carrying out tests and to government authorities in Europe?



Level of Complexity of the System

A3.44 More than half (53 per cent) of respondents do not think that the PTI administrative procedure is too complicated in their country at the moment, but almost one quarter (24 per cent) does. There was some variation across Member States, however, as can be seen below:

Table A3.25: Opinions regarding whether the incumbent system is too complicated in selected Member States

Member State	Number of respondents that do not think the PTI procedure in their country is too complicated	Percentage of respondents from Member State
Germany	282	89%
Spain	219	72%
Poland	52	64%
United Kingdom	2,595	55%
France	1,044	46%
Belgium	61	41%
Netherlands	443	41%
Finland	35	28%

Table A3.26: Opinions regarding whether the incumbent system is too complicated by category

Category	Number of respondents that do not think the PTI procedure in their country is too complicated	Percentage of all respondents in category
Organisations	304	68%
High	399	63%
Low	65	57%
Medium	4,351	51%

1.47. Exchange of Data

A3.45 The majority of respondents (55 per cent) were of the view that the exchange of data would not be helpful to reduce the administration burden faced by citizens, whilst 19 per cent felt it would. Again, there was variation across Member States:

Table A3.27: Opinions regarding whether information exchange would reduce administrative burden in selected Member States

Member State	Number of respondents that do not think information exchange would reduce administrative burden	Percentage of respondents from Member State
United Kingdom	3,008	64%
Germany	181	57%
France	1,249	54%
Netherlands	572	53%
Belgium	54	36%
Poland	24	30%
Finland	34	27%
Spain	43	14%

Table A3.28: Opinions regarding whether information exchange would reduce administrative burden by category

Category	Number of respondents that do not think information exchange would reduce administrative burden	Percentage of all respondents in category
Medium	4921	58%
High	278	44%
Low	32	28%
Organisations	68	15%

Testing in other Member States

A3.46 Only 1.1 per cent of respondents noted that they had been required to travel from one Member State to another in order to have their vehicle tested. A Member State-based break up is presented below.

Table A3.29: Respondents who had travelled to another Member State to have their vehicle tested, responses from selected Member States

Member State	Number of respondents that travelled to another Member State to have their vehicle tested	Percentage of respondents from Member State
Belgium	6	4.1%
Poland	3	3.7%
Spain	6	2.0%
Netherlands	21	1.9%
Finland	2	1.6%
Germany	5	1.6%
France	25	1.1%
United Kingdom	18	0.4%

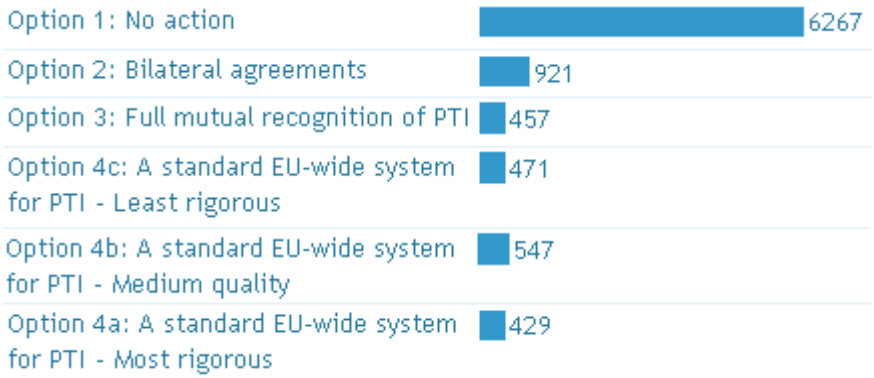
Table A3.30: Respondents who had travelled to another Member State to have their vehicle tested, responses by category

Category	Number of respondents that travelled to another Member State to have their vehicle tested	Percentage of all respondents in category
High	17	2.7%
Low	3	2.6%
Organisations	10	2.2%
Medium	74	0.9%

Policy Options

A3.47 Finally, when asked their view on which of the proposed policy options they would support, almost two thirds (65 per cent) of the respondents indicated that they would support Option 1: No action. The next most popular choice was Option 2: Bilateral agreements (10 per cent). The remainder of the options each received between 6 per cent and 4 per cent support each:

Which of the policy options would you support?



Note that Option 4c as above has been renamed 4a in the rest of the report, as well as Option 4a being renamed 4c.

A3.48 A break up by Member State and by category is given as follows:

Table A3.31: Opinions regarding policy options in selected Member States

Member State	Options						
	1: No action	2: Bilateral agreements	3: Full mutual recognition of PTI	4a: A standard EU-wide system for PTI - Most rigorous	4b: A standard EU-wide system for PTI - Medium quality	4c: A standard EU-wide system for PTI - Least rigorous	Left blank
Belgium	41%	9%	5%	9%	19%	7%	11%
Finland	38%	12%	6%	1%	9%	15%	19%
France	47%	12%	7%	2%	10%	11%	11%
Germany	48%	26%	0%	11%	8%	3%	5%
Netherlands	64%	8%	5%	2%	7%	7%	6%
Poland	42%	7%	12%	2%	10%	14%	12%
Spain	8%	54%	9%	12%	7%	3%	8%
United Kingdom	84%	4%	3%	3%	2%	1%	2%

A3.49 A break up by category is as follows:

Table A3.32: Opinions regarding policy options by category

Category	Options						
	1: No action	2: Bilateral agreements	3: Full mutual recognition of PTI	4a: A standard EU-wide system for PTI - Most rigorous	4b: A standard EU-wide system for PTI - Medium quality	4c: A standard EU-wide system for PTI - Least rigorous	Left blank
High	42%	18%	4%	8%	12%	7%	9%
Medium	69%	8%	5%	3%	5%	5%	5%
Low	42%	6%	11%	4%	14%	10%	14%
Organisations	33%	20%	9%	25%	6%	1%	8%

A3.50 A break up according to type of respondent is given below.

Table A3.33: Opinions regarding policy options by type of respondent

Option	Type of respondent	
	Organisation / public authority	Private citizen
1: No action	33%	66%
2: Bilateral agreements	20%	9%
3: Full mutual recognition of PTI	9%	5%
4a: A standard EU-wide system for PTI - Most rigorous	25%	3%
4b: A standard EU-wide system for PTI - Medium quality	6%	6%
4c: A standard EU-wide system for PTI - Least rigorous	1%	5%
Left blank	8%	6%

A3.51 A break up according to the type of vehicle is given below.

Table A3.34: Opinions regarding policy options by type of vehicle owned

Option	Type of vehicle owned						
	more than 8 seats	less than 8 seats	carriage of goods less than 3.5 t	carriage of goods more than 3.5 t	trailers and semi trailers less than 3.5 t	taxi and ambulance	none of these
1: No action	45%	63%	58%	71%	72%	68%	74%
2: Bilateral agreements	17%	10%	7%	8%	10%	8%	7%
3: Full mutual recognition of PTI	4%	5%	4%	3%	5%	8%	3%
4a: A standard EU-wide system for PTI - Most rigorous	7%	4%	4%	2%	1%	3%	2%
4b: A standard EU-wide system for PTI - Medium quality	7%	6%	9%	8%	5%	5%	4%
4c: A standard EU-wide system for PTI - Least rigorous	8%	5%	9%	5%	3%	5%	4%
Left blank	12%	5%	8%	3%	4%	3%	6%

APPENDIX 4: IMPROVED INFORMATION AVAILABILITY

1.1.54. Introduction

A4.1 Whilst this project does not require an in-depth technical design (which would take place at a separate phase of EU policy-making) it is important as part of this economic impact assessment to consider expected costs associated with different forms of data delivery. To this end a high-level design is needed of typical infrastructure options that would meet the aims.

A4.2 It is a common perception that with regard to data transmission and analysis virtually anything is technologically possible, and for the types of data analysis relevant for this study, this is true. However, it is essential to recognise that whilst a single data handling system (say, an EU-wide data bank) would have the potential to accommodate all possible uses, this would be prohibitively expensive to install and maintain at an acceptable performance level. For this reason, more than one system may be required.

A4.3 In thinking about the possible design of data-handling systems it is critical to first understand the aims of data sharing, as defined by the stakeholders, so that the purpose and usage of the supporting system is designed around these aims.

A4.4 In the context of this study, a basic distinction is needed between data needed for the purpose of:

- strategic planning, which whilst not time critical has high data processing needs; and
- operational support, reporting and transactional processing, which require rapid access to specific records.

1.1.55. Strategic and planning reporting

A4.5 Strategic and planning reporting systems (also known as decision support systems or data warehouses) gather data from single or multiple systems and analyse them as a whole with little or no value placed in individual records. Complexity and system delivery costs depend not only on the volume of data stored but also upon the number of data fields and therefore number of queries that can be generated. The challenge is mapping these data elements together to form a coherent question to produce an answer that can be used in the context of a single or multiple projects.

A4.6 The assumption is that a planner or strategy advisor at any level would like, or needs, to know certain facts in order to make more informed recommendations. The value placed initially on such systems can be hard to quantify but may come in the form of correctly prioritising one initiative over another, deploying an initiative faster as the evidence promotes stakeholder acceptance, or dismissing potentially costly projects that “feel” right yet are disproved by the evidence these systems provide.

A4.7 Some examples given in the context of this impact assessment are:

- total mileage travelled by all cars registered within the 27 Member States;
- total mileage travelled by engine size;
- total mileage travelled by vehicle / car type;
- typical age of active cars;
- age against mileage per year;
- typical engine size by age of car.

A4.8 Each of these give general trend data without needing to identify individual vehicle information, but the information of each and every vehicle in Europe should be considered to give the most accurate results.

A4.9 The main features of such a system are:

- huge amounts of data must be analysed, sometimes more than once, in order to provide results;
- the information itself is not changed and therefore does not require the application that created the data to arbitrate access to retain integrity;
- time for retrieval is not usually critical;
- initially usage is limited; however, usage quickly ramps up as planners see benefits.

1.1.56. Operational support / reporting and transactional processing

A4.10 Whereas the decision support system focused on the expansive high-level trend view, operational support systems focus on providing (or receiving) the optimum amount of information about an individual unit item to allow users within the EU to work more productively, more accurately or with greater security.

A4.11 Within the context of this study the unit item involved will be individual motor vehicles or road vehicles requiring PTI testing and test results.

A4.12 Likely users include: road-using citizens / consumers of the EU and those that support them, roadside testing authorities, testing centres and engineers requiring historical information, police authorities, tax authorities, and fleet managers.

A4.13 The information used will define whether the user needs the facility to update or merely see specific information.

A4.14 The defined provision terms should be:

- number of and type of users that would have access to the system;
- the information required to be effective and the timescales for that information to be available;
- number of times a procedure is used for individual unit evaluation.

A4.15 The main features of such a system are:

- Small amounts of specific data must be retrieved randomly from the database in order to provide results.
- The Information itself could be changed in which case this would require application arbitration.
- Time for retrieval is critical. In many cases sub 5 second response would be expected. Retrieval times in excess of 1 minute would be considered unacceptable as at this level of delay users typically lose faith in the system and cease to use it.

A4.16 Similar systems are already in use within the Commission, one example being the Tachonet system in which HGV driver registration and key card management information is shared between specific users (in this case the Card Registration Authorities in Member States).

Suggested Aims of a Harmonised Data Exchange

A4.17 Attendees from the Workshop and Stakeholder meetings were invited to suggest specific benefits of a harmonised information exchange with regard to vehicle testing. A questionnaire followed requesting input on what information would need to be exchanged, what the value this information would have in the process identified, and any problems or limitations that could be envisaged. During the consultation process it was requested contributors focus on the benefit of use rather than the use itself and provide figures supporting this where possible. The response from stakeholders was limited with only three contributors justifying data exchange under the aims suggested and one quantified benefit provided, suggesting that whilst many uses for data exchange can be envisaged there is currently a lack of justifying information.

A4.18 The contributed benefit remarks associated with each aim are entered in italics. Where figures are available to support these comments these are entered underlined. Finally each nominated aim has been evaluated against the policy options in discussion.

AIM A-1: CO2 emissions and mileage analysis - strategic reporting

High level description	This information is required for policy planning within the EU to improve decision making, accelerate policy analysis and monitor legislative impact Ease of retrieving data for further planning and analysing the effectiveness of the current policies Monitoring
Response times	Undefined
Minimum information required	Vehicle type, Odometer, VIN (as primary key)
Value	Undefined
Disadvantages	Undefined
Policy option comments	Information would come from Member States' PTI testing systems, (regardless of policy option selected) and from questionnaires available in current systems, or which will be on completion of compliance with 2010/48/EU It is not mandatory for any specific policy option; however, it should be seen as highly useful in all scenarios.

AIM A-2: Vehicle demographics – strategic reporting

High level description	May allow the definition of local policies Through improved PTIs, better knowledge of actual use of vehicles across the EU (for different purposes, directly related to PTIs, but also indirectly such as calculation of EU and national motor vehicle environmental impact, setting of related taxation, incentives etc.)
Response times	Undefined
Minimum information required	Vehicle type
Value	Undefined
Disadvantages	Undefined
Policy option comments	Information would come from Member States' PTI testing systems (regardless of policy option selected) and from questionnaires available in current systems, or which will be on completion of compliance with 2010/48/EU It is not mandatory for any specific policy option; however, it should be seen as generally useful.

AIM A-3: Consumer advice 1. Fault prevalence – strategic reporting

High level description	To provide a centralised "portal" allowing consumer visibility of common failures within European vehicle fleet, promoting awareness of these faults which in turn could improve road safety standards
Response times	None defined, seconds?
Minimum information required	None defined
Value	Undefined
Disadvantages	Impact on existing service providers
Policy option comments	Information would come from Member States' PTI testing systems, including fault type and fault detail information. Requires a higher level of conformity of information recorded within the Member States than is currently seen; would be partially facilitated at level 2, fully facilitated at level 3 and above. Not mandatory for any policy option. Information currently provided by some Member States, prime contractors or independent organisations, as well as similar information provided within recognised consumer publications.

AIM A-4: Roadside test authority support - operational

High level description	Significant amount of anecdotal evidence suggests that performance and capture rates of roadside test teams could be improved with visibility of PTI test results. The information used here centres on targeting suspect vehicles to improve road safety, and improving efficiency of inspection to minimise inconvenience to roadworthy vehicle users. Necessary complement to PTIs, the possibility of being checked within a RSI ensures a reasonable level of compliance. Better cost-effectiveness than more regular PTIs. (This statement has been challenged by another stakeholder) More efficient inspection: vehicles inspected according to their expected features (and) reduce the inspection time
Response times	Seconds
Minimum information required	All those related to vehicle-defined limits (emissions, noise when applicable, etc) CITA's recommendation 15 lists the information Because of the nature of roadside inspections, some technology will need to provide the information on handheld devices. An adequate definition of the COP (certificate of conformity), considering the information necessities of PTIs may be of use.
Value	Undefined
Disadvantages	With a full set of information, cost is to be considered in an appropriate cost/benefit analysis (see annex 4-C below for design considerations for an operational system)

Policy option comments	Information would come from PTI testing systems and could be deployed from Level 1; however, is of most value and more effective at Levels 3 and above. Information required needs to be defined by roadside testing authorities.

AIM A-5: Consumer advice 2 – operational reporting

High level description	Fraud avoidance, regarding mileage Modifications in the vehicle that must be approved in certain EU Member States; may withdraw the vehicle guarantee; may impeach the sale of the vehicle in certain Member States where the approval of modifications is mandatory More difficulties for stolen vehicles trade Providing vehicle PTI test results to the consumer, leading to greater awareness of vehicle history and condition, preventing fraud, contributing to internal market and improving safety
Response times	Seconds
Minimum information required	PTI records Accident records
Value	Un-quantified From the consumers' point of view, sometimes it is hard to justify not having official records of a vehicle's life
Disadvantages	
Policy option comments	Information comes from PTI test results systems. This functionality already exists in a number of instances at Member State level. Can be facilitated from Level 1, complete deployment possible from Level 3 Not necessary pre-requisite to facilitate implementation for any policy option

AIM A-6: Past test and type approval visibility within PTI test operation – operational processing

High level description	Type approval checking of parts such as exhaust silencing system, tyres, and conformity to anti-tampering provisions Facilitate the detection of modifications, and their approval Shared information would be used by PTI testing personnel to validate the tested vehicle with manufacturers' type approval registration and vehicle history. Checking of parts such as exhaust-silencing system, airbag configurations,

	tyres, and conformity to anti-tampering provisions; and ensuring PTI test parameters match the vehicle performance should the engine be modified in any way.
Response times	Seconds
Minimum information required	See CITA recommendation 15 Information would come from manufacturers' type approval register or appropriate alternative which may include the setting up of a centrally administered or located database or integration to country specific alternatives and PTI systems. (Additional Information concerning AIM A-11 recalls should be considered within the design)
Value	Results in greater awareness and subsequent correction of faults resulting in safer vehicles and a potential 0.5 – 0.9 per cent avoidable road deaths per year[142]
Disadvantages	With a full set of information, cost is to be considered in an appropriate cost/benefit analysis (see annex 4-C below for design considerations for operational system)
Policy option comments	The use and outcomes are in line with continual improvement of vehicle testing yet becomes most effective at level 3 and above.

1.1.57. AIM A-7: Anti–corruption, fraudulent and inaccurate pass rate reduction – operational / strategic reporting

High level description	To improve detection rates of rogue and poorly trained inspections with the effect of reducing unroadworthy traffic as overall quality and compliance rises, leading to improved safety and consumer protection
Response times	Undefined
Minimum information required	Information within the PTI system would be analysed both at the unit level to identify specific infringements and at the strategic level to spot trends. Would require tester ID and station to be logged and potentially photographic verifications as well.
Value	Undefined
Disadvantages	Cost and enforceability, may require change in law
Policy option comments	No defined minimum policy level; however, becomes more critical with policy options 3 and 4 where confidence in partner states' testing procedures is mandated rather than trusted.

[142] "Estudio para la Incorporación del Diagnóstico Electrónico en las ITV". FITSA / Universidad Carlos III de Madrid / Applus Idiada. Nov. 2008

1.1.58. AIM A-8: Information for those carrying out PTIs

High level description	More efficient inspection: vehicles inspected according to their expected features Avoid burdening drivers with doubts about expected performances and equipment of the vehicles Reduce the inspection time
Response times	Undefined
Minimum information required	Undefined An adequate definition of the COP (certificate of conformity), considering the information necessities of PTIs may help a lot
Value	Undefined
Disadvantages	With a full set of information, cost is to be considered in an appropriate cost/benefit analysis
Policy option comments	No defined minimum policy level. No minimum level of policy is defined. Is in line with ambition to provide greater levels of information sharing. It is not possible to design or cost systems to meet this aim at this stage. Excluded from further analysis

1.1.59. AIM A-9: Ease of the work of independent garages and parts manufacturers reporting

High level description	Facilitate free competition Block exemption. Regulation already considers this, but the practice is far from perfect
Response times	Undefined
Minimum information required	All additional vehicle information. Very much dependant on each case
Value	Undefined
Disadvantages	Cost and scope. May require individual states to change PTI delivery laws and policy
Policy option comments	No defined minimum policy level. How Member States choose to deliver PTIs to the required standard is out of scope of this study. Parts manufacturer standards are out of scope of this study. Excluded from further analysis

1.1.60. AIM A-10: Police interface

High level description	More control of the vehicles on the road, beyond the road side inspection *Ease of communicating with PTI sites and other registration authorities for the control of stolen vehicles*
Response times	Seconds
Minimum information required	Undefined
Value	Undefined.
Disadvantages	Alternative systems already in place for police Stolen vehicles may not be submitted to testing, or if sold on could be highlighted under AIM A-5.
Policy option comments	No defined minimum policy level. Covered under other AIMs or systems, Excluded from further analysis

1.1.61. AIM A-11: Recall campaigns

High level description	PTI centres, road side inspectors and police may know which vehicles are pending a recall campaign In many countries it is uncertain whether all vehicle owners are aware of recall campaigns
Response times	Seconds
Minimum information required	Undefined
Value	Undefined
Disadvantages	Ability of testing centre to resolve the recall issue, or re-charge manufacturer if warranty recall
Policy option comments	No defined minimum policy level. See this as an extension of information provided under AIM A-6, or not directly relevant to PTIs unless defect causes failure. Excluded from further analysis

A4.19 The report team also recognise that there are wider uses for data exchange that have not been raised by stakeholders, and these are shown below.

Table A4. 1: Benefits of improved communications technology

Stakeholder	Use
Registration authorities	To facilitate the follow up of the vehicle, including property issues
Taxation authorities	To check if any specification related to taxes has changed
Insurance companies	To consider all the equipment covered by the vehicle insurance
Independent workshops and parts manufacturers	Better position to compete with manufacturer-linked providers
Transport authorities	Harmonisation of the approval of vehicles' modifications during their life

1.1.62. The present situation: results of survey for this study

A4.20 In order to assess the implications of possible new data exchange initiatives we wished to understand present arrangements. We therefore held a number of discussions, and sent a questionnaire to experts in different Member States.

A4.21 The options discussed here are derived from formal and informal discussions with vehicle industry specialists that have responded to the study questionnaires and given input to workshops, stakeholder meetings and follow-up meetings. The conclusions given are based on available information, current computing best practice, experience, and reviews of equivalent projects already delivered within the community.

A4.22 The questionnaire was sent to the contact point for the agency responsible for PTI testing in each Member State, (or named personnel where that information was available), or to the main government transport contact point. Where it was shown that a Member State had one or more main contractors providing the service the questionnaire was further distributed to these organisations. Reminders were sent, and in order to promote additional responses a smaller subset of questions agreed with the Commission as having the greatest potential value within an information exchange without encroaching on potentially sensitive areas such as outsourcing contracts or national security. This subset was distributed to the recipients previously listed.

A4.23 At the time of the Stakeholder meeting a total of five Member States had supplied input to the main questionnaire with an additional two states providing answers to the subset questions. A further request was made at the Stakeholder meeting for completed questionnaires, which has resulted in four more responses with varying degrees of completeness.

A4.24 The full questionnaire was designed to understand as much about Member States' applications as possible. This questionnaire was to give an accurate picture of the Member State technology support for the implementation of 2010/48/EU, recognise where omissions may exist that would impact on meeting the defined aims in Annex 4-A, and where possible predict what costs could be incurred or where existing techniques should be used to facilitate data sharing. Responders were invited to add any information they felt was pertinent to the study.

A4.25 The areas of study included:

- application topology;
- number of records held;
- number of vehicles recorded;
- number of authorised testing centres;
- database type and manufacturer;
- supporting Infrastructure;
- development cycles and methodology;
- existing data sharing techniques.

A4.26 The critical subset questions asked specifically whether information on the following aspects of PTI testing were recorded and held electronically.

A4.27 These fields are:

- vehicle Identification Number (VIN);
- registration Plate Number;
- engine Type – Petrol / Diesel / LPG / Electric / Hybrid;
- emissions Euro Class;
- mileage / Odometer reading;
- failures;
- failure details recorded;
- date of first registration.

1.1.63. Summary of findings

A4.28 Of those that responded (both full and partial) the following results were seen.

VIN	Recorded level 100 per cent
Registration plate	Recorded level 91 per cent
Engine type	Recorded level 100 per cent except hybrids with one stated omission
Engine euro class	Recorded level 82 per cent
Mileage / odometer reading	Recorded level 82 per cent
Failures	Recorded level 100 per cent (yet may not be consistent recording)
Failure details	Recorded level 82 per cent and not consistent
Date of first registration	Recorded level 100 per cent

A4.29 Further analysis of the more detailed responses showed a far wider variance of response, the highlights of which are discussed below.

1.1.64. Topology, databases and infrastructure

A4.30 Whilst 100 per cent of systems were written against relational databases, the manufacturers and versions of database used were for the most part unique. Oracle was marginally more prevalent but not decisively so, and of those Database systems used both commercial and non-commercial versions were deployed along with a wide range of underlying hardware and operating systems. In addition to the Oracle instances discussed, MySQL and MSSQL Server were also installed.

A4.31 It should also be noted that whilst most information in these systems is held in structured format one nation also held Blobs (these are typically scanned images or photos stored within the structure of the database). This technique is often used to simplify the programming overhead; however, it typically significantly increases the size of the data store required.

A4.32 Some respondents indicated that they perform a level of archiving to maintain performance and remove legacy information. This will impact the ability to make long-term trend analysis should this be required.

1.1.65. Records held

A4.33 The number of records held against the number of vehicles managed varies widely across the Member States, and appears to reflect the level of details stored rather than a build-up of historic records. Database sizes vary widely and range from less than 50GB to over 200GB in size with the maximum ratio of records to vehicles of 14:1.

1.1.66. Information held

A4.34 Some fields, in addition to those referenced above, are common to most systems. These include minor defects recorded and brake-effectiveness tests. The following breakdown covers commonality of recording. It should be noted that no one country records all details and there is no apparent hierarchy of intensive to minimal data collection across the responding Member States.

- 71 per cent recorded: lighting system details;
- 57 per cent recorded: SRS or airbag information;
- 42 per cent recorded: ABS systems and/or emissions and/or body kit modifications;
- 14 per cent recorded: routine tyre tread levels.

A4.35 It is noted that whilst the defects most contributing to accidents and poorer accident outcomes are tyres and brakes, only one country records tyre-tread information details and no country routinely records the levels of perishable parts of the braking systems (such as pads and disks) although some do include them as an advisory notice.[143]

1.1.67. Existing information input and exchange techniques

A4.36 Data input varies from respondent to respondent with no common method showing from the small sample. Methods used include: direct data input via terminal, web interface or XML data uploads, or FTP (file transfer protocol) bulk uploads via the internet or other secured communication.

1.1.68. Development cycles, costs and methodology

A4.37 All respondents indicated that the Agile methodology for application development was used to drive enhancements to the system. This method is highly efficient at driving development and updates quickly into production, and meeting and modifying requirements; however, a common result of poorly managed Agile developments can be poor documentation or duplication / unrepeatable effort. This study is not in a position to comment on whether documentation standards are sufficient to aid swift transition to a shared data model.

A4.38 Where costs for development were provided, these are very low compared to expected commercial rates; however, they are consistent across all respondents. The charge expected to add a new data field to an application is quoted at less than € 1,000.

1.1.69. High level technical design

A4.39 Whilst this is not the forum for an in-depth technical design which is a separate phase of EU policy decision–making, it is important as part of this economic impact assessment to give expected costs associated with such a systems delivery. To this end a high-level design is needed, of typical infrastructure options, in order to meet the aims.

A4.40 This section is not a detailed requirements analysis, as defined by Commission policy.

[143] based on Dekra information and anecdotal evidence from tyre manufacturer focus group.

Strategic information analysis systems

A4.41 The information required to meet the objectives for these systems are, from the responses of the study, available at the national level from the majority of Member States. Those that do not currently store this information will be obliged to, under the 2010/48/EU regulations, and are working towards including this. Where specific vehicle types, such as motorcycles, are not tested by Member States the information will not be available.

A4.42 The key information is stored within the Member States' roadworthiness databases. The nature of the information needed for strategic planning is typically non-sensitive, and providing that personal data are held in separate tables it should not cause any data protection issues in creating a central store. Those systems that do hold personal and technical information within the same tablespace could be made anonymous and obfuscated using industry standard tools to satisfy any personal / private data concerns.

A4.43 Strategic planning can occur at multiple levels and therefore should be open and usable by regional agencies and Member State central administrations, as well as the EU administration. With this in mind, whilst the focus of this report is to provide reporting capability to the Commission, Member States should be encouraged to use the extracted data for their own use. Should all Member States agree to this it may be more cost-effective for each state to submit reports (rather than raw data), and for the Commission to amalgamate these manually. If this route is taken there will, however, be compromises that need to be made. The first is that the burden on each Member State will increase, the second is that flexibility and responsiveness to new "questions" will decline.

A4.44 The final step is to determine the most efficient method to allow these various users to analyse the data without impacting the source system and the users that created it, or burdening one user group with all processing responsibilities.

A4.45 Given that a single non-complex query could require visibility of excess of 300 million rows of data scaling, an interconnected data exchange would be cost-prohibitive and cause the vehicle testing applications of each Member State to slow unacceptably.

A4.46 Replicating centrally and merging databases is also prohibitively expensive in terms of central infrastructure needs, and also then places a restriction on Member State initiatives for modernisation and innovation in case it disrupts the data integration. With many different application vendors each rolling out updates this option is not feasible.

A4.47 As such the suggested technical design is for a standard Extract / Archiving tool that will support heterogeneous database vendors in producing images of the PTI databases, selecting only those data fields that are relevant to the planning requirements and omitting (or privatising where omission is not feasible) all other records. Because only limited fields are required the central integration is far simpler; alternatively, each country could be analysed separately with suitable data connectors. It is still recommended to centralise the information within the EU to reduce the traffic overhead of multiple queries. The original images, which remain in-country, could be used by the Member State if they

do not already have a decision support system. The final advantage of this method is that historic data can be retained within the planning model where the production system may undergo archiving of old data to maintain performance levels and contain costs.

A4.48 This model is effective for the emission / mileage and vehicle demographics analysis aims (A1 & A2) discussed above.

A4.49 This method is not best suited to the AIM A-3: Consumer Advice – 1, which aims to show fleet inspection issues by vehicle type. Some countries already provide this information free via web access to (their) citizens, either through the testing partner or the central agency themselves. Consideration needs to be made to those (non-)government organisations that provide this information on a commercial basis either via web access or through other mediums such as monthly magazines/ guides.

A4.50 Implementing a web mashups interface to consolidate existing web feeds and services, and then providing a web / mobile enabled weblink to the consolidated data reuses existing technology and is cost–effective; however, it will require monitoring to ensure the data access remains consistent and up-to-date. An alternative is to request the raw data from the Member State (VOSA is able to provide this in CSV format) and to centrally merge it.

A4.51 In web development, a mashup is a web page or application that uses and combines data, presentation or functionality from two or more sources to create new services. The term implies easy, fast integration, frequently using open-application interfaces and data sources to produce enriched results that were not necessarily the original reason for producing the raw source data.

Operational infrastructure design

A4.52 Based on the quantified benefits of aim A-6, the type approval datastore should be seen as a critical complementary system for policy options to support accurate testing to deliver rising safety standards as a result. This system is currently in development in a number of Member States, and is a recommendation of CITA and is under review by the ACEA (European Automobile Manufacturers Association). The aim is an input of information to the PTI testing process and therefore is applicable to all policy options. Whether this should be maintained by Member States, centralised, or provided by manufacturer is open to debate.

A4.53 The factors influencing design include:

- expected numbers of standard approvals across all Member States vs. number of Member State specific approval documents;
- frequency of update of an individual record to meet Member State regulations;
- number and type of updates to vehicle fleet registration as a whole; and

- the number of users who should reasonably expect access.

A4.54 The key design factor here focuses on who is responsible for the supply and maintenance of this data; the Member State where the vehicle is registered or the manufacturer of the vehicle.

A4.55 The remaining operational aims concern the recording and redistribution of information from the PTI test itself. The policy choice will determine the level of information mandated for exchange; however, all options could supply and benefit from information exchange. The exception is that, in order to facilitate policy options 3 and 4, a data exchange standard is required to ensure that application modernisation and innovation in all forms is not restricted by interoperability testing with 26 other applications for PTIs and potentially an equal number of Roadside Test databases. Determining the level of information exchange should be the subject of detailed design requirements.

A4.56 Implementing a data exchange does not require the centralisation or standardisation of databases or applications if messaging techniques are used. In fact it should be stated that implementation of a centralised system for the running of PTI testing across Europe is cost-prohibitive, compared to retaining ownership and responsibility of data at the Member State level with a peer-peer connectivity with centralised routing. This has been tried and tested with other systems such as Tachonet, and with costs of network infrastructure decreasing and performance improving this still holds true.

A4.57 Should significant volumes of detailed information be shared, application providers should move toward conformity with the failure notice codes laid out in directive 2010/48/EU to reduce “translation” processing. This, however, is costly and should only be undertaken where need is proven.

A4.58 The current trend of using XML as the data transfer protocol appears sound, with Tachonet performance within the Member States for the most part meeting service level agreements. This and other similar systems, however, transmit relatively few data fields and therefore careful consideration is necessary to ensure that the minimum volumes of data are transmitted to adequately meet the end user’s requirements.

A4.59 Typical XML challenges include:

- The very nature of XML makes it 3 to 10 times more expansive than traditional communications mechanisms, rendering XML applications more computationally intensive and network-hungry. With an increase in XML traffic, ensuring application performance and server efficiency becomes problematic unless rigorously monitored. CITA have made a recommendation to standardise the coding of information into the database (CITA recommendation number 15 and complies for the most part with 2010/48/EU), which results in excess of 400 data fields including photographic information. Decisions on the PTI testing level will fundamentally affect the sizing of any system capable of delivering this volume of data.

- In addition to the data size transported the frequency also needs to be considered. Approximately one per cent of respondents from the survey suggested they make specific inter-country journeys to undergo PTI testing. Extrapolating this out suggests 3 million “transactions” will occur through the defined testing cycle. This upload phase equates to approximately 17 uploads per minute peaking at yearly testing cycles.

- Download data volumes are dependent on individual need and have not been defined to a level where accurate assessments can be made (see AIMs above). As such, a base exchange system is suggested which could scale as required. When combining data volumes with throughput, it is clear that unless the information required to meet a specified aim is clearly defined there is a significant risk of escalating costs both in network and server infrastructure. It is recommended that the majority of PTI test data is retained in the system of the delivering Member State, with the minimum transferred to meet business need so as to circumvent surplus initial data transfers whilst avoiding long-term re-requesting of data through the exchange system.

- New security threats arise with an increase in XML traffic. When XML facilitates the sharing of common services outside traditional security mechanisms, information often crosses trust boundaries between applications. Additionally, new XML threats are regularly directed at networks. This risk is minimised through the S-TESTA network; implementation, however, would require strong authentication routines. With the potentially large number of end-users in scope, careful consideration needs to be made on what data are exchanged and the endpoint security measures required. It is expected that Member States will have adequate security measures already in place for the existing systems. This study has not investigated the security designs as this would be a key phase of the detailed design.

- Availability and integration: the growth in the number of users and the breadth and scope of applications make availability and integration raise separate challenges. Ensuring availability and integration across applications as the user base grows can require huge time and resource investments, and can have a significant effect on application performance. It is critical therefore to understand the true user population which should be clearly defined at the detailed design phase.

A4.60 The final operational aim A-5 involves consumer access to previous and current test results to facilitate the exchange of goods, avoid fraudulent purchases, and be aware of advisory notices that may have become safety concerns since the test.

A4.61 This system of review is already available in Member States through the web (although some Member States do not yet provide this service). Charges here are variable with some Member States providing this service free to the enquirer. By opening up the back-end databases through the data exchange in place for mutual recognition, historic

information could be provided with little change to the existing consumer front-end. The Commission will need to discuss with its members a suitable EU method of charging for this service, particularly where the service is currently free. The cost benefit for this service cannot yet be defined as there is a lack of data relating to cross-border sales rates for vehicles, and with web connectivity a consumer could still sign into the originating country's site rather than through a central portal. Comments from the stakeholder meeting suggest that the majority of vehicles are sold in the originating country, although this cannot be quantified or substantiated.

Cost Benefit Analysis

A4.62 Due to the limited input from the stakeholders on the benefits of information exchange, and where input has been made the level of quantifiable value benefit is such that the cost/benefit analysis for information exchange cannot be made, indications of rough order of magnitude costs (+/- 25 per cent), rather than return-on-investment or payback statements are given.

A4.63 The costs of implementation are broken down into the following categories:

- one-off capital expenditure including Infrastructure, application-modification cost, system-provisioning testing and documentation, and high availability / business recovery elements (Initial expenditure - Init.);

- ongoing operational support costs, such as hardware and software maintenance, system and data backups, password and user management (Maintenance costs - Maint.)

- administration service review costs, to provide details of service delivery against defined service levels such as data or and monitor for service outages / poor responses against agreed levels and to reporting to the Commission / citizens of overall performance (Management costs - Mgmt.).

Aim reference	Type	Policy level	Ability to execute. Across Member States	Quantified benefits / value statement
A1: CO2 and mileage planning	Strategic	All	Partial – full conformity of 2010/48/EU will facilitate	Undefined
A2: Vehicle demographics	Strategic	All	Partial – full conformity of 2010/48/EU will facilitate	Undefined
A3: Fault prevalence	Strategic	From level 2 Optimum 3 +	Limited – requires standardisation of information	Undefined
A4: Roadside test authority support	Operational	From Level 1 Optimum at level 3+	Strong on limited data fields. Requires greater definition	Undefined
A5: Vehicle details consumer advice	Operational	From Level 1 Optimum at level 3+	Full and existing within some Member States	Undefined
A6: Type approval information within PTIs	Operational	All levels Optimum at Level 3+	Limited, non-standard deployment limits reuse	0.5-0.9% death reduction p.a.
A7: Anti-corruption /performance checking of PTI establishments	Operational and strategic	Integral from Level 3+	Low, limited by ability to prosecute across borders and by recognition of testing centre details	Undefined

Strategic reporting cost breakdown					
AIM	**Sizing qualification**	**Application change costs, per state (% of states impacted)**	**Member State costs (27)**	**Central costs**	**Total estimated TCO (5yr)**
Strategic A1 & A2	Based on delivery and processing of 2TB of base data	Init. € 15,000 (20%) Maint. No change Mgmt. No change	Init. € 40,000 Maint. € 5,000 Mgmt. € 2,000	Init. € 2,200,000 Maint. € 150,000 Mgmt. € 15,000	Init. € 3,400,000 Maint. € 1,300,000 Mgmt. € 345,000
TOTAL central supply a data intelligence system					Total € 5,045,000
Strategic A3	Based on providing central EU web Mashup over existing systems. Excluding network where existing infrastructure is deemed sufficient	Init. None Maint. No change Mgmt. No change	Init. None Maint. No change Mgmt. No change	Init. € 180,000 Maint. € 70,000 Mgmt. € 10,000	Init. € 180,000 Maint. € 350,000 Mgmt. € 50,000
TOTAL for consumer support engine for common failures	On assumption that this information is already available within MS and simply merging data				Total 580,000
Operational cost examples					
AIM	**Sizing qualification**	**Application change costs, per state (% of states impacted)**	**Member State costs (27)**	**Central costs**	**Total estimated TCO (5yr)**
Aim A-6	Development of existing applications to concurrently show type approval information based on VIN and Plus 50 data fields. Raw data feeds from manufacturers.	Init. € 100,000 (100%) Maint. € 20,000 Mgmt. No change	Init. € 20,000* Maint. € 4,000 Mgmt. No change	Init. € 80,000 Maint. None Mgmt. € 10,000	Init. € 2,120,000 Maint € 3,240,000 Mgmt € 50,000

	This excludes requests to other Member States covered in Example 1 for over-border testing Central costs cover standard requirements statements		*Costs for storage uplift and excluding performance uplifts or associated DB licenses	Excluded manufacturer costs to supply data	
Example 1	Based on delivery of 10 standard data fields at a sustained rate of 50 enquiries per minute, excluding network charges (26Mill Transaction pa)	Init. € 150,000 (100%) Maint. € 25,000 (100%) Mgmt. No change	Init. € 80,000 Maint. € 30,000 Mgmt. € 10,000	Init. € 750,000 Maint. € 200,000 Mgmt. € 20,000	Init. € 6,960,000 Maint. € 8,425,000 Mgmt. € 1,450,000 Total € 16,835,000
Example 2	Network costs 512Mbit LL 1Mbit LL 8Gbit LL		 € 500 (pm) € 750 (pm)	 € 4,200 (pm)	 € 810,000 € 1,215,000 € 252,000
Example 3	Based on re-engineering application for 400 field changes, to enforce standardisation of failure notice codes (rather than	Init. € 400,000 (100%) Maint. No change Mgmt No change			Init. 10,800,000

	translate in messaging)				
TOTALS for operational purposes for mandatory recognition (level 3) and above	Uplift of existing systems* to provide the "minimum" amount of data required to meet the need of confirming a vehicle has a valid PTI certificate, introduce a type approval register per country, and undertake a standardisation of failure coding to ease data exchange and optimise messaging overheads.[144]	Init. € 650,000 Maint. € 45,000 Mgmt. No change	Init. € 100,000 Maint € 43,000 Mgmt. € 10,000	Init. € 830,000 Maint. € 250,400 Mgmt.. € 30,000	5yr TCO € 36,387,000
Total for voluntary mutual recognition Level 2 only	Based on providing access to Member State PTI interface through website to satisfy bi-lateral recognition agreements. Per agreement. Suggested costs include translation services. Assumption of average of 4 contracted testing sites per agreement.	Per agreement Init. € 10,000 Maint. € 3,000 Mgmt. € 3,000	Per testing site contracted Init. € 2,000 Maint € 5,000 Mgmt. No change Uplifts for second agreements will be a fraction of initial costs.		
TOTALS for operational purposes	Based on 10 Member States each with 4 voluntary recognition agreements in place. Each using the same 4 "international" testing stations				€ 1,130,000

[144] Systems are assumed to be electronic. Costs to bring these systems in line with 2010/48/EU are not included as these are assumed to be already in plan for each MS

Note: Int. = Initial expenditure, Maint. = Maintenance costs, and Mgmt. = Management costs

APPENDIX 5: POTENTIAL LEVELS FOR ROADSIDE INSPECTIONS

1.1.70. RSI: Basic level

Technology and procedures	Vehicle identification and visual inspection of all relevant parts on roadside
Number of vehicles tested	Randomised. Not in relation to existing traffic situation in MS (no statistical background for inspection)
Vehicle categories covered	Only HGV exceeding 3.5 tonnes
Personal skills and qualifications	Policeman and others involved in traffic control
Supervision and enforcement measures	Allowed to continue travelling after instant repair if defects are found

** For taxis and ambulances*

1.1.71. RSI: Medium level

Technology and procedures	Vehicle identification and visual inspection of all relevant parts on roadside. After vehicle is categorised as unsafe, the vehicle is taken to an inspection station where a roller brake tester, emission tester and all other PTI-equipment are available.
Number of vehicles tested	Randomised and pre-selected. Not in relation to existing traffic situation in MS (no statistical background for inspection)
Vehicle categories covered	$M_{23}N_{23}O_{34}$
Personal skills and qualifications	Specially trained staff from police or other departments in region
Supervision and enforcement measures	Evaluation supervision by road administration and Ministry of Transport as well as PTI organisations

1.1.72. RSI: High level

Technology and procedures	Special mobile equipment, like mobile roller brake tester or mobile lifting platform which includes play detectors and mobile emission devices capable for testing HGVs
Number of vehicles tested	Pre-selected high volume of testing with re-testing of a lower number of vehicles in-depth (but significant share) in accordance with the overall traffic at MS level
Vehicle categories covered	$M_{23}N_{23}O_{34}$
Personal skills and qualifications	Specially trained staff from police or other departments in combination with PTI organisations
Supervision and enforcement measures	Evaluation supervision by road administration and Ministry of Transport as well as PTI organisations

A5.1 If the Commission wished to define a system of roadside testing for all Member States, the first step would be to define clearly the technology and processes to be used for RSI as well as the exact definitions of what should be counted as a failure. The second step would be a decision on the number of vehicles to be tested in relation to the existing fleet and the known transit traffic in each MS. Pre-selection should be disallowed in order to avoid biases in the data collected.

A5.2 A two-step approach for RSI seems the most effective, with a high volume of vehicles given a brief inspection and then the smaller number of vehicles screened as likely to be incompliant sent off for further checks. From the results of Member States who already use this approach, it can be seen that approximately 10 per cent of vehicles will be found non-compliant in the initial check.

APPENDIX 6: EUROPEAN APPROACHES TO MONETISING THE VALUE OF ROAD SAFETY

A6.1 There is no one official estimate of the monetary value of road safety. This appendix gives a brief overview of some of the approaches followed in this regard.

1.48. 'The million Euros rule'

A6.2 In a Communication[145] promoting EU road safety in 1997, the Commission estimated that avoiding one fatal injury would be worth one million Euros.[146] This value encompassed the economic loss due to a fatality, in addition to a large portion of the economic loss due to injury and property damage. This was based on the assumption that any measure that improved safety, and hence led to a reduction in fatalities, would also have the effect of reducing injuries and property damage.

A6.3 This estimate is commonly used, but has the disadvantage of not having being updated since 1997.

HEATCO Recommendation

A6.4 The HEATCO project[147] (aimed at developing harmonised European approaches for transport costing and project assessment) was completed in 2006. As part of the final report, methods for evaluating costs of accidents were dealt with.

A6.5 The final report recommended a two-stage approach.

- In the first stage, there would be a correction for under-reporting of road accidents. These correction factors are as shown in the table below:

Table A6. Error! No text of specified style in document.**.29: Recommendation for European average correction factors for unreported road accidents**

	Fatality	Serious injury	Slight injury	Average injury	Damage only
Car	1.02	1.25	2.00	1.63	3.50
Motorbike/moped	1.02	1.55	3.20	2.38	6.50
Bicycle	1.02	2.75	8.00	5.38	18.50
Pedestrian	1.02	1.35	2.40	1.88	4.50
Average	1.02	1.50	3.00	2.25	6.00

Source: HEATCO final report

- In the second stage, the adjusted number of accidents would be evaluated using country-level estimates formulated using a willingness-to-pay approach. If no estimate was available, then it was recommended that the values in the following table be used.

145 Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions: Promoting road safety in the European Union: - the programme for 1997-2001 [COM (97) 131 final - Not published in the Official Journal].

146 See http://europa.eu/legislation_summaries/transport/road_transport/l24055b_en.htm for details on the calculation of this figure.

147 See http://heatco.ier.uni-stuttgart.de/.

Table 0.10 Estimated values for casualties avoided.

Country	Fatality	Severe injury	Slight injury	Fatality	Severe injury	Slight injury
	($€_{2002}$, factor prices)			($€_{2002}$ PPP, factor prices)		
Austria	1,760,000	240,300	19,000	1,685,000	230,100	18,200
Belgium	1,639,000	249,000	16,000	1,603,000	243,200	15,700
Cyprus	704,000	92,900	6,800	798,000	105,500	7,700
Czech Republic	495,000	67,100	4,800	932,000	125,200	9,100
Denmark	2,200,000	272,300	21,300	1,672,000	206,900	16,200
Estonia	352,000	46,500	3,400	630,000	84,400	6,100
Finland	1,738,000	230,600	17,300	1,548,000	205,900	15,400
France	1,617,000	225,800	17,000	1,548,000	216,300	16,200
Germany	1,661,000	229,400	18,600	1,493,000	206,500	16,700
Greece	836,000	109,500	8,400	1,069,000	139,700	10,700
Hungary	440,000	59,000	4,300	808,000	108,400	7,900
Ireland	2,134,000	270,100	20,700	1,836,000	232,600	17,800
Italy	1,430,000	183,700	14,100	1,493,000	191,900	14,700
Latvia	275,000	36,700	2,700	534,000	72,300	5,200
Lithuania	275,000	38,000	2,700	575,000	78,500	5,700
Luxembourg	2,332,000	363,700	21,900	2,055,000	320,200	19,300
Malta	1,001,000	127,800	9,500	1,445,000	183,500	13,700
Netherlands	1,782,000	236,600	19,000	1,672,000	221,500	17,900
Norway	2,893,000	406,000	29,100	2,055,000	288,300	20,700
Poland	341,000	46,500	3,300	630,000	84,500	6,100
Portugal	803,000	107,400	7,400	1,055,000	141,000	9,700
Slovakia	308,000	42,100	3,000	699,000	96,400	6,900
Slovenia	759,000	99,000	7,300	1,028,000	133,500	9,800
Spain	1,122,000	138,900	10,500	1,302,000	161,800	12,200
Sweden	1,870,000	273,300	19,700	1,576,000	231,300	16,600
Switzerland	2,574,000	353,800	27,100	1,809,000	248,000	19,100
United Kingdom	1,815,000	235,100	18,600	1,617,000	208,900	16,600

Notes: Value of safety per se based on UNITE (see Nellthorp et al., 2001): fatality €1.50 million (market price 1998 – €1.25 million factor costs 2002); severe/slight injury 0.13/0.01 of fatality; Direct and indirect economic costs: fatality 0.10 of value of safety per se; severe and slight injury based on European Commission (1994).

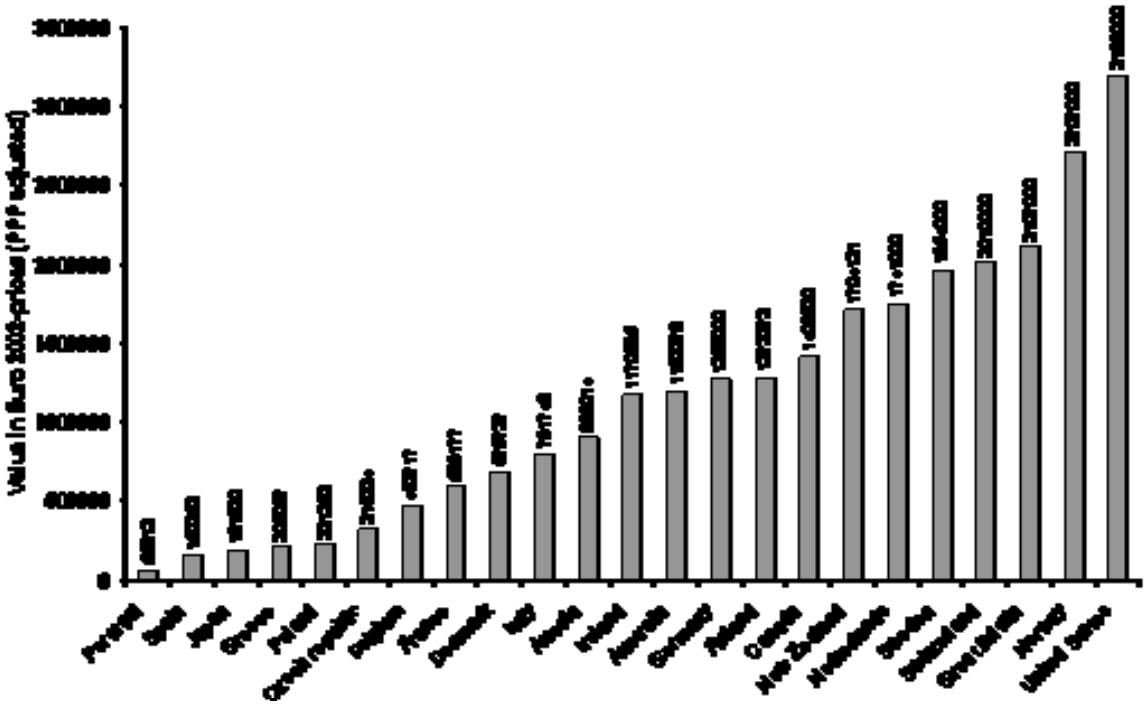
Source: HEATCO final report

1.49. Country-level Official Estimates

A6.6 Although there is no official EU level estimate for the value of an avoided fatality, several Member States have published country-level estimates formulated based on a willingness-to-pay approach. The Commission has published a comparison of these levels on its website[148] based on reviews of Sælensminde (2001), de Blaeij *et al* (2004) and Tecl and Konarek (2006). This is reproduced below.

148 See http://ec.europa.eu/transport/road_safety/specialist/knowledge/measures/monetary_valuation_of_road_safety/index.htm.

Figure A6. Error! No text of specified style in document.**.7: Monetary valuation of preventing a road accident fatality in a number of countries**



Source: http://ec.europa.eu/transport/road_safety/specialist/knowledge/measures/monetary_valuation_of_road_safety/index.htm

Other Estimates

A6.7 In 2003, in a proposal for an amendment to a Directive,[149] the Commission provided the following estimates for valuing various types of estimates.

Accident risk	Value (€ per case)
Fatal	1,000,000
Serious injury	135,000
Slight injury	15,000

A6.8 These estimates, however, do not appear in the eventual amendment.[150]

149 A proposal for an amendment to Directive 1999/62/EC on the charging of heavy goods vehicles for the use of certain infrastructures [COM(2003) 448 final]. See http://www.alpnap.org/com2003_0448en01.pdf.

150 See Directives 2006/38/EC amending Directive 1999/62/EC on the charging of heavy goods vehicles for the use of certain infrastructures (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:157:0008:0023:EN:PDF).

APPENDIX 7: CALCULATING THE TOTAL COST OF PTIS IN EUROPE

A7.1 The annual total number of inspections was calculated using the present PTI frequencies shown in Table 7.2. Given an approximate average age for scrapping vehicles of 17 years, annual inspection frequencies were calculated for each vehicle type within each Member State. Where no information was available for a Member State on the PTI frequency in question, annual inspection frequencies were estimated using the average frequency for other countries in the same PTI grouping (i.e. high / medium / low). Where this estimation has been used in the calculations it is indicated by a star (*) in the tables below.

A7.2 Figures for the stock of vehicle types within each Member State in 2008 (source: European Commission Statistical Pocketbook 2010: EU Energy and Transport in Figures) were multiplied by the relevant inspection frequency to gain an approximation of the annual number of PTIs for each vehicle type within each country.

Table A7.1: Passenger car PTI totals

Member State	PTI frequency	Car stock in 2008 (000)	Annual car PTIs (000)
Belgium	0.82	5,131	4,226
Bulgaria	0.82	2,366	1,948
Czech Republic	0.44	4,423	1,951
Denmark	0.44	2,099	926
Germany	0.47	41,321	19,445
Estonia	0.71	552	390
Ireland	0.44	1,953	862
Greece	0.60*	5,024	3,005
Spain	0.71	22,145	15,632
France	0.44	31,109	13,725
Italy	0.44	36,105	15,929
Cyprus	0.44	444	196
Latvia	0.50	933	467
Lithuania	0.47	1,671	786
Luxembourg	0.85	329	281
Hungary	0.41	3,055	1,258
Malta	1.00	229	229
Netherlands	0.71	7,542	5,324
Austria	0.82	4,285	3,529
Poland	0.82	16,080	13,242
Portugal	0.71	4,408	3,112
Romania	0.50	4,027	2,014
Slovenia	0.47	1,045	492
Slovakia	0.88	1,545	1,363
Finland	0.82	2,700	2,224
Sweden	0.82	4,279	3,524
United Kingdom	0.88	29,279	25,834

Source: EU energy and transport in figures – Statistical pocketbook 201; AUTOFORE Study on the Future Options for Roadworthiness in the European Union: WP540 – Analysis of pass/fail rates and accidents for different vehicle types in relation to PTI – frequency and vehicle age; DEKRA

Table A7.2: Bus & coach PTI totals

Member State	PTI frequency	Bus/coach stock in 2008 (000)	Annual bus/coach PTIs (000)
Belgium	4.00	16	64
Bulgaria	1.00	25	25
Czech Republic	1.00	21	21
Denmark	1.00	15	15
Germany	1.00	75	75
Estonia	1.00	4	4
Ireland	1.00	9	9
Greece	1.00*	27	27
Spain	1.82	62	113
France	0.44	93	41
Italy	1.00	98	98
Cyprus	1.00	3	3
Latvia	1.00	11	11
Lithuania	1.00	14	14
Luxembourg	2.00	2	3
Hungary	1.00	18	18
Malta	1.00	1	1
Netherlands	1.00	11	11
Austria	1.00	9	9
Poland	1.00	92	92
Portugal	1.00	15	15
Romania	1.00	42	42
Slovenia	1.00	2	2
Slovakia	1.00	11	11
Finland	1.00	12	12
Sweden	1.00	14	14
United Kingdom	1.00	114	114

Source: EU energy and transport in figures – Statistical pocketbook 201; AUTOFORE Study on the Future Options for Roadworthiness in the European Union: WP540 – Analysis of pass/fail rates and accidents for different vehicle types in relation to PTI – frequency and vehicle age; DEKRA

Table A7.3: Goods vehicle PTI totals

Member State	PTI frequency	Goods vehicle stock in 2008 (000)	Annual goods vehicle PTIs (000)
Belgium	2.00	712	1,424
Bulgaria	1.00	299	299
Czech Republic	1.00	607	607
Denmark	1.00	531	531
Germany	1.00	2,524	2,524
Estonia	1.00	83	83
Ireland	1.00	351	351
Greece	1.10*	1,290	1,424
Spain	1.00	5,406	5,406
France	1.00	5,212	5,212
Italy	1.00	4,535	4,535
Cyprus	1.00	122	122
Latvia	2.00	130	260
Lithuania	1.00	150	150
Luxembourg	2.00	34	69
Hungary	1.00	471	471
Malta	1.00	48	48
Netherlands	1.00	1,026	1,026
Austria	1.00	381	381
Poland	1.00	2,922	2,922
Portugal	1.00	1,350	1,350
Romania	1.94	645	1,253
Slovenia	1.00	84	84
Slovakia	1.00	249	249
Finland	1.00	425	425
Sweden	1.00	510	510
United Kingdom	1.00	3,874	3,874

Source: EU energy and transport in figures – Statistical pocketbook 201; AUTOFORE Study on the Future Options for Roadworthiness in the European Union: WP540 – Analysis of pass/fail rates and accidents for different vehicle types in relation to PTI – frequency and vehicle age; DEKRA

Table A7.4: Powered two-wheel PTI totals

Member State	PTI frequency	Two-wheel stock in 2008 (000)	Annual two-wheel inspections (000)
Belgium	-	388	0
Bulgaria	0.52*	107	55
Czech Republic	0.44	893	394
Denmark	0.45*	205	92
Germany	0.50	5,852	2,926
Estonia	0.76	18	13
Ireland	0.45*	39	18
Greece	-	1,389	0
Spain	0.41	4,912	2,022
France	-	2,704	0
Italy	0.44	9,189	4,054
Cyprus	0.52*	43	22
Latvia	1.00	51	51
Lithuania	0.52*	46	24
Luxembourg	0.85	40	34
Hungary	0.44	142	62
Malta	0.52*	14	7
Netherlands	-	1,480	0
Austria	1.00	691	691
Poland	0.82	1,607	1,324
Portugal	-	550	0
Romania	0.52*	72	37
Slovenia	0.88	82	72
Slovakia	0.45*	70	32
Finland	-	422	0
Sweden	0.44	554	244
United Kingdom	0.88	1,322	1,166

Source: EU energy and transport in figures – Statistical pocketbook 201; AUTOFORE Study on the Future Options for Roadworthiness in the European Union: WP540 – Analysis of pass/fail rates and accidents for different vehicle types in relation to PTI – frequency and vehicle age; DEKRA

A7.3 To estimate the current total cost of PTIs, 2004 inspection fees for passenger cars were taken from Table 7.4 as an estimate of the cost of a PTI within a country. Again, where these were not available for a Member State they were estimated by the average cost in other Member States with the same PTI category. These values were then adjusted in line with price rises between 2004 and 2010.[151] These were then multiplied by the total number of PTIs in each country and summed to give an estimate of € 8.5 billion for the current total cost for PTIs in the EU.

[151] HICP annual average index for EU27 in 2004 was 97.77 and in August 2010 was 112.01. So 2004 prices have each been multiplied by 112.01/97.77 to find a present Euro value. Source: Eurostat, HICP-all items-annual average indices; and HICP-all items-[teicp000].

Table A7.5: PTI totals by Member State

Member State	PTI price in 2010 (€)	Total PTI (000)	Total cost (€ million)
Belgium	28.07	5,713	160
Bulgaria	33.79	2,328	79
Czech Republic	57.28	2,974	170
Denmark	61.64	1,564	96
Germany	45.83	24,970	1,144
Estonia	34.37	491	17
Ireland	55.45	1,240	69
Greece	41.24	4,456	184
Spain	35.52	23,173	823
France	63.01	18,978	1,196
Italy	40.10	24,615	987
Cyprus	33.79	343	12
Latvia	48.67	788	38
Lithuania	33.79	974	33
Luxembourg	23.94	387	9
Hungary	23.12	1,809	42
Malta	33.79	286	10
Netherlands	48.67	6,361	310
Austria	42.39	4,611	195
Poland	24.39	17,580	429
Portugal	28.22	4,477	126
Romania	33.79	3,345	113
Slovenia	40.10	650	26
Slovakia	48.67	1,654	80
Finland	56.14	2,660	149
Sweden	37.81	4,292	162
United Kingdom	60.14	30,988	1,863
Total		**191,708**	**€ 8,524**

Source: AUTOFORE (2007) "WP 700: Cost-benefit analyses for roadworthiness options"